Recirculated Portion of Appendix H, Hazards

H1: Rail Safety Study for El Paseo Fresno, March 2008
H2: Addendum to the Rail Safety Study, July 2010

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Appendix H1
Rail Safety Study for El Paseo Fresno, March 2008

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RAIL SAFETY STUDY FOR:

EL PASEO FRESNO

prepared for:

O&S HOLDINGS, LLC

Contact:
Mr. Gary Safady
President

prepared by:

THE PLANNING CENTER

Contact:
Cathleen M. Fitzgerald
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MARCH 2008

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1.1 PURPOSE

This report presents the results of a rail safety study (RSS) prepared for the El Paseo Fresno Project. The RSS identifies rail lines located within a 1,500-foot radius of the proposed development and evaluates the actual or potential endangerment to site occupants from an incident (derailment or other accident) that could occur along the rail lines.

1.2 SITE LOCATION

The approximately 238-acre project site is located at the northwest gateway of the City of Fresno within the Bullard and West Community Plan Areas. The property under evaluation is bounded generally by Herndon Avenue on the north, Bryan Avenue and Bullard Avenue on the east, Carnegie Avenue on the south, and State Route 99 (SR-99) on the west (Figure 1). The proposed project will be implemented in five phases and will include a large retail marketplace, a lifestyle center or town center project, a mid-rise office park and hotel, and a light industrial business park.

1.3 STUDY OBJECTIVES

The purpose of the RSS is to accomplish the following objectives:

- Identify all active and inactive rail lines located within 1,500 feet of the proposed project site
- Identify track characteristics, including whether it is single or double track, curvature, track gradient, switching equipment, signage, and warning systems
- Identify locations and characteristics of crossings, including type (vehicular or pedestrian), relationship to rail line (at grade, elevated, or below grade), and accident history
- Identify rail line operational information, including type of rail traffic (passenger, freight, or both), type of cargo (hazardous and/or non-hazardous), frequency of train traffic, length of trains, speed, and track maintenance schedule (if available)
- Conduct an incident analysis, using accident data provided by federal and state agencies (National Transportation Safety Board, Federal Railroad Administration, California Public Utilities Commission, etc.) to determine the probability of an accident occurring within 1,500 feet of the proposed project site
- Conduct an additional site-specific analysis of potential risk to occupants of the proposed project site, based on rail line characteristics, train speeds, presence of at-grade vehicle crossings, etc.

1.4 ASSESSMENT METHODOLOGY

The RSS process is composed of three steps. The first step is to collect existing information on the rail line and conduct a qualitative safety assessment, based on rail traffic, type of cargo, train speed, and highway-rail crossings. The second step involves calculating the probability of an accident or derailment on the rail line within a 1,500-foot radius of the project site. Finally, the accident/derailment probability is modified to take into account site-specific conditions, including accident data for the railroad owner/operator, project site frontage, and the probability that the site occupants would be present when an accident occurs. In addition, the potential increase in accident rates at the highway-rail crossings with additional traffic from the proposed project was evaluated.

2.1 RAILROAD LOCATION AND OWNERSHIP

There is one rail line located within 1,500 feet of the El Paseo Fresno project site. The railroad right-of-way, which is owned and operated by Union Pacific (UP), is approximately 150 feet wide and is located east and approximately parallel to North Golden State Boulevard. The UP railroad right-of-way bisects the proposed development. There is only freight traffic along this line.

Just south of the crossing at North Carnegie Avenue, the one mainline track that parallels the proposed development along its entire length splits into two, with one main track and one siding track that continue to the south. There are two at-grade crossings within 1,500 feet of the project site at Herndon Avenue and North Carnegie (Bullard) Avenue.

There are no active spurs within a 1,500-foot radius of the project site. A former spur is present just north of the Carnegie Avenue crossing. The spur branched from the main track to the west, crossing Golden State Boulevard and served the West Industrial Facilities building. However, sections of the track have been removed and Golden State Boulevard has been repaved so the spur is not longer active.

2.2 SITE RECONNAISANCE

The Planning Center, conducted a site reconnaissance on March 10, 2008 between the hours of 7 am to 4 pm. Photographs documenting the condition of the track and highway-rail crossings are provided in Appendix A. The reconnaissance consisted of evaluating the following:

- Train traffic
- Track condition
- Presence of spurs
- Highway-rail crossings
- Safety devices at each crossing (signage, flashing lights, and gates)
- Potential for trespass onto the railroad easement

2.2.1 Track Conditions

The railroad right-of-way at this location consists of one main line track constructed of welded steel that appeared to be in good condition at the time of the site inspection. This track, which is owned and operated by UP, is part of the Valley Route line within the San Joaquin Division. The main line track is straight throughout the area, and is maintained to Class 4 standards with inspection frequencies of twice a week. There is only freight traffic along this line. There are two at-grade crossings within a 1,500-foot radius of the proposed site at Herndon Avenue and North Carnegie (Bullard) Avenue.

The Federal Railroad Administration's (FRA's) website states that there are approximately 19 trains per day that pass by the proposed site, with 8 of the trains traveling between the hours of 6 am and 6 pm (day-through hours). The maximum train speed is approximately 60 to 65 mph along this section of track.

The Planning Center conducted a one-day survey to determine the number, type, and speed of the trains that passed by the proposed site during normal operating hours (i.e, from 7 am to 4 pm). Only one UP train was observed during this time period, consisting of one locomotive and eleven freight cars. The train was traveling northbound and passed the site at approximately 10:16 am carrying single-stacked containers. It was traveling at an approximate speed of 40 mph. In addition, a UP rail maintenance truck was seen traveling southbound on the track around 2:30 pm and was assumed to be performing inspection and/or maintenance activities on the track.

According to interviews with adjacent shop owners in the area, this was not a typical traffic pattern. The manager at Johnny Quik convenient store stated that a train typically passes by every one to two hours, and the manager at Trucker's Air stated that 5 to 7 trains typically pass by in an 8-hour period. This is more consistent with the California Inter-Regional Intermodal System (CIRIS) report, which reports approximately 15 trains per 24-hour period on this segment of track (Tioga et al, 2006), and the FRA estimate of approximately 19 trains per day over a 24-hour period.

A survey also was conducted by DKS Associates as part of the traffic impact study over a 3-day period in December 2007 at three of the highway-rail crossings in close proximity to the project site – Herndon Avenue, Carnegie Avenue, and Shaw Avenue (DKS, 2008). During the hours of 7 am to 7 pm, there were 10 trains that passed by the Herndon Avenue crossing on December 12; 12 trains that passed by the Carnegie Avenue crossing on December 13; and 9 trains that passed by the Shaw Avenue crossing on December 15. Approximately half of the trains were traveling northbound and half were traveling southbound. The trains ranged in size from one to 136 freight cars, with an average train length of 52 freight cars.

Traffic on this track is controlled by a reverse signaled centralized traffic control (CTC) system, which involves wayside signals that provide directions to the train engineers as to which track and speed should be used. In addition, at the intersection of Golden State Boulevard and Herndon Avenue, simultaneous preemption (i.e., the traffic signal and railroad warning equipment, such as flashers and gates, are activated at the same time) is used to clear queued vehicles prior to the arrival of a train at the crossing.

2.2.2 Highway-Rail Crossings

There are two at grade highway-rail crossings within 1,500 feet of the proposed project site. Photographs of the crossings are provided in Appendix A and detailed information regarding the highway-rail crossings is provided in Appendix B. A brief description of each crossing follows.

2.2.2.1 Herndon Avenue Crossing – post mile: 195.75, DOT Crossing No.: 757312B

The Herndon Avenue crossing is located near the north end of the proposed development. Herndon Avenue is a four-lane street at the crossing and cross the single track at a 90 degree angle. The crossing is at-grade and there are train activated mast-mounted gates with flashing lights, bells, advance warning signs, and pavement markings (stop lines and RR Xing markings). The crossing surface between the track and the road is timber. The intersection at Herndon Avenue and Golden State Boulevard is signalized and equipped with simultaneous preemption (i.e., the traffic signal and railroad active warning devices are interconnected to activate at the same time when a train is approaching). According to Federal Railroad Administration (FRA) records, there have been seven accidents at this crossing in the past with one reported fatality and one reported injury. The accident record is provided in Appendix B and summarized herein:

Accident Date	Vehicle Involved	Cause of Accident	Number of Injuries	Number of Fatalities
11/17/1978	Auto	Stalled on crossing	0	0
11/09/1984	Truck	Moving over crossing	0	0
05/23/1985	Auto	Stopped on crossing	0	0
02/12/1988	Truck-trailer	Stalled on crossing	0	0
06/09/1993	Auto	Moving over crossing	1	0
08/16/1996	Auto	Moving over crossing	0	1
12/02/2005	Auto	Trapped	0	0

2.2.2.2 Carnegie (Bullard) Avenue Crossing - post mile: 197.20, DOT Crossing No.: 757313H

The Carnegie Avenue crossing is located at the southern end of the proposed development. Carnegie Avenue is a two-lane street at the crossing and crosses the track at a 90 degree angle. The at-grade crossing is equipped with train activated mast-mounted gates with flashing lights and bells. The advance warning signs and pavement markings are faded and not clearly visible. The crossing surface between the track and road is asphalt. According to FRA records, there have been three accidents at this crossing in the past with one injury. The accident record, which is provided in Appendix B, is summarized herein:

Accident Date	Vehicle Involved	Cause of Accident	Number of Injuries	Number of Fatalities
03/06/1976	Auto	Stalled on crossing	0	0
03/23/1982	Auto	Stalled on crossing	1	0
08/13/1983	Auto	Stalled on crossing	0	0

2.2.2.3 Accident Prediction at Highway/Rail Crossings

The FRA's GradeNet computer model was accessed online to predict the accident rates at either the Herndon Avenue or Carnegie Avenue crossing within a given year. The prediction is based on the physical and operating characteristics of the crossing as well as five years of accident history data. The results are provided in Appendix C and summarized herein:

Crossing Location	Probability of Train-Vehicle Accident
Herndon Avenue	0.074
Bullard Avenue	0.022
TOTAL	**0.096**

Given current traffic counts and the current configuration of the crossings, the Herndon Avenue crossing has an approximately 7.4% probability of a vehicle-train collision within a one-year period and the Carnegie Avenue crossing has about a 2.2% probability of a vehicle-train collision. The probability that an accident would occur at either crossing within a one-year period is 9.6%. The potential increase in highway-rail accident rates due to future population increases and traffic related to the proposed project are addressed in Section 2.5.

2.3 HAZARDOUS MATERIAL TRANSPORT

Union Pacific has the authorization to transport all types of cargo, based on Department of Transportation (DOT) and FRA regulations, which includes hazardous materials and chemicals. However, the majority of the UP trains traveling along the rail lines are carrying food products, general

freight, grain, and lumber (San Joaquin Council of Governments, 2008). Based on a commodity survey of cargo shipped by rail within the San Joaquin Valley, it appears that there is a limited amount of hazardous materials transport.

However, it is possible that trains traveling on the track next to the proposed development could be carrying hazardous materials which could result in a release if an accident or derailment were to occur. Nevertheless, the frequency of incidents involving the release of hazardous materials in California is quite low (CPUC, 1999). The probability of a hazardous material release occurring in the vicinity of the project site is provided in Sections 3.1 and 3.2. Given the high quality of straight mainline track in the vicinity of the site, the probability of a hazardous material release resulting in an adverse impact at the project site is very low.

2.4 POTENTIAL FOR TRESPASS OVER THE RAILROAD EASEMENT

There currently is direct access to the railroad track and right-of-way along the entire length of the proposed development. There are no fences or barriers to prevent adults or children from trespassing and accessing the railroad track at this location. During The Planning Center's site reconnaissance on March 10, 2008, there were numerous times when residents from the area northeast of the Herndon Avenue crossing crossed the track and either loitered on the track or in the railroad right-of-way. There were approximately 13 people within the right-of-way during this period. In addition, two other incidents involved drivers in pickup trucks traveling at high rates of speed within the railroad right-of-way; one instance involved the driver performing "doughnut" maneuvers and kicking up large amounts of dust.

Accidents involving trespassers on railroad easements account for 39% of all crossing/pedestrian accidents and 78% of the fatalities in California (CPUC, 1999). Installation of fencing and/or barriers along either side of the proposed development should alleviate the current problem with trespass on this section of the railroad right-of-way.

2.5 IMPACT OF PROPOSED PROJECT ON ACCIDENT RATES AT CROSSINGS

Concerns were expressed by the California Public Utilities Commission (CPUC) during the EIR scoping process that the proposed project, in conjunction with future traffic and population increases, would result in increased accident rates at the nearby highway-rail crossings (CPUC, 2008). Of particular concern is the close proximity of the crossing to the Golden State Boulevard/Herndon Avenue and Golden State Boulevard/Carnegie Avenue intersections and the potential for traffic queues to extend across the track.

The potential for traffic queues was addressed in the *Traffic Impact Study* (DKS, 2008). The results indicated that under current conditions, traffic queues will extend across the tracks at both intersections. Under baseline future conditions (without inclusion of traffic from the proposed project), the queue lengths would increase significantly over time, as shown in the table on the following page.

When traffic associated with the Fresno El Paseo project is considered, the queue lengths at Herndon Avenue and Carnegie Avenue would increase by approximately 50% to 65% over baseline conditions in the years 2010 and 2012. With grade separation of the Herndon Avenue crossing in 2017 and completion of Phases 1 through 4, traffic queues would occur only at the Carnegie Avenue crossing with increases of 29% to 77% over baseline conditions for the years 2017 to 2025.

Year	Baseline Conditions – Herndon Avenue	Baseline Conditions – Carnegie Avenue	With Project – Herndon Avenue	With Project – Carnegie Avenue
Existing Conditions (2008)	Queue Extends Across Tracks	Queue Extends Across Tracks	—	—
2010	200% Increase in Queue Lengths	25% to 35% Increase in Queue Lengths	65% Increase in Queue Length Over Baseline	Similar Queue Length as Baseline
2012	Similar Queue Lengths as 2010	Similar Queue Lengths as 2010	50% Increase in Queue Length Over Baseline	50% Increase in Queue Length Over Baseline
2017	Grade Separation	200% Increase in Queue Lengths West of Tracks – AM peak hour	Grade Separation	29% Increase in Queue Length Over Baseline
2019	Grade Separation	Similar Queue Lengths as 2017	Grade Separation	26% Increase in Queue Length Over Baseline
2025	Grade Separation	Similar Queue Lengths as 2019	Grade Separation	77% Increase in Queue Length Over Baseline

The FRA's GradeDec software program also was accessed online to determine the increase in accident rates at the crossings with an anticipated future increase in traffic (baseline conditions) and with additional traffic from the proposed project. The analysis took into consideration planned improvements in the Herndon Avenue crossing in 2010 (widening the street to 6 lanes) and grade separation at this crossing in 2017. No improvements to the Carnegie Avenue crossing were considered. The results are reported in the following table.

Year	Baseline Conditions – Accident Rates at Herndon Avenue	Baseline Conditions – Accident Rates at Carnegie Avenue	With Project – Accident Rates at Herndon Avenue	With Project – Accident Rates at Carnegie Avenue
Existing (2008)	0.072	0.022	--	--
2010	0.092	0.025	0.095	0.028
2012	0.095	0.026	0.102	0.031
2017	0.00*	0.027	0.00*	0.036
2019	0.00*	0.030	0.00*	0.035
2025	0.00*	0.025	0.00*	0.030

* Zero probability of highway rail accidents due to planned grade separation of crossing in 2017

With increased traffic under baseline conditions, the probability of an accident occurring at the Herndon Avenue crossing in a given year would increase from 7.2% under current conditions to 9.2% in 2010 and 9.5% in 2012. At the Carnegie Avenue crossing, the accident probability would increase from 2.2% under current conditions to 2.5% in 2010 and 2.6% in 2017. With grade separation of the Herndon Avenue crossing in 2017, the accident probability would decrease to zero at this crossing. However, the accident rate at the Carnegie Avenue crossing would increase to a maximum value of 3.0% in 2019. The decrease in the crossing accident rate at Carnegie Avenue in 2025 is due to a predicted decrease in traffic at this location, based on the analysis provided in the traffic study (DKS, 2008).

When traffic from the proposed project is considered in the analysis, the predicted accident probabilities increase slightly from baseline conditions. The accident probabilities are calculated to be 0.3% to 0.9% higher than baseline conditions for the various years of comparison. However, the overall accident probability for the corridor (both the Herndon Avenue and Carnegie Avenue crossings) would decrease from a maximum probability of 13.3% in 2012 to a maximum probability of 3.6% in 2017, due to grade separation at Herndon Avenue.

Because of the potential for cars to queue across the railroad tracks at the Herndon Avenue and Carnegie Avenue crossings, and because of the past accident history at the Herndon Avenue crossing with four instances of vehicles stopped or stalled on the tracks, it is recommended that improvements to this crossings be considered in consultation with the City of Fresno Public Works Department, Union Pacific Railroad, and the California Public Utilities Commission. Possible improvements include advance preemption, presignals, improved signage, and markings. A more detailed discussion of recommendations is provided in Section 5.

.

The probability that an accident or derailment would occur along the section of track within 1,500 feet of the project site was determined, based on railroad accident rates and site-specific conditions.

3.1 RAILROAD ACCIDENT RATES

The FRA website was accessed to determine the nationwide railroad accident and derailment rates for UP (FRA, 2008). The information is summarized below:

Year	Total Train Miles (millions)	Total Train Accidents	Total Derailments	Derailment Probability	Accident Rate/Train Mile	Derailment Rate/Train Mile
2002	186.8	824	648	0.786	4.4E-06	3.5E-06
2003	190.2	801	615	0.768	4.2E-06	3.2E-06
2004	193.1	962	726	0.755	5.0E-06	3.8E-06
2005	199.1	954	730	0.765	4.8E-06	3.7E-06
2006	203.3	879	663	0.754	4.3E-06	3.2E-06
2007	194.3	699	526	0.753	3.6E-06	2.7E-06
Average	194.5	856.5	651	0.760	4.4E-06	3.3E-06

Next, the railroad accident rates were modified, using FRA data for UP main line tracks in Fresno County over a 6-year period from 2002 to 2007, as summarized below:

Year	2002	2003	2004	2005	2006	2007	Average
Accidents	2	1	1	7	8	5	4
Accidents on Main Track	0	0	0	0	1	0	0.17
% of Accidents on Main Track	0	0	0	0	0.125	0	0.02
Cars Carrying Hazardous Materials	2	0	0	1	3	0	1
Haz Mat Cars Damaged or Derailed	0	0	0	1	0	0	0.17
Hazardous Material Releases	0	0	0	0	0	0	0
% of Total Accidents as Haz Mat Releases	0	0	0	0	0	0	0

The UP railroad company had an average of 4 railroad accidents per year in Fresno County during the 2002-2007 time frame, with only 2% of the accidents occurring on main tracks. Evaluating the train traffic on the main line track in the vicinity of the project site, the calculated accident rate/train mile for UP of 3.3E-06 was modified to account for accident rates on main lines by multiplying by a factor of 0.02.

The probability of a hazardous material release if an accident were to occur could not be calculated using existing data, because there have been no hazardous material releases along UP lines in Fresno County over the past 32 years of record. However, this cannot be assumed to be a zero risk. Because incidents of this type occur according to a Poisson distribution (i.e., as random isolated events), it can be shown that if there have been zero failures during an exposure period of N, then there is a 50% probability that the failure rate (λ) is less than 0.693/N. The operating experience of the UP main line in Fresno County has been 1,056 mi-yrs to date with no failures (32 years of record from 1975 to 2007 x 33 miles of railroad track within Fresno County). On this basis, an estimate for the probability of a hazardous material release is 6.6E-04.

Therefore, the modified rates used in this risk assessment are as follows:

- Main line accident rate/train mile for UP tracks in Fresno County – 6.6E-08
- Main line derailment rate/train mile for UP tracks in Fresno County – 5.0E-08
- Probability of a hazardous material release given an accident occurs – 4.4E-11

3.2 SITE SPECIFIC INCIDENT ANALYSIS

The likelihood of an accident or derailment occurring within a 1,500-foot radius of the project site during normal operating hours was determined, based on the calculated accident and derailment rates presented in Section 3.1. Based on the site survey and FRA reports, it was assumed that a total of 10 trains would pass by the site during the hours from 6 am and 6 pm. The length of the rail line between Herndon Avenue and North Carnegie Avenue (Bullard Avenue) was calculated to be 7,605 feet, or 1.44 mile. Then the probability of an accident or derailment occurring adjacent to the project site is calculated as follows:

$$PA = P(A) \times D \times N$$
or
$$PD = P(D) \times D \times N$$

Where PA = probability of an accident occurring within a 1,500-foot radius of the project site
PD = probability of a derailment occurring within a 1,500-foot radius of the project site
P(A) = probability of a main line railroad accident per mile per year = 6.6×10^{-8}
P(D) = probability of a main line railroad derailment per mile per year = 5.0×10^{-8}
D = distance along rail tracks within 1,500 feet of the site = 7,605 feet = 1.44 mile
N = number of trains per year during normal operating hours
= 10 trains per day x 365 days/year = 3,650 trains/yr

The calculated probabilities are as follows:

- Probability of an accident within 1,500 feet of the project site = 3.5×10^{-4}
- Probability of a derailment within 1,500 feet of the project site = 2.6×10^{-4}
- Probability of a hazardous material release if an accident were to occur = 2.3×10^{-7}

This is approximately equivalent to one accident every 2,857 years, one derailment every 3,846 years, or a hazardous material release once every 4.3 million years.

3.3 ADDITIONAL INCIDENT ANALYSIS

Based on a review of FRA accident reports in Fresno County from the years 2002 to the present, only one accident was reported on UP main line track during this time period. This accident occurred approximately 4 miles south from the project site and involved a derailment of 6 cars during a crossover from the main track to the Fresno yard track. Most accidents and derailments occur in rail yards while conducting switching operations or occur at highway/rail crossings. And most of the highway-rail crossing accidents are the fault of vehicles stopped on the track or trying to beat the train across the track, which is consistent with all of the accidents reported at the Herndon Avenue and North Carnegie Avenue crossings.

One concern is the possibility of debris from a derailment impacting the occupants of the project site. A study conducted by the Los Angeles Unified School District (LAUSD) indicated that debris from a derailment typically extends no more than 128 feet (about 1.5 rail car lengths) from the centerline of the track in a lateral buckling pattern. Although the UP right-of-way is approximately 150 feet wide at this location, the main line track is about 45 feet from the eastern property boundary and therefore debris from a derailment could extend a little more than 80 feet beyond the right-of-way boundary. However, it is very unlikely that either an accident or derailment would occur in the vicinity of the project site, based on the analyses provided in Sections 3.1 and 3.2. Furthermore, the installation of fencing or barriers on either side of the project site to reduce the potential for trespass along the track would also tend to keep any debris from a derailment contained within the right-of-way.

Another concern is the possibility of a derailment resulting in the release of hazardous materials that could impact occupants at the project site. A very small percentage of freight traffic along this rail line includes hazardous materials; most of the commodities transported in the San Joaquin Valley are food products, intermodal transport (i.e., 40-foot containers), grain, lumber, and general freight.

The transport of hazardous materials and chemicals does not constitute a major portion of the total freight traffic in California. In 2004, the transport of chemicals was 6% of the total freight traffic originating in California and 11% of the total freight traffic terminating in California (AAR, 2005). And the hazardous materials accident-caused release rate has declined by nearly 90% since 1980 (Barkan et al, 2003). As reported in Section 3.1, there were no incidents in Fresno County in the last 32 years where there was a hazardous material release along the UP rail line.

Findings

- Union Pacific (UP) owns and operates one mainline track that is used solely for freight transport in the vicinity of the El Paseo Fresno project site. The centerline of the track is approximately 45 feet from the property line of the Marketplace at El Paseo project site.

- According to FRA and San Joaquin Valley reports, there are between 15 to 19 freight trains per day operating along this UP line.

- During The Planning Center's site reconnaissance on March 10, 2008, only one train passed through the area between the hours of 7 am to 4 pm. The train consisted of one locomotive and 11 freight cars carrying single-stacked containers and traveling approximately 40 mph. A UP rail maintenance vehicle also was seen traversing the track during the site survey.

- An additional three-day survey conducted by DKS Associates in December 2007 indicated that there was a average of 10 trains per day during the hours between 7 am and 7 pm.

- The Class 4 track consists of welded rail, with speeds of 60 to 65 mph for freight trains.

- There are two at-grade crossings within a 1,500-foot radius of the project site: at Herndon Avenue and North Carnegie (Bullard) Avenue.

- The at-grade crossings are equipped with safety devices, including train activated mast-mounted gates with flashing lights, bells, advance warning signs, and pavement markings (stop lines and RR Xing markings). The signalized intersection at Herndon Avenue and Golden State Boulevard is equipped with simultaneous preemption (i.e., interconnection of the traffic signal with railroad active warning devices which activate at the same time as a train approaches).

- Many residents (up to 13) were seen trespassing along the track and railroad right-of-way during The Planning Center's site reconnaissance. There also were two instances of pickup trucks traveling at high speeds within the right-of-way, with one of the drivers performing "doughnut" maneuvers and kicking up dirt.

Conclusions

- The probability of an accident or derailment occurring within a 1,500-foot radius of the project site was estimated to be 3.5×10^{-4} and 2.6×10^{-4}, respectively. These rates are equivalent to an accident or derailment occurring once every 2,857 or 3,846 years. The probability of a hazardous material release is even lower at 2.3×10^{-7}, or once every 4.3 million years.

- No train accidents have been reported on this section of track in the past, according to FRA records, and there have been no hazardous material releases in Fresno County during the 32 year period of record

- The probability of trespass onto the railroad easement by residents in the area currently is high, based on The Planning Center's observations on March 10, 2008.

In summary, there are no circumstances present that would present special risks to occupants of the El Paseo project due to operations along the UP track that bisects the site. The track is straight at this location and well maintained, with little vertical or horizontal curvature, thus minimizing the potential for derailment. There are two at-grade crossings within 1,500 feet of the project site at Herndon Avenue and North Carnegie Avenue. There are current plans to install an underpass at the Herndon Avenue crossing and an overpass at Veterans Boulevard in 2017, which will allow access to the El Paseo Fresno project on both sides of Golden State Boulevard and eliminate the potential for highway-rail accidents at these locations.

The probability of a highway-rail accident occurring at either of the crossings within a given year is approximately 9.6%. These rates would increase to a probability of 12.1% under baseline conditions (predicted normal increases in traffic over time) and to 13.3% when additional traffic from the proposed project is considered. However, with construction of the planned grade separation of the Herndon Avenue crossing in 2017, the accident probability in the corridor would decrease to 3.0% under baseline future traffic conditions and to 3.6% when traffic from the proposed project is included.

No main line train accidents, derailments, or hazardous material releases have been reported in the vicinity of the site; there has been only one main line accident on UP track in Fresno County in the past six years.

Under current and future traffic conditions (both with and without the proposed project), traffic queues are predicted to extend across the railroad tracks at both the Herndon Avenue and Carnegie Avenue crossings, thus increasing the potential for highway-rail accidents. Also, it was observed during The Planning Center's one-day site reconnaissance that there were many trespassers crossing through or loitering within the railroad right-of-way in the vicinity of the proposed project. Therefore, the following recommendations are made to improve the safety of vehicles and pedestrians at the crossings and protect residents traveling to or from the proposed El Paseo Fresno complex.

Fencing or Concrete Wall Between Project Property Boundaries and Railroad Right-of-Way.

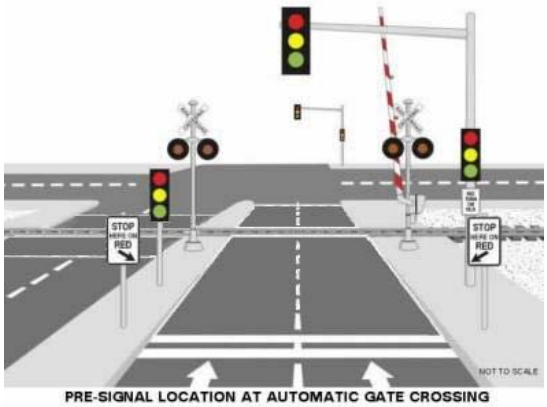
There currently are many people trespassing within the UP railroad right-of-way and the number of trespassers may increase in the future with people crossing the tracks and Golden State Boulevard to access businesses constructed on both sides of Golden State Boulevard. Therefore, it is recommended that fencing and/or a concrete block wall be installed along the entire length of the proposed project that is north and adjacent to the UP right-of-way to restrict access and reduce the probability of trespasser accidents.

Improvements at the Herndon Avenue Crossing

Because of the close proximity of the Herndon Avenue crossing to the intersection with Golden State Boulevard and the potential for traffic queues to extend across the railroad tracks under current and future conditions (both with and without traffic from the proposed project), it is recommended that improvements to the crossing and adjacent intersection be considered. The Herdon/Golden State intersection currently operates under simultaneous preemption (i.e., notification of an approaching train is forwarded to the traffic signal controller and railroad active warning devices at the same time). This is used to help clear queued vehicles from the intersection. However, because of long queue lengths that are expected to increase in the future, additional measures may be helpful to prevent vehicles from queuing across the railroad track:

- Advance Preemption. This involves notification to the traffic signal controller that a train is approaching for a period of time prior to activation of the railroad warning devices. This is helpful at intersections with simultaneous preemption that do not have enough delay time between the lowering of the gates and the movement of vehicles within the minimum track clearance distance. Another benefit to advance preemption is that it reduces the amount of warning time necessary to adequately clear the crossing of vehicles. There is little additional cost in considering advance preemption vs. simultaneous preemption, although close coordination between the highway agency, railroad company, and CPUC is required.

- Pre-Signals. Pre-signals control traffic approaching the highway-rail crossing and are often used when the crossing is a short distance from a signalized intersection. The purpose of a pre-signal is to prevent vehicles from queuing across the grade crossing and finding themselves stopped on the track in the area known as the minimum track clearance distance. The figure on the following page shows the typical configuration for a presignal at an automatic gate crossing.



PRE-SIGNAL LOCATION AT AUTOMATIC GATE CROSSING

The figure shows a road that crosses the railroad track and a little further intersects with another road at a signalized intersection. Prior to the railroad crossing, a second traffic control signal is installed and a double white line indicates where vehicles are to stop. The signal and lines are designed to prevent queuing of vehicles at the highway intersection that would back up onto the railroad track. On either side of the road at the white double line is a sign that reads "STOP HERE ON RED". Without pre-signals, drivers may focus on the downstream highway traffic signal rather than the flashing-light signals located at the grade crossing. This option is relatively costly and should be considered in terms of the benefit of reduced accident rates versus the cost of installation and maintenance of a pre-signal, given that the Herndon Avenue crossing would be grade separated in 2017.

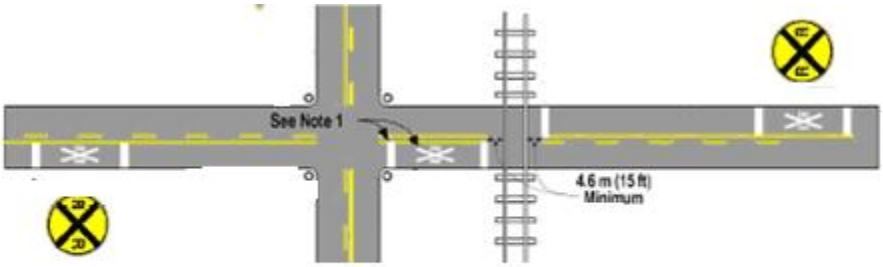
Queue Cutter Flashing-Light Beacons. In the event of very long queues, preemption may not be a practical method for clearing the track. An alternative would be the use of an automated queue-cutter flashing light beacon installed upstream of the highway-rail crossing. This should be used in conjunction with "DO NOT STOP ON TRACKS" signs. Such beacons can be activated by an induction loop on the departure side of the highway-rail crossing that detects a growing queue between the crossing and highway intersection. If the beacons are activated only when the traffic signals on that approach are not green, they can be more effective as opposed to flashing all the time.

Medians, Improved Signage, and Turn Restrictions. Other relatively low cost alternatives that have the potential of reducing accident rates at highway-rail crossings include:

1) the installation of raised medians to prevent vehicles from driving around closed automatic gates at a cost of approximately $10,000 for a 80% reduction in violations (USDOT, 2007)

2) prohibition of turning movements toward the highway-rail crossing during the preemption sequence at the signalized intersection by the use of a red left or right arrow display or an extinguishable blank-out sign as shown below:

3) improved signage and pavement markings at the intersection and crossing, such as "DO NOT STOP ON TRACKS" signs, pavement markings between the intersection of Golden State Boulevard and the railroad crossing, and dynamic envelope markings on either side of the crossing as a solid white line, as shown below:



Improvements at Carnegie Avenue Crossing

The Carnegie Avenue/Golden State Boulevard intersection currently is unsignalized and according to the peak hour signal warrant analysis conducted by DKS (2008), future signalization of this intersection is not warranted. However, traffic queues are expected to extend across the track under current and future conditions. Therefore, the following improvements to the crossing and intersection should be considered:

- Improved signage and pavement markings at the intersection and crossing (current markings are faded and are not clearly visible)
- Installation of "DO NOT STOP ON TRACKS" signs at crossing
- Installation of an automated queue cutter flashing-light beacon
- Installation of a traffic signal with railroad preemption (this option needs to be considered very carefully considering the harmful effects of an otherwise unwarranted traffic signal).

Any improvements to the traffic signals, lane configuration, signage or markings should be considered in consultation with the City of Fresno, UP Railroad Company, and CPUC and in accordance with the following references:

- "Preemption of Traffic Signals at or near Railroad Grade Crossings with Active Warning Devices – A Recommended Practice", Institute of Transportation Engineers (ITE), Committee TENC-4M-35, 1997
- "Traffic Signal Operations Near Highway-Rail Grade Crossings", NCHRP 271, Synthesis 271, Transportation Research Board (TRB). 1996.
- Guidance on Traffic Control Devices at Highway-Rail Grade Crossings, USDOT Technical Working Group (TWG) for Highway Rail Grade Crossings, November 2002.

6. References

1. Association of American Railroads (AAR), 2005. *Railroad Service in California*. December 2005.

2. Barkan, Christopher P., C. Tyler Dick, and Robert Anderson, 2003. Analysis of *Railroad Derailment Factors Affecting Hazardous Materials.* Transportation Risk. Transportation Research Record Paper No. 03-4429.

3. California Public Utilities Commission (CPUC). 1999. *Annual Report of Railroad Accidents Occurring in California.* Rail Safety and Carriers Division.

4. CPUC. 2008. Letter dated January 30, 2008 from Mr. Kevin Boles, Environmental Specialist, Rail Crossings Engineering Section to Mr. Mike Sanchez, City of Fresno.

5. DKS Associates. 2008. *Administrative Draft, Traffic Impact Study, Fresno El Paseo Project. Volume 1.* Dated April 14, 2008.

6. Federal Railroad Administration (FRA). 2001. *Railroad Safety Statistics – Annual Report 2000*. US Department of Transportation, FRA, July 2001

7. FRA. 2008. Office of Safety, Operational Data 2000-2006. Can be accessed at the FRA website: http:/safetydata.fra.dot.gov/officeofsafety/Query.

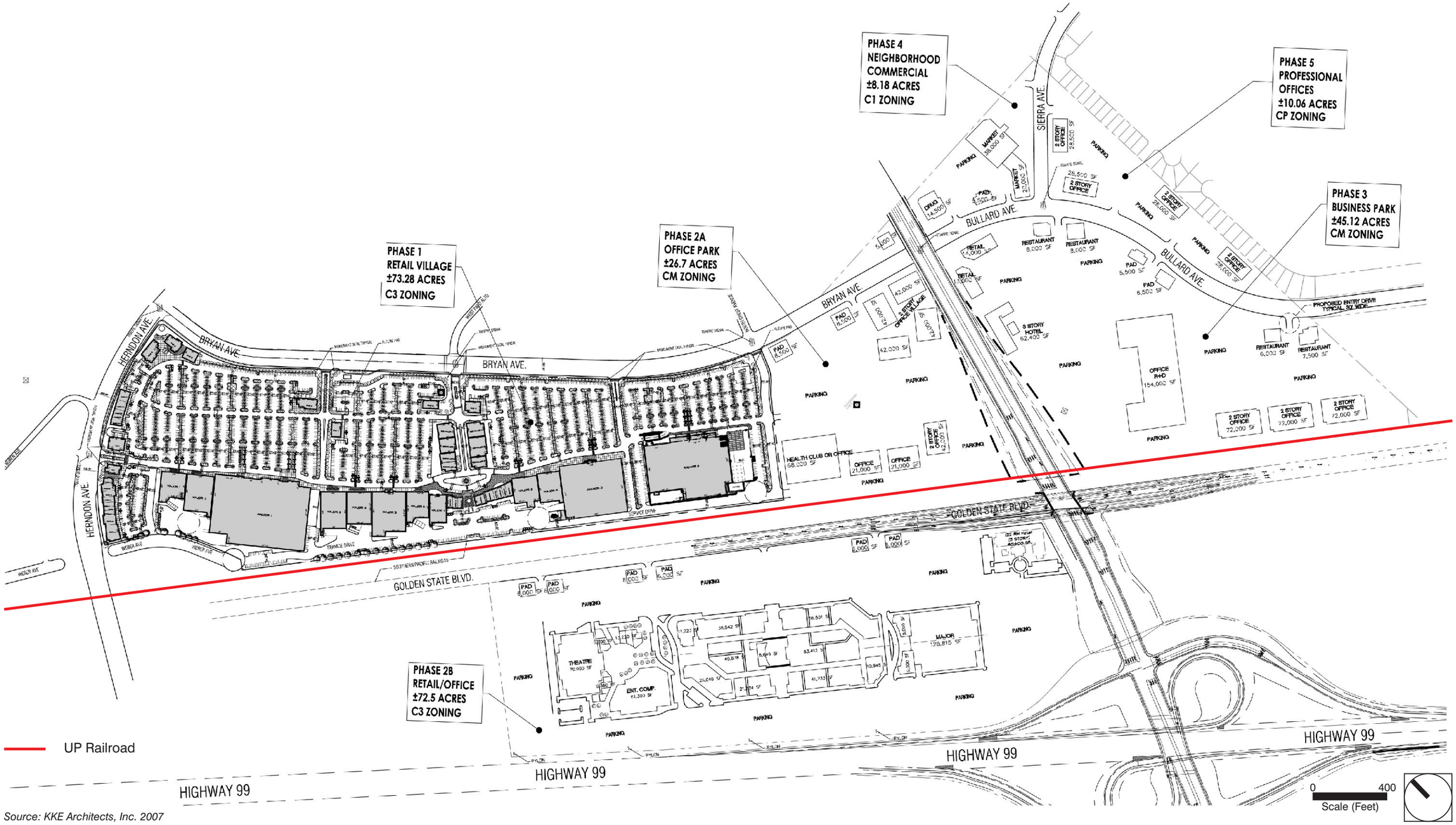
8. FRA. 2008. *GradeDec.Net System for Highway-Rail Grade Crossing Investment Analysis.* Web-based computer program that can be accessed at http://gradedec.fra.dot.gov.

9. Tioga Group, Inc., Railroad Industries, Inc., and Cambridge Systematics, Inc. 2006. *California Inter-Regional Intermodal System (CIRIS).* Prepared for San Joaquin Council of Governments. June 11, 2006.

10. San Joaquin Council of Government. 2008. *San Joaquin Valley Regional Goods Movement Action Plan 2008.* 34 pp.

11. United States Department of Transportation (USDOT). 2007. *Railroad-Highway Grade Crossing Handbook.* Prepared by USDOT and Federal Highway Adminstration. Revised Second Edition, August 2007.

Site and Railroad Location Map



Source: KKE Architects, Inc. 2007

Appendix A.
Photographic Essay

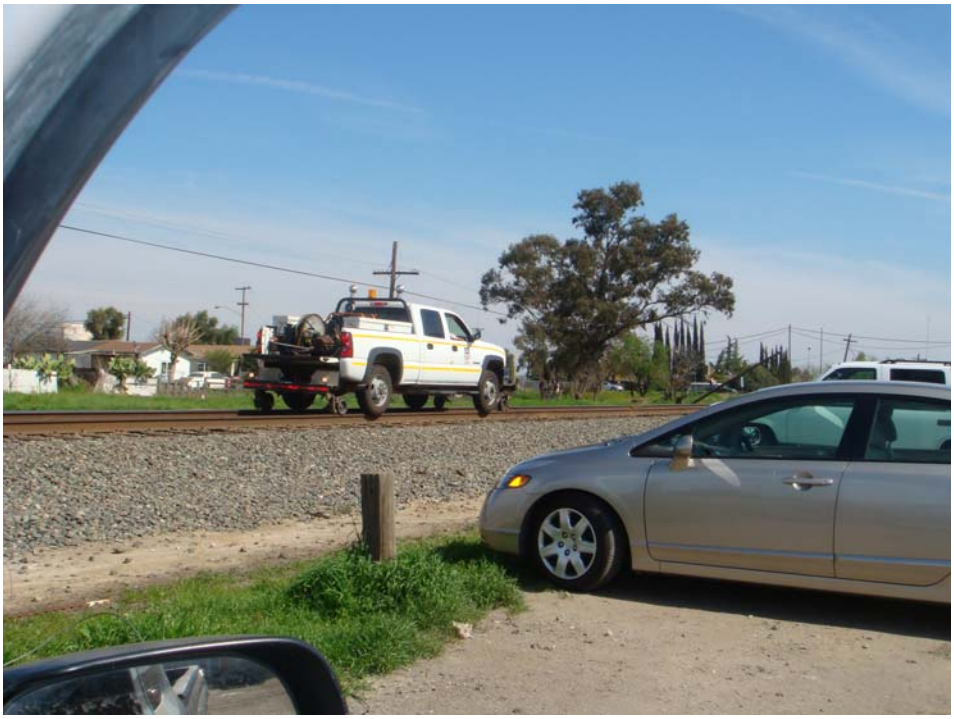
1.0 Closeup of the UP main line track near the Herndon Avenue crossing. Note that there are no fences or barriers separating the UP railroad right-of-way from the neighboring properties.

2.0 View of the Herndon Avenue highway-rail crossing. Note the gate with mast-mounted flashing lights and crossbuck on the right side of the photograph.

3.0 View looking to the south of the rail line just south of the Carnegie Avenue crossing. Note that the main track splits and an additional siding track is present at this location.

4.0 View to the west of the North Carnegie (Bullard) Avenue crossing with gates, mast-mounted flashing lights, and crossbucks. The street that is perpendicular to North Carnegie Avenue just past the crossing gates is Golden State Boulevard.

5.0 View looking to the south showing some of the downed power pole lines along the east side of the track. Trespass activities with high speed truck racing within the railroad right-of-way may have contributed to the condition of the power lines. The Herndon Avenue crossing can be seen in the background.



6.0 Photograph of the UP rail maintenance truck traversing the track.

Appendix B.
Highway-Rail Crossings Data

U.S. DOT - CROSSING INVENTORY INFORMATION
AS OF 3/11/2008

Crossing No.: 757312B Update Reason: Changed Crossing Effective Begin-Date of Record: 03/28/88

Railroad: UP Union Pacific RR Co. [UP] Current Record

Initiating Agency Railroad Type and Positiion: Public At Grade

Part I Location and Classification of Crossing

Division:	SAN JOAQUIN	State:	CA
Subdivision:	STOCKTON	County:	FRESNO
Branch or Line Name:	VALLEY ROUTE	City: Near	FRESNO
Railroad Milepost:	0195.75	Street or Road Name:	HERNDON AV.
RailRoad I.D. No.:	B-195.8	Highway Type & No.:	FAS1330
Nearest RR Timetable Stn:	BIOLA JCT	HSR Corridor ID:	
Parent Railroad:		County Map Ref. No.:	9A1
Crossing Owner:		Latitude:	36.8344251
ENS Sign Installed:		Longitude:	-119.9154950
Passenger Service:		Lat/Long Source:	Actual
Avg Passenger Train Count:	0	Quiet Zone:	No
Adjacent Crossing with Separate Number:			

Private Crossing Information:

Category: Public Access:

Specify Signs: Specify Signals:

	ST/RR A	ST/RR B	ST/RR C	ST/RR D
Railroad Use:				
State Use:				

Narrative:

Emergency Contact: (800)848-8715 Railroad Contact: State Contact:

Part II Railroad Information

Number of Daily Train Movements: Less Than One Movement Per Day: No

Total Trains: 19 Total Switching: 4 Day Thru: 8

Typical Speed Range Over Crossing: From 60 to 70 mph Maximum Time Table Speed: 70

Type and Number of Tracks: Main: 1 Other 0 Specify:

Does Another RR Operate a Separate Track at Crossing? No

Does Another RR Operate Over Your Track at Crossing? No

U.S. DOT - CROSSING INVENTORY INFORMATION
Continued

Crossing 757312B

Effective Begin-Date of Record: 03/28/88

Current Record

Part III: Traffic Control Device Information

Signs:

Crossbucks:	0	Highway Stop Signs:	0
Advanced Warning:	Yes	Hump Crossing Sign:	
Pavement Markings:	Stop Lines and RR Xing Symbols	Other Signs:	0 Specify: 0

Train Activated Devices:

Gates:	2	4 Quad or Full Barrier:	
Mast Mounted FL:	2	Total Number FL Pairs:	0
Cantilevered FL (Over):	0	Cantilevered FL (Not over):	0
Other Flashing Lights:	0	Specify Other Flashing Lights:	
Highway Traffic Signals:	0	Wigwags: 0	Bells: 2
Other Train Activated Warning Devices:		Special Warning Devices Not Train Activated:	
Channelization:		Type of Train Detection:	Constant Warning Time
Track Equipped with Train Signals?	Yes	Traffic Light Interconnection/Preemption:	Simultaneous Preemption

Part IV: Physical Characteristics

Type of Development:	Open Space	Smallest Crossing Angle:	60 to 90 Degrees
Number of Traffic Lanes Crossing Railroad:	4	Are Truck Pullout Lanes Present?	No
Is Highway Paved?	Yes		
Crossing Surface:	Timber	If Other:	
Nearby Intersecting Highway?	N/A	Is it Signalized?	
Does Track Run Down a Street?	No	Is Crossing Illuminated?	
Is Commercial Power Available?	Yes		

Part V: Highway Information

Highway System:	Other FA Highway - Not NHS	Functional Classification of Road at Crossing:	Rural Minor Arterial
Is Crossing on State Highway System:	No		
Annual Average Daily Traffic (AADT):	014100	AADT Year:	1988
Estimated Percent Trucks:	15	Avg. No of School Buses per Day:	0
Posted Highway Speed:	0		

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

HIGHWAY-RAIL GRADE CROSSING ACCIDENT/INCIDENT REPORT

OMB Approval No. 2130-0500

Name Of	Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad **UP**	1a. **UP**	1b. **1205RS003**
2. Other Railroad Involved in Train Accident/Incident	2a.	2b.
3. Railroad Responsible for Track Maintenance **UP**	3a. **UP**	3b. **1205RS003**

4. U.S. DOT-AAR Grade Crossing ID No.	5. Date of Accident/Incident	6. Time of Accident/Incident
757312B	**12/02/05**	**07:42 PM**

7. Nearest Railroad Station	8. Division	9. County	10. State Abbr.	Code
BIO JUNCTION	**ROSEVILLE**	**FRESNO**	**06**	**CA**

11. City *(if in a city)*

12. Highway Name or No. **HERNDON AVENUE** ☑ Public ☐ Private

Highway User Involved

13. Type — A. Auto, B. Truck, C. Truck-trailer, D. Pick-up truck, E. Van, F. Bus, G. School Bus, H. Motorcycle, J. Other Motor Vehicle, K. Pedestrian, M. Other *(specify)* — Code: **A**

14. Vehicle Speed *(est. mph at impact)*

15. Direction *(geographical)* 1. North 2. South 3. East 4. West — Code: **4**

16. Position 1. Stalled on crossing 2. Stopped on Crossing 3. Moving over crossing 4. Trapped — Code: **4**

20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code: **4**

Rail Equipment Involved

17. Equipment — 1. Train *(units pulling)* 2. Train *(units pushing)* 3. Train *(standing)* 4. Car(s) *(moving)* 5. Car(s) *(standing)* 6. Light loco(s) *(moving)* 7. Light loco(s) *(standing)* 8. Other *(specify)* A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL — Code: **1**

18. Position of Car Unit in Train: **1**

19. Circumstance 1. Rail equipment struck highway user 2. Rail equipment struck by highway user — Code: **1**

20b. Was there a hazardous materials release by 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code: **4**

20c. State the name and quantity of the hazardous materials released, if any

21. Temperature *(specify if minus)* **55 °F**

22. Visibility *(single entry)* 1. Dawn 2. Day 3. Dusk 4. Dark — Code: **2**

23. Weather *(single entry)* 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow — Code: **3**

24. Type of Equipment Consist *(single entry)* 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/Switching 8. Light loco(s) 9. Main./inspect. car A. Spec. MoW Equip. — Code: **1**

25. Track Type Used by Rail Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry — Code: **1**

26. Track Number or Name: **SINGLE MAIN**

27. FRA Track Class (1-9,X): **4**

28. Number of Locomotive Units: **4**

29. Number of Cars: **23**

30. Consist Speed *(Recorded if available)* R. Recorded E. Estimated **52** mph — Code: **E**

31. Time Table Direction 1. North 2. South 3. East 4. West — Code: **2**

32. Type of Crossing Warning 1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig wags 5. Hwy. traffic signals 6. Audible 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other *(specify)* 12. None

Code(s): **01** **03** **06** **07**

33. Signaled Crossing Warning: **20 sec warn min**

34. Whistle Ban 1. Yes 2. No 3. Unknown — Code: **2**

35. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach — Code: **1**

36. Crossing Warning Interconnected with Highway Signals 1. Yes 2. No 3. Unknown — Code: **3**

37. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown — Code: **3**

38. Driver's Age: **35**

39. Driver's Gender 1. Male 2. Female — Code: **2**

40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown — Code: **2**

41. Driver 1. Drove around or thru the gate 2. Stopped and then proceeded 3. Did not stop 4. Stopped on crossing 5. Other *(specify)* — Code: **5**

42. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown — Code: **2**

43. View of Track Obscured by *(primary obstruction)* 1. Permanent Structure 2. Standing railroad equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicles 7. Other *(specify)* 8. Not Obstructed — Code: **8**

Casualties to:	Killed	Injured
46. Highway-Rail Crossing Users		
49. Railroad Employees		
52. Passengers on Train		

44. Driver was 1. Killed 2. Injured 3. Uninjured — Code: **3**

45. Was Driver in the Vehicle? 1. Yes 2. No — Code: **2**

47. Highway Vehicle Property Damage *(est. dollar damage)* **$1,000**

48. Total Number of Highway-Rail Crossing Users *(include driver)*

50. Total Number of People on Train *(include passengers and crew)* **2**

51. Is a Rail Equipment Accident / Incident Report Being Filed 1. Yes 2. No — Code: **2**

53a. Special Study Block

53b. Special Study Block

54. Narrative Description

BOX 41. TRAPPED ON CROSSING

55. Typed Name and Title	56. Signature	57. Date

FORM FRA F 6180.57

* NOTE THAT ALL CASUALTIES MUST BE REPORTED ON FORM FRA F 6180.55A

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

HIGHWAY-RAIL GRADE CROSSING ACCIDENT/INCIDENT REPORT

OMB Approval No. 2130-0500

Name Of	Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad: SP	1a. SP	1b. 20118
2. Other Railroad Involved in Train Accident/Incident	2a.	2b.
3. Railroad Responsible for Track Maintenance: SP	3a. SP	3b. 20118

4. U.S. DOT-AAR Grade Crossing ID No.	5. Date of Accident/Incident	6. Time of Accident/Incident
757312B	11/17/78	08:45 AM

7. Nearest Railroad Station	8. Division	9. County	10. State Abbr.	Code
BIOLA		MADERA	06	CA

11. City *(if in a city)*: HERNDON
12. Highway Name or No.: HERNDON AVENUE — ☑ Public ☐ Private

Highway User Involved

13. Type — A. Auto, B. Truck, C. Truck-trailer, D. Pick-up truck, E. Van, F. Bus, G. School Bus, H. Motorcycle, J. Other Motor Vehicle, K. Pedestrian, M. Other *(specify)* — Code: B

14. Vehicle Speed *(est. mph at impact)*: 0

15. Direction *(geographical)* — 1. North 2. South 3. East 4. West — Code: 4

16. Position — 1. Stalled on crossing 2. Stopped on Crossing 3. Moving over crossing 4. Trapped — Code: 1

20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? — 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code: 4

Rail Equipment Involved

17. Equipment — 1. Train *(units pulling)* 2. Train *(units pushing)* 3. Train *(standing)* 4. Car(s) *(moving)* 5. Car(s) *(standing)* 6. Light loco(s) *(moving)* 7. Light loco(s) *(standing)* 8. Other *(specify)* A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL — Code: 1

18. Position of Car Unit in Train: 1

19. Circumstance — 1. Rail equipment struck highway user 2. Rail equipment struck by highway user — Code: 1

20b. Was there a hazardous materials release by — 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code:

20c. State the name and quantity of the hazardous materials released, if any

21. Temperature *(specify if minus)*: 55 °F

22. Visibility *(single entry)* — 1. Dawn 2. Day 3. Dusk 4. Dark — Code: 2

23. Weather *(single entry)* — 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow — Code: 1

24. Type of Equipment Consist *(single entry)* — 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/Switching 8. Light loco(s) 9. Main./inspect. car A. Spec. MoW Equip. — Code: 1

25. Track Type Used by Rail Equipment Involved — 1. Main 2. Yard 3. Siding 4. Industry — Code: 1

26. Track Number or Name: MAIN

27. FRA Track Class (1-9,X): 5

28. Number of Locomotive Units: 2

29. Number of Cars: 89

30. Consist Speed *(Recorded if available)* — R. Recorded E. Estimated: 35 mph — Code: E

31. Time Table Direction — 1. North 2. South 3. East 4. West — Code: 4

32. Type of Crossing Warning — 1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig wags 5. Hwy. traffic signals 6. Audible 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other *(specify)* 12. None

Code(s): 01 07

33. Signaled Crossing Warning: 20 sec warn min

34. Whistle Ban — 1. Yes 2. No 3. Unknown — Code:

35. Location of Warning — 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach — Code: 1

36. Crossing Warning Interconnected with Highway Signals — 1. Yes 2. No 3. Unknown — Code: 2

37. Crossing Illuminated by Street Lights or Special Lights — 1. Yes 2. No 3. Unknown — Code: 2

38. Driver's Age

39. Driver's Gender — 1. Male 2. Female — Code:

40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train — 1. Yes 2. No 3. Unknown — Code: 2

41. Driver — 1. Drove around or thru the gate 2. Stopped and then proceeded 3. Did not stop 4. Stopped on crossing 5. Other *(specify)* — Code: 5

42. Driver Passed Standing Highway Vehicle — 1. Yes 2. No 3. Unknown — Code: 2

43. View of Track Obscured by *(primary obstruction)* — 1. Permanent Structure 2. Standing railroad equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicles 7. Other *(specify)* 8. Not Obstructed — Code: 8

Casualties to:	Killed	Injured
46. Highway-Rail Crossing Users	0	0
49. Railroad Employees	0	0
52. Passengers on Train	0	0

44. Driver was — 1. Killed 2. Injured 3. Uninjured — Code: 3

45. Was Driver in the Vehicle? — 1. Yes 2. No — Code: 2

47. Highway Vehicle Property Damage *(est. dollar damage)*: $500

48. Total Number of Highway-Rail Crossing Users *(include driver)*: 0

50. Total Number of People on Train *(include passengers and crew)*:

51. Is a Rail Equipment Accident / Incident Report Being Filed — 1. Yes 2. No — Code: 2

53a. Special Study Block

53b. Special Study Block

54. Narrative Description

55. Typed Name and Title

56. Signature

57. Date

FORM FRA F 6180.57

* NOTE THAT ALL CASUALTIES MUST BE REPORTED ON FORM FRA F 6180.55A

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

HIGHWAY-RAIL GRADE CROSSING ACCIDENT/INCIDENT REPORT

OMB Approval No. 2130-0500

Name Of	Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad SP	1a. SP	1b. E8404
2. Other Railroad Involved in Train Accident/Incident	2a.	2b.
3. Railroad Responsible for Track Maintenance SP	3a. SP	3b. E8404

4. U.S. DOT-AAR Grade Crossing ID No.	5. Date of Accident/Incident	6. Time of Accident/Incident
757312B	11/09/84	02:00 AM

7. Nearest Railroad Station	8. Division	9. County	10. State Abbr.	Code
HERNDON		FRESNO	06	CA

11. City *(if in a city)* FRESNO | 12. Highway Name or No. GOBLE ST | ☑ Public ☐ Private

Highway User Involved

13. Type — A. Auto, B. Truck, C. Truck-trailer, D. Pick-up truck, E. Van, F. Bus, G. School Bus, H. Motorcycle, J. Other Motor Vehicle, K. Pedestrian, M. Other *(specify)* — Code: B

14. Vehicle Speed *(est. mph at impact)*: 2

15. Direction *(geographical)* 1. North 2. South 3. East 4. West — Code: 4

16. Position 1. Stalled on crossing 2. Stopped on Crossing 3. Moving over crossing 4. Trapped — Code: 3

20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code: 4

Rail Equipment Involved

17. Equipment — 1. Train *(units pulling)* 2. Train *(units pushing)* 3. Train *(standing)* 4. Car(s) *(moving)* 5. Car(s) *(standing)* 6. Light loco(s) *(moving)* 7. Light loco(s) *(standing)* 8. Other *(specify)* A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL — Code: 1

18. Position of Car Unit in Train: 1

19. Circumstance 1. Rail equipment struck highway user 2. Rail equipment struck by highway user — Code: 2

20b. Was there a hazardous materials release by 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code:

20c. State the name and quantity of the hazardous materials released, if any

21. Temperature *(specify if minus)*: 60 °F

22. Visibility *(single entry)* 1. Dawn 2. Day 3. Dusk 4. Dark — Code: 4

23. Weather *(single entry)* 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow — Code: 2

24. Type of Equipment Consist *(single entry)* 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/Switching 8. Light loco(s) 9. Main./inspect. car A. Spec. MoW Equip. — Code: 1

25. Track Type Used by Rail Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry — Code: 1

26. Track Number or Name: MAIN TRACK

27. FRA Track Class (1-9,X): 3

28. Number of Locomotive Units: 5

29. Number of Cars: 121

30. Consist Speed *(Recorded if available)* R. Recorded E. Estimated 40 mph — Code: E

31. Time Table Direction 1. North 2. South 3. East 4. West — Code: 4

32. Type of Crossing Warning 1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig wags 5. Hwy. traffic signals 6. Audible 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other *(specify)* 12. None

Code(s): 01

33. Signaled Crossing Warning: 20 sec warn min

34. Whistle Ban 1. Yes 2. No 3. Unknown — Code:

35. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach — Code: 1

36. Crossing Warning Interconnected with Highway Signals 1. Yes 2. No 3. Unknown — Code: 2

37. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown — Code: 1

38. Driver's Age

39. Driver's Gender 1. Male 2. Female — Code:

40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown — Code: 2

41. Driver 1. Drove around or thru the gate 2. Stopped and then proceeded 3. Did not stop 4. Stopped on crossing 5. Other *(specify)* — Code: 3

42. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown — Code: 1

43. View of Track Obscured by *(primary obstruction)* 1. Permanent Structure 2. Standing railroad equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicles 7. Other *(specify)* 8. Not Obstructed — Code: 8

Casualties to:	Killed	Injured
46. Highway-Rail Crossing Users	0	0
49. Railroad Employees	0	0
52. Passengers on Train	0	0

44. Driver was 1. Killed 2. Injured 3. Uninjured — Code: 3

45. Was Driver in the Vehicle? 1. Yes 2. No — Code: 1

47. Highway Vehicle Property Damage *(est. dollar damage)*: $5,000

48. Total Number of Highway-Rail Crossing Users *(include driver)*: 1

50. Total Number of People on Train *(include passengers and crew)*:

51. Is a Rail Equipment Accident / Incident Report Being Filed 1. Yes 2. No — Code: 2

53a. Special Study Block | 53b. Special Study Block

54. Narrative Description

55. Typed Name and Title | 56. Signature | 57. Date

FORM FRA F 6180.57 * NOTE THAT ALL CASUALTIES MUST BE REPORTED ON FORM FRA F 6180.55A

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

HIGHWAY-RAIL GRADE CROSSING ACCIDENT/INCIDENT REPORT

OMB Approval No. 2130-0500

Name Of	Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad SP	1a. SP	1b. E2735
2. Other Railroad Involved in Train Accident/Incident	2a.	2b.
3. Railroad Responsible for Track Maintenance SP	3a. SP	3b. E2735

4. U.S. DOT-AAR Grade Crossing ID No.	5. Date of Accident/Incident	6. Time of Accident/Incident
757312B	05/23/85	02:45 PM

7. Nearest Railroad Station	8. Division	9. County	10. State Abbr.	Code
FRESNO		FRESNO	06	CA

11. City *(if in a city)* HERNDON | 12. Highway Name or No. GOBLE ST | ☑ Public ☐ Private

Highway User Involved

13. Type — A. Auto, B. Truck, C. Truck-trailer, D. Pick-up truck, E. Van, F. Bus, G. School Bus, H. Motorcycle, J. Other Motor Vehicle, K. Pedestrian, M. Other *(specify)* — Code: A

14. Vehicle Speed *(est. mph at impact)*: 0

15. Direction *(geographical)* 1. North 2. South 3. East 4. West — Code: 4

16. Position 1. Stalled on crossing 2. Stopped on Crossing 3. Moving over crossing 4. Trapped — Code: 2

20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code: 4

Rail Equipment Involved

17. Equipment — 1. Train *(units pulling)* 2. Train *(units pushing)* 3. Train *(standing)* 4. Car(s) *(moving)* 5. Car(s) *(standing)* 6. Light loco(s) *(moving)* 7. Light loco(s) *(standing)* 8. Other *(specify)* A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL — Code: 1

18. Position of Car Unit in Train: 1

19. Circumstance 1. Rail equipment struck highway user 2. Rail equipment struck by highway user — Code: 1

20b. Was there a hazardous materials release by 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code:

20c. State the name and quantity of the hazardous materials released, if any

21. Temperature *(specify if minus)*: 80 °F

22. Visibility *(single entry)* 1. Dawn 2. Day 3. Dusk 4. Dark — Code: 2

23. Weather *(single entry)* 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow — Code: 1

24. Type of Equipment Consist *(single entry)* 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/Switching 8. Light loco(s) 9. Main./inspect. car A. Spec. MoW Equip. — Code: 1

25. Track Type Used by Rail Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry — Code: 1

26. Track Number or Name: MAIN

27. FRA Track Class (1-9,X): 4

28. Number of Locomotive Units: 3

29. Number of Cars: 127

30. Consist Speed *(Recorded if available)* R. Recorded E. Estimated: 37 mph — Code: E

31. Time Table Direction 1. North 2. South 3. East 4. West — Code: 4

32. Type of Crossing Warning 1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig wags 5. Hwy. traffic signals 6. Audible 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other *(specify)* 12. None — Code(s): 01

33. Signaled Crossing Warning: 20 sec warn min

34. Whistle Ban 1. Yes 2. No 3. Unknown — Code:

35. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach — Code: 1

36. Crossing Warning Interconnected with Highway Signals 1. Yes 2. No 3. Unknown — Code: 1

37. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown — Code: 1

38. Driver's Age

39. Driver's Gender 1. Male 2. Female — Code:

40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown — Code: 2

41. Driver 1. Drove around or thru the gate 2. Stopped and then proceeded 3. Did not stop 4. Stopped on crossing 5. Other *(specify)* — Code: 1

42. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown — Code: 2

43. View of Track Obscured by *(primary obstruction)* 1. Permanent Structure 2. Standing railroad equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicles 7. Other *(specify)* 8. Not Obstructed — Code: 8

Casualties to:	Killed	Injured
46. Highway-Rail Crossing Users	0	0
49. Railroad Employees	0	0
52. Passengers on Train	0	0

44. Driver was 1. Killed 2. Injured 3. Uninjured — Code: 3

45. Was Driver in the Vehicle? 1. Yes 2. No — Code: 1

47. Highway Vehicle Property Damage *(est. dollar damage)*: $5,000

48. Total Number of Highway-Rail Crossing Users *(include driver)*: 2

50. Total Number of People on Train *(include passengers and crew)*:

51. Is a Rail Equipment Accident / Incident Report Being Filed 1. Yes 2. No — Code: 2

53a. Special Study Block | 53b. Special Study Block

54. Narrative Description

55. Typed Name and Title | 56. Signature | 57. Date

FORM FRA F 6180.57 * NOTE THAT ALL CASUALTIES MUST BE REPORTED ON FORM FRA F 6180.55A

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

HIGHWAY-RAIL GRADE CROSSING ACCIDENT/INCIDENT REPORT

OMB Approval No. 2130-0500

Name Of	Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad SP	1a. SP	1b. A0608
2. Other Railroad Involved in Train Accident/Incident	2a.	2b.
3. Railroad Responsible for Track Maintenance SP	3a. SP	3b. A0608

4. U.S. DOT-AAR Grade Crossing ID No.	5. Date of Accident/Incident	6. Time of Accident/Incident
757312B	02/12/88	12:50 PM

7. Nearest Railroad Station	8. Division	9. County	10. State Abbr.	Code
HUNDON		FRESNO	06	CA

11. City *(if in a city)* HUNDON | 12. Highway Name or No. GOBLE ST | ☑ Public ☐ Private

Highway User Involved

13. Type — A. Auto, B. Truck, C. Truck-trailer, D. Pick-up truck, E. Van, F. Bus, G. School Bus, H. Motorcycle, J. Other Motor Vehicle, K. Pedestrian, M. Other *(specify)* — Code: C

14. Vehicle Speed *(est. mph at impact)*: 0

15. Direction *(geographical)* 1. North 2. South 3. East 4. West — Code: 1

16. Position 1. Stalled on crossing 2. Stopped on Crossing 3. Moving over crossing 4. Trapped — Code: 1

20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code: 4

Rail Equipment Involved

17. Equipment — 1. Train *(units pulling)* 2. Train *(units pushing)* 3. Train *(standing)* 4. Car(s) *(moving)* 5. Car(s) *(standing)* 6. Light loco(s) *(moving)* 7. Light loco(s) *(standing)* 8. Other *(specify)* A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL — Code: 1

18. Position of Car Unit in Train: 1

19. Circumstance 1. Rail equipment struck highway user 2. Rail equipment struck by highway user — Code: 1

20b. Was there a hazardous materials release by 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code:

20c. State the name and quantity of the hazardous materials released, if any

21. Temperature *(specify if minus)*: 65 °F

22. Visibility *(single entry)* 1. Dawn 2. Day 3. Dusk 4. Dark — Code: 2

23. Weather *(single entry)* 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow — Code: 1

24. Type of Equipment Consist *(single entry)* 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/Switching 8. Light loco(s) 9. Main./inspect. car A. Spec. MoW Equip. — Code: 1

25. Track Type Used by Rail Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry — Code: 1

26. Track Number or Name: MAIN

27. FRA Track Class (1-9,X): 5

28. Number of Locomotive Units: 3

29. Number of Cars: 61

30. Consist Speed *(Recorded if available)* R. Recorded E. Estimated 45 mph — Code: E

31. Time Table Direction 1. North 2. South 3. East 4. West — Code: 3

32. Type of Crossing Warning 1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig wags 5. Hwy. traffic signals 6. Audible 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other *(specify)* 12. None

Code(s): 01 07

33. Signaled Crossing Warning: 20 sec warn min

34. Whistle Ban 1. Yes 2. No 3. Unknown — Code:

35. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach — Code: 1

36. Crossing Warning Interconnected with Highway Signals 1. Yes 2. No 3. Unknown — Code: 2

37. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown — Code: 2

38. Driver's Age

39. Driver's Gender 1. Male 2. Female — Code:

40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown — Code: 2

41. Driver 1. Drove around or thru the gate 2. Stopped and then proceeded 3. Did not stop 4. Stopped on crossing 5. Other *(specify)* — Code: 4

42. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown — Code: 2

43. View of Track Obscured by *(primary obstruction)* 1. Permanent Structure 2. Standing railroad equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicles 7. Other *(specify)* 8. Not Obstructed — Code: 8

Casualties to:	Killed	Injured
46. Highway-Rail Crossing Users	0	0
49. Railroad Employees	0	0
52. Passengers on Train	0	0

44. Driver was 1. Killed 2. Injured 3. Uninjured — Code: 3

45. Was Driver in the Vehicle? 1. Yes 2. No — Code: 1

47. Highway Vehicle Property Damage *(est. dollar damage)*: $10,000

48. Total Number of Highway-Rail Crossing Users *(include driver)*: 1

50. Total Number of People on Train *(include passengers and crew)*:

51. Is a Rail Equipment Accident / Incident Report Being Filed 1. Yes 2. No — Code: 1

53a. Special Study Block | 53b. Special Study Block

54. Narrative Description

55. Typed Name and Title | 56. Signature | 57. Date

FORM FRA F 6180.57 * NOTE THAT ALL CASUALTIES MUST BE REPORTED ON FORM FRA F 6180.55A

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

HIGHWAY-RAIL GRADE CROSSING ACCIDENT/INCIDENT REPORT

OMB Approval No. 2130-0500

Name Of	Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad SP	1a. SP	1b. K0413
2. Other Railroad Involved in Train Accident/Incident	2a.	2b.
3. Railroad Responsible for Track Maintenance SP	3a. SP	3b. K0413

4. U.S. DOT-AAR Grade Crossing ID No.	5. Date of Accident/Incident	6. Time of Accident/Incident
757312B	06/09/93	08:25 AM

7. Nearest Railroad Station	8. Division	9. County	10. State Abbr.	Code
FRESNO		FRESNO	06	CA

11. City *(if in a city)* FRESNO | 12. Highway Name or No. HERNDON | ☑ Public ☐ Private

Highway User Involved

13. Type — A. Auto, B. Truck, C. Truck-trailer, D. Pick-up truck, E. Van, F. Bus, G. School Bus, H. Motorcycle, J. Other Motor Vehicle, K. Pedestrian, M. Other *(specify)* — Code: A

14. Vehicle Speed *(est. mph at impact)*: 10

15. Direction *(geographical)* 1. North 2. South 3. East 4. West — Code: 4

16. Position 1. Stalled on crossing 2. Stopped on Crossing 3. Moving over crossing 4. Trapped — Code: 3

20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code: 4

Rail Equipment Involved

17. Equipment — 1. Train *(units pulling)* 2. Train *(units pushing)* 3. Train *(standing)* 4. Car(s) *(moving)* 5. Car(s) *(standing)* 6. Light loco(s) *(moving)* 7. Light loco(s) *(standing)* 8. Other *(specify)* A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL — Code: 1

18. Position of Car Unit in Train: 1

19. Circumstance 1. Rail equipment struck highway user 2. Rail equipment struck by highway user — Code: 2

20b. Was there a hazardous materials release by 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code:

20c. State the name and quantity of the hazardous materials released, if any

21. Temperature *(specify if minus)*: 70 °F

22. Visibility *(single entry)* 1. Dawn 2. Day 3. Dusk 4. Dark — Code: 2

23. Weather *(single entry)* 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow — Code: 1

24. Type of Equipment Consist *(single entry)* 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/Switching 8. Light loco(s) 9. Main./inspect. car A. Spec. MoW Equip. — Code: 1

25. Track Type Used by Rail Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry — Code: 1

26. Track Number or Name: MAIN

27. FRA Track Class (1-9,X): 4

28. Number of Locomotive Units: 2

29. Number of Cars: 10

30. Consist Speed *(Recorded if available)* R. Recorded E. Estimated: 59 mph — Code: E

31. Time Table Direction 1. North 2. South 3. East 4. West — Code: 3

32. Type of Crossing Warning 1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig wags 5. Hwy. traffic signals 6. Audible 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other *(specify)* 12. None — Code(s): 01

33. Signaled Crossing Warning: 20 sec warn min

34. Whistle Ban 1. Yes 2. No 3. Unknown — Code:

35. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach — Code: 1

36. Crossing Warning Interconnected with Highway Signals 1. Yes 2. No 3. Unknown — Code: 3

37. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown — Code: 2

38. Driver's Age

39. Driver's Gender 1. Male 2. Female — Code:

40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown — Code: 2

41. Driver 1. Drove around or thru the gate 2. Stopped and then proceeded 3. Did not stop 4. Stopped on crossing 5. Other *(specify)* — Code: 1

42. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown — Code: 2

43. View of Track Obscured by *(primary obstruction)* 1. Permanent Structure 2. Standing railroad equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicles 7. Other *(specify)* 8. Not Obstructed — Code: 8

Casualties to:	Killed	Injured
46. Highway-Rail Crossing Users	0	1
49. Railroad Employees	0	0
52. Passengers on Train	0	0

44. Driver was 1. Killed 2. Injured 3. Uninjured — Code: 2

45. Was Driver in the Vehicle? 1. Yes 2. No — Code: 1

47. Highway Vehicle Property Damage *(est. dollar damage)*: $1,000

48. Total Number of Highway-Rail Crossing Users *(include driver)*: 1

50. Total Number of People on Train *(include passengers and crew)*:

51. Is a Rail Equipment Accident / Incident Report Being Filed 1. Yes 2. No — Code: 2

53a. Special Study Block | 53b. Special Study Block

54. Narrative Description

55. Typed Name and Title | 56. Signature | 57. Date

FORM FRA F 6180.57 * NOTE THAT ALL CASUALTIES MUST BE REPORTED ON FORM FRA F 6180.55A

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

HIGHWAY-RAIL GRADE CROSSING ACCIDENT/INCIDENT REPORT

OMB Approval No. 2130-0500

Name Of	Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad: SP	1a. SP	1b. K0676
2. Other Railroad Involved in Train Accident/Incident	2a.	2b.
3. Railroad Responsible for Track Maintenance: SP	3a. SP	3b. K0676

4. U.S. DOT-AAR Grade Crossing ID No.	5. Date of Accident/Incident	6. Time of Accident/Incident
757312B	08/16/96	10:05 PM

7. Nearest Railroad Station	8. Division	9. County	10. State Abbr.	Code
BIOLA JCT		FRESNO	06	CA

11. City *(if in a city)*: BIOLA
12. Highway Name or No.: HERNDON AVENUE — ☑ Public ☐ Private

Highway User Involved

13. Type — A. Auto, B. Truck, C. Truck-trailer, D. Pick-up truck, E. Van, F. Bus, G. School Bus, H. Motorcycle, J. Other Motor Vehicle, K. Pedestrian, M. Other *(specify)* — Code: A

14. Vehicle Speed *(est. mph at impact)*: 5

15. Direction *(geographical)* — 1. North 2. South 3. East 4. West — Code: 4

16. Position — 1. Stalled on crossing 2. Stopped on Crossing 3. Moving over crossing 4. Trapped — Code: 3

20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? — 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code: 4

Rail Equipment Involved

17. Equipment — 1. Train *(units pulling)* 2. Train *(units pushing)* 3. Train *(standing)* 4. Car(s) *(moving)* 5. Car(s) *(standing)* 6. Light loco(s) *(moving)* 7. Light loco(s) *(standing)* 8. Other *(specify)* A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL — Code: 1

18. Position of Car Unit in Train: 1

19. Circumstance — 1. Rail equipment struck highway user 2. Rail equipment struck by highway user — Code: 1

20b. Was there a hazardous materials release by — 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code:

20c. State the name and quantity of the hazardous materials released, if any

21. Temperature *(specify if minus)*: 90 °F

22. Visibility *(single entry)* — 1. Dawn 2. Day 3. Dusk 4. Dark — Code: 4

23. Weather *(single entry)* — 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow — Code: 1

24. Type of Equipment Consist *(single entry)* — 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/Switching 8. Light loco(s) 9. Main./inspect. car A. Spec. MoW Equip. — Code: 1

25. Track Type Used by Rail Equipment Involved — 1. Main 2. Yard 3. Siding 4. Industry — Code: 1

26. Track Number or Name: MAIN

27. FRA Track Class (1-9,X): 4

28. Number of Locomotive Units: 4

29. Number of Cars: 46

30. Consist Speed *(Recorded if available)* — R. Recorded E. Estimated: 45 mph — Code: E

31. Time Table Direction — 1. North 2. South 3. East 4. West — Code: 2

32. Type of Crossing Warning — 1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig wags 5. Hwy. traffic signals 6. Audible 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other *(specify)* 12. None

Code(s): 01 03 07

33. Signaled Crossing Warning: 20 sec warn min

34. Whistle Ban — 1. Yes 2. No 3. Unknown — Code:

35. Location of Warning — 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach — Code: 1

36. Crossing Warning Interconnected with Highway Signals — 1. Yes 2. No 3. Unknown — Code: 1

37. Crossing Illuminated by Street Lights or Special Lights — 1. Yes 2. No 3. Unknown — Code: 1

38. Driver's Age

39. Driver's Gender — 1. Male 2. Female — Code:

40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train — 1. Yes 2. No 3. Unknown — Code: 2

41. Driver — 1. Drove around or thru the gate 2. Stopped and then proceeded 3. Did not stop 4. Stopped on crossing 5. Other *(specify)* — Code: 1

42. Driver Passed Standing Highway Vehicle — 1. Yes 2. No 3. Unknown — Code: 2

43. View of Track Obscured by *(primary obstruction)* — 1. Permanent Structure 2. Standing railroad equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicles 7. Other *(specify)* 8. Not Obstructed — Code: 8

Casualties to:	Killed	Injured
46. Highway-Rail Crossing Users	1	0
49. Railroad Employees	0	0
52. Passengers on Train	0	0

44. Driver was — 1. Killed 2. Injured 3. Uninjured — Code: 1

45. Was Driver in the Vehicle? — 1. Yes 2. No — Code: 1

47. Highway Vehicle Property Damage *(est. dollar damage)*: $5,000

48. Total Number of Highway-Rail Crossing Users *(include driver)*: 1

50. Total Number of People on Train *(include passengers and crew)*:

51. Is a Rail Equipment Accident / Incident Report Being Filed — 1. Yes 2. No — Code: 2

53a. Special Study Block

53b. Special Study Block

54. Narrative Description

55. Typed Name and Title

56. Signature

57. Date

FORM FRA F 6180.57

* NOTE THAT ALL CASUALTIES MUST BE REPORTED ON FORM FRA F 6180.55A

U.S. DOT - CROSSING INVENTORY INFORMATION
AS OF 3/11/2008

Crossing No.: 757313H Update Reason: Changed Crossing Effective Begin-Date of Record: 03/28/88

Railroad: UP Union Pacific RR Co. [UP] Current Record

Initiating Agency Railroad Type and Positiion: Public At Grade

Part I Location and Classification of Crossing

Division:	SAN JOAQUIN	State:	CA
Subdivision:	BAKERSFIELD	County:	FRESNO
Branch or Line Name:	VALLEY ROUTE	City: Near	FRESNO
Railroad Milepost:	0197.20	Street or Road Name:	BULLARD AV.
RailRoad I.D. No.:	B-197.2	Highway Type & No.:	
Nearest RR Timetable Stn:	BIOLA JCT	HSR Corridor ID:	
Parent Railroad:		County Map Ref. No.:	9A1
Crossing Owner:		Latitude:	36.8212010
ENS Sign Installed:		Longitude:	-119.8943020
Passenger Service:		Lat/Long Source:	
Avg Passenger Train Count:	0	Quiet Zone:	No
Adjacent Crossing with Separate Number:			

Private Crossing Information:

Category: Public Access:

Specify Signs: Specify Signals:

	ST/RR A	ST/RR B	ST/RR C	ST/RR D
Railroad Use:				
State Use:				

Narrative:

Emergency Contact: (800)848-8715 Railroad Contact: State Contact:

Part II Railroad Information

Number of Daily Train Movements: Less Than One Movement Per Day: No

Total Trains: 19 Total Switching: 4 Day Thru: 8

Typical Speed Range Over Crossing: From 40 to 70 mph Maximum Time Table Speed: 70

Type and Number of Tracks: Main: 1 Other 0 Specify:

Does Another RR Operate a Separate Track at Crossing? No

Does Another RR Operate Over Your Track at Crossing? No

U.S. DOT - CROSSING INVENTORY INFORMATION
Continued

Crossing 757313H

Effective Begin-Date of Record: 03/28/88

Current Record

Part III: Traffic Control Device Information

Signs:

Crossbucks:	0	Highway Stop Signs:	0
Advanced Warning:	Yes	Hump Crossing Sign:	
Pavement Markings:	Stop Lines and RR Xing Symbols	Other Signs:	0 Specify: 0

Train Activated Devices:

Gates:	2	4 Quad or Full Barrier:	
Mast Mounted FL:	2	Total Number FL Pairs:	0
Cantilevered FL (Over):	0	Cantilevered FL (Not over):	0
Other Flashing Lights:	0	Specify Other Flashing Lights:	
Highway Traffic Signals:	0	Wigwags:	0 Bells: 2
Other Train Activated Warning Devices:		Special Warning Devices Not Train Activated:	
Channelization:		Type of Train Detection:	Constant Warning Time
Track Equipped with Train Signals?	Yes	Traffic Light Interconnection/Preemption:	

Part IV: Physical Characteristics

Type of Development:	Open Space	Smallest Crossing Angle:	60 to 90 Degrees
Number of Traffic Lanes Crossing Railroad:	2	Are Truck Pullout Lanes Present?	No
Is Highway Paved?	Yes		
Crossing Surface:	Asphalt	If Other:	
Nearby Intersecting Highway?	Less than 75 feet	Is it Signalized?	
Does Track Run Down a Street?	No	Is Crossing Illuminated?	
Is Commercial Power Available?	Yes		

Part V: Highway Information

Highway System:	Non-Federal-aid	Functional Classification of Road at Crossing:	Rural Minor Collector
Is Crossing on State Highway System:	No		
Annual Average Daily Traffic (AADT):	000450	AADT Year:	1988
Estimated Percent Trucks:	40	Avg. No of School Buses per Day:	0
Posted Highway Speed:	0		

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

HIGHWAY-RAIL GRADE CROSSING ACCIDENT/INCIDENT REPORT

OMB Approval No. 2130-0500

Name Of	Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad: SP	1a. SP	1b. 58786
2. Other Railroad Involved in Train Accident/Incident	2a.	2b.
3. Railroad Responsible for Track Maintenance	3a.	3b.

4. U.S. DOT-AAR Grade Crossing ID No.	5. Date of Accident/Incident	6. Time of Accident/Incident
757313H	03/06/76	11:35 PM

7. Nearest Railroad Station	8. Division	9. County	10. State Abbr.	Code
FRESNO YARD		FRESNO	06	CA

11. City (if in a city): FRESNO
12. Highway Name or No.: BULLARD AVENUE ☑ Public ☐ Private

Highway User Involved

13. Type — A. Auto, B. Truck, C. Truck-trailer, D. Pick-up truck, E. Van, F. Bus, G. School Bus, H. Motorcycle, J. Other Motor Vehicle, K. Pedestrian, M. Other (specify) — Code: A

14. Vehicle Speed (est. mph at impact): 0

15. Direction (geographical) 1. North 2. South 3. East 4. West — Code: 2

16. Position 1. Stalled on crossing 2. Stopped on Crossing 3. Moving over crossing 4. Trapped — Code: 1

20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code: 4

Rail Equipment Involved

17. Equipment 1. Train (units pulling) 2. Train (units pushing) 3. Train (standing) 4. Car(s) (moving) 5. Car(s) (standing) 6. Light loco(s) (moving) 7. Light loco(s) (standing) 8. Other (specify) A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL — Code: 1

18. Position of Car Unit in Train: 1

19. Circumstance 1. Rail equipment struck highway user 2. Rail equipment struck by highway user — Code: 1

20b. Was there a hazardous materials release by 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code:

20c. State the name and quantity of the hazardous materials released, if any

21. Temperature (specify if minus): 49 °F

22. Visibility (single entry) 1. Dawn 2. Day 3. Dusk 4. Dark — Code: 4

23. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow — Code: 1

24. Type of Equipment Consist (single entry) 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/Switching 8. Light loco(s) 9. Main./inspect. car A. Spec. MoW Equip. — Code: 1

25. Track Type Used by Rail Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry — Code: 1

26. Track Number or Name: MAIN TRACK

27. FRA Track Class (1-9,X): 5

28. Number of Locomotive Units: 1

29. Number of Cars: 78

30. Consist Speed (Recorded if available) R. Recorded E. Estimated: 35 mph — Code: E

31. Time Table Direction 1. North 2. South 3. East 4. West — Code: 4

32. Type of Crossing Warning 1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig wags 5. Hwy. traffic signals 6. Audible 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other (specify) 12. None

Code(s): 01 07

33. Signaled Crossing Warning: 20 sec warn min

34. Whistle Ban 1. Yes 2. No 3. Unknown — Code:

35. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach — Code: 1

36. Crossing Warning Interconnected with Highway Signals 1. Yes 2. No 3. Unknown — Code: 2

37. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown — Code: 2

38. Driver's Age

39. Driver's Gender 1. Male 2. Female — Code:

40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown — Code: 2

41. Driver 1. Drove around or thru the gate 2. Stopped and then proceeded 3. Did not stop 4. Stopped on crossing 5. Other (specify) — Code: 5

42. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown — Code: 2

43. View of Track Obscured by (primary obstruction) 1. Permanent Structure 2. Standing railroad equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicles 7. Other (specify) 8. Not Obstructed — Code: 8

Casualties to:	Killed	Injured
46. Highway-Rail Crossing Users	0	0
49. Railroad Employees	0	0
52. Passengers on Train	0	0

44. Driver was 1. Killed 2. Injured 3. Uninjured — Code: 3

45. Was Driver in the Vehicle? 1. Yes 2. No — Code: 2

47. Highway Vehicle Property Damage (est. dollar damage): $500

48. Total Number of Highway-Rail Crossing Users (include driver): 2

50. Total Number of People on Train (include passengers and crew):

51. Is a Rail Equipment Accident / Incident Report Being Filed 1. Yes 2. No — Code: 2

53a. Special Study Block

53b. Special Study Block

54. Narrative Description

55. Typed Name and Title

56. Signature

57. Date

FORM FRA F 6180.57

* NOTE THAT ALL CASUALTIES MUST BE REPORTED ON FORM FRA F 6180.55A

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

HIGHWAY-RAIL GRADE CROSSING ACCIDENT/INCIDENT REPORT

OMB Approval No. 2130-0500

Name Of	Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad: SP	1a. SP	1b. E1072
2. Other Railroad Involved in Train Accident/Incident	2a.	2b.
3. Railroad Responsible for Track Maintenance: SP	3a. SP	3b. E1072

4. U.S. DOT-AAR Grade Crossing ID No.	5. Date of Accident/Incident	6. Time of Accident/Incident
757313H	03/23/82	01:30 AM

7. Nearest Railroad Station	8. Division	9. County	10. State Abbr.	Code
FRESNO		FRESNO	06	CA

11. City (if in a city): FRESNO
12. Highway Name or No.: BULLARD
☑ Public ☐ Private

Highway User Involved

13. Type — Code: A
A. Auto, B. Truck, C. Truck-trailer, D. Pick-up truck, E. Van, F. Bus, G. School Bus, H. Motorcycle, J. Other Motor Vehicle, K. Pedestrian, M. Other (specify)

14. Vehicle Speed (est. mph at impact): 0

15. Direction (geographical) — Code: 1
1. North 2. South 3. East 4. West

16. Position — Code: 1
1. Stalled on crossing 2. Stopped on Crossing 3. Moving over crossing 4. Trapped

20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? — Code: 4
1. Highway User 2. Rail Equipment 3. Both 4. Neither

Rail Equipment Involved

17. Equipment — Code: 1
1. Train (units pulling) 2. Train (units pushing) 3. Train (standing) 4. Car(s) (moving) 5. Car(s) (standing) 6. Light loco(s) (moving) 7. Light loco(s) (standing) 8. Other (specify) A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL

18. Position of Car Unit in Train: 1

19. Circumstance — Code: 1
1. Rail equipment struck highway user 2. Rail equipment struck by highway user

20b. Was there a hazardous materials release by — Code:
1. Highway User 2. Rail Equipment 3. Both 4. Neither

20c. State the name and quantity of the hazardous materials released, if any

21. Temperature (specify if minus): 49 °F

22. Visibility (single entry) — Code: 4
1. Dawn 2. Day 3. Dusk 4. Dark

23. Weather (single entry) — Code: 1
1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow

24. Type of Equipment Consist (single entry) — Code: 1
1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/Switching 8. Light loco(s) 9. Main./inspect. car A. Spec. MoW Equip.

25. Track Type Used by Rail Equipment Involved — Code: 1
1. Main 2. Yard 3. Siding 4. Industry

26. Track Number or Name: MAINLINE

27. FRA Track Class (1-9,X): 1

28. Number of Locomotive Units: 3

29. Number of Cars: 76

30. Consist Speed (Recorded if available) — Code: E
R. Recorded
E. Estimated 25 mph

31. Time Table Direction — Code: 3
1. North 2. South 3. East 4. West

32. Type of Crossing Warning — Code(s): 01, 07
1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig wags 5. Hwy. traffic signals 6. Audible 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other (specify) 12. None

33. Signaled Crossing Warning: 20 sec warn min

34. Whistle Ban — Code:
1. Yes 2. No 3. Unknown

35. Location of Warning — Code: 1
1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach

36. Crossing Warning Interconnected with Highway Signals — Code: 2
1. Yes 2. No 3. Unknown

37. Crossing Illuminated by Street Lights or Special Lights — Code: 2
1. Yes 2. No 3. Unknown

38. Driver's Age

39. Driver's Gender — Code:
1. Male 2. Female

40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train — Code: 2
1. Yes 2. No 3. Unknown

41. Driver — Code: 4
1. Drove around or thru the gate 2. Stopped and then proceeded 3. Did not stop 4. Stopped on crossing 5. Other (specify)

42. Driver Passed Standing Highway Vehicle — Code: 2
1. Yes 2. No 3. Unknown

43. View of Track Obscured by (primary obstruction) — Code: 8
1. Permanent Structure 2. Standing railroad equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicles 7. Other (specify) 8. Not Obstructed

Casualties to:	Killed	Injured
46. Highway-Rail Crossing Users	0	1
49. Railroad Employees	0	0
52. Passengers on Train	0	0

44. Driver was — Code: 2
1. Killed 2. Injured 3. Uninjured

45. Was Driver in the Vehicle? — Code: 1
1. Yes 2. No

47. Highway Vehicle Property Damage (est. dollar damage): $1,000

48. Total Number of Highway-Rail Crossing Users (include driver): 1

50. Total Number of People on Train (include passengers and crew):

51. Is a Rail Equipment Accident / Incident Report Being Filed — Code: 2
1. Yes 2. No

53a. Special Study Block

53b. Special Study Block

54. Narrative Description

55. Typed Name and Title

56. Signature

57. Date

FORM FRA F 6180.57

* NOTE THAT ALL CASUALTIES MUST BE REPORTED ON FORM FRA F 6180.55A

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

HIGHWAY-RAIL GRADE CROSSING ACCIDENT/INCIDENT REPORT

OMB Approval No. 2130-0500

Name Of	Alphabetic Code	RR Accident/Incident No.
1. Reporting Railroad: SP	1a. SP	1b. E4833
2. Other Railroad Involved in Train Accident/Incident	2a.	2b.
3. Railroad Responsible for Track Maintenance: SP	3a. SP	3b. E4833

4. U.S. DOT-AAR Grade Crossing ID No.	5. Date of Accident/Incident	6. Time of Accident/Incident
757313H	08/13/83	10:10 PM

7. Nearest Railroad Station	8. Division	9. County	10. State Abbr.	Code
FRESNO		FRESNO	06	CA

11. City (if in a city): FRESNO
12. Highway Name or No.: BULLARD AVE
☑ Public ☐ Private

Highway User Involved

13. Type — A. Auto, B. Truck, C. Truck-trailer, D. Pick-up truck, E. Van, F. Bus, G. School Bus, H. Motorcycle, J. Other Motor Vehicle, K. Pedestrian, M. Other (specify) — Code: A

14. Vehicle Speed (est. mph at impact): 0

15. Direction (geographical) — 1. North 2. South 3. East 4. West — Code: 3

16. Position — 1. Stalled on crossing 2. Stopped on Crossing 3. Moving over crossing 4. Trapped — Code: 1

20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? — 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code: 4

Rail Equipment Involved

17. Equipment — 1. Train (units pulling) 2. Train (units pushing) 3. Train (standing) 4. Car(s) (moving) 5. Car(s) (standing) 6. Light loco(s) (moving) 7. Light loco(s) (standing) 8. Other (specify) A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL — Code: 1

18. Position of Car Unit in Train: 1

19. Circumstance — 1. Rail equipment struck highway user 2. Rail equipment struck by highway user — Code: 1

20b. Was there a hazardous materials release by — 1. Highway User 2. Rail Equipment 3. Both 4. Neither — Code:

20c. State the name and quantity of the hazardous materials released, if any

21. Temperature (specify if minus): 90 °F

22. Visibility (single entry) — 1. Dawn 2. Day 3. Dusk 4. Dark — Code: 4

23. Weather (single entry) — 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow — Code: 1

24. Type of Equipment Consist (single entry) — 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/Switching 8. Light loco(s) 9. Main./inspect. car A. Spec. MoW Equip. — Code: 1

25. Track Type Used by Rail Equipment Involved — 1. Main 2. Yard 3. Siding 4. Industry — Code: 1

26. Track Number or Name: MAINLINE

27. FRA Track Class (1-9,X): 1

28. Number of Locomotive Units: 4

29. Number of Cars: 104

30. Consist Speed (Recorded if available) — R. Recorded E. Estimated: 38 mph — Code: E

31. Time Table Direction — 1. North 2. South 3. East 4. West — Code: 3

32. Type of Crossing Warning — 1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig wags 5. Hwy. traffic signals 6. Audible 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other (specify) 12. None — Code(s): 01

33. Signaled Crossing Warning: 20 sec warn min

34. Whistle Ban — 1. Yes 2. No 3. Unknown — Code:

35. Location of Warning — 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach — Code: 1

36. Crossing Warning Interconnected with Highway Signals — 1. Yes 2. No 3. Unknown — Code: 1

37. Crossing Illuminated by Street Lights or Special Lights — 1. Yes 2. No 3. Unknown — Code: 2

38. Driver's Age

39. Driver's Gender — 1. Male 2. Female — Code:

40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train — 1. Yes 2. No 3. Unknown — Code: 2

41. Driver — 1. Drove around or thru the gate 2. Stopped and then proceeded 3. Did not stop 4. Stopped on crossing 5. Other (specify) — Code: 4

42. Driver Passed Standing Highway Vehicle — 1. Yes 2. No 3. Unknown — Code: 2

43. View of Track Obscured by (primary obstruction) — 1. Permanent Structure 2. Standing railroad equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicles 7. Other (specify) 8. Not Obstructed — Code: 8

Casualties to:	Killed	Injured
46. Highway-Rail Crossing Users	0	0
49. Railroad Employees	0	0
52. Passengers on Train	0	0

44. Driver was — 1. Killed 2. Injured 3. Uninjured — Code: 3

45. Was Driver in the Vehicle? — 1. Yes 2. No — Code: 2

47. Highway Vehicle Property Damage (est. dollar damage): $1,000

48. Total Number of Highway-Rail Crossing Users (include driver): 0

50. Total Number of People on Train (include passengers and crew):

51. Is a Rail Equipment Accident / Incident Report Being Filed — 1. Yes 2. No — Code: 2

53a. Special Study Block

53b. Special Study Block

54. Narrative Description

55. Typed Name and Title

56. Signature

57. Date

FORM FRA F 6180.57

* NOTE THAT ALL CASUALTIES MUST BE REPORTED ON FORM FRA F 6180.55A

Appendix C.
Accident Prediction System Reports

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 25-Apr-2008 2:42 pm

	Fatal	Injury	PDO	Total
Base	0.016396	0.028084	0.052088	0.096568
Alternate	0.016396	0.028084	0.052088	0.096568

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	4	4.0
Dist from hway	0.03	0.0
AADT	2,636	2,636
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.01260	0.01260
Injury	0.02159	0.02159
PDO	0.04004	0.04004
Total	0.07424	0.07424

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	2,476	2,476
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00379	0.00379
Injury	0.00649	0.00649
PDO	0.01204	0.01204
Total	0.02233	0.02233

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

BASELINE - 2008

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 25-Apr-2008 2:59 pm

	Fatal	Injury	PDO	Total
Base	0.019911	0.034105	0.063256	0.117272
Alternate	0.017035	0.029179	0.054119	0.100332

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	6	4.0
Dist from hway	0.03	0.0
AADT	3,842	2,636
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.01561	0.01273
Injury	0.02674	0.02181
PDO	0.04959	0.04045
Total	0.09194	0.07500

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	4,048	4,048
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00430	0.00430
Injury	0.00737	0.00737
PDO	0.01366	0.01366
Total	0.02533	0.02533

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

BASELINE - 2010

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 25-Apr-2008 3:03 pm

	Fatal	Injury	PDO	Total
Base	0.020443	0.035016	0.064945	0.120404
Alternate	0.017415	0.029830	0.055328	0.102573

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	6	4.0
Dist from hway	0.03	0.0
AADT	4,000	2,636
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.01605	0.01302
Injury	0.02749	0.02230
PDO	0.05098	0.04137
Total	0.09452	0.07669

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	3,946	3,946
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00439	0.00439
Injury	0.00753	0.00753
PDO	0.01396	0.01396
Total	0.02588	0.02588

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

BASELINE 2012

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 25-Apr-2008 3:05 pm

	Fatal	Injury	PDO	Total
Base	0.004537	0.007772	0.014414	0.026723
Alternate	0.017770	0.030438	0.056455	0.104664

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Grade Separation
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	6	4.0
Dist from hway	0.03	0.0
AADT	4,000	2,636
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00000	0.01323
Injury	0.00000	0.02267
PDO	0.00000	0.04204
Total	0.00000	0.07794

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	8,904	8,904
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00454	0.00454
Injury	0.00777	0.00777
PDO	0.01441	0.01441
Total	0.02672	0.02672

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

BASELINE 2017

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 25-Apr-2008 3:08 pm

	Fatal	Injury	PDO	Total
Base	0.005101	0.008737	0.016205	0.030044
Alternate	0.017603	0.030152	0.055924	0.103679

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Grade Separation
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	6	4.0
Dist from hway	0.03	0.0
AADT	4,000	2,636
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00000	0.01250
Injury	0.00000	0.02141
PDO	0.00000	0.03972
Total	0.00000	0.07364

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	9,428	9,428
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00510	0.00510
Injury	0.00874	0.00874
PDO	0.01621	0.01621
Total	0.03004	0.03004

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

BASELINE 2019

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno			Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	Freight	19.0	Random
Signal Synchronization?	True			Switch	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 25-Apr-2008 3:10 pm

	Fatal	Injury	PDO	Total
Base	0.004317	0.007395	0.013715	0.025427
Alternate	0.016801	0.028778	0.053376	0.098956

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Grade Separation
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	6	4.0
Dist from hway	0.03	0.0
AADT	4,000	2,636
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00000	0.01248
Injury	0.00000	0.02138
PDO	0.00000	0.03966
Total	0.00000	0.07353

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	4,898	4,898
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00432	0.00432
Injury	0.00739	0.00739
PDO	0.01372	0.01372
Total	0.02543	0.02543

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

BASELINE 2025

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 25-Apr-2008 4:16 pm

	Fatal	Injury	PDO	Total
Base	0.005862	0.010041	0.018623	0.034526
Alternate	0.019257	0.032985	0.061178	0.113419

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Grade Separation
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	6	4.0
Dist from hway	0.03	0.0
AADT	4,533	3,842
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00000	0.01339
Injury	0.00000	0.02294
PDO	0.00000	0.04255
Total	0.00000	0.07889

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	16,651	16,651
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00586	0.00586
Injury	0.01004	0.01004
PDO	0.01862	0.01862
Total	0.03453	0.03453

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

PROJECT 2010

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 25-Apr-2008 4:14 pm

	Fatal	Injury	PDO	Total
Base	0.006148	0.010531	0.019532	0.036212
Alternate	0.020154	0.034522	0.064028	0.118704

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Grade Separation
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	6	4.0
Dist from hway	0.03	0.0
AADT	4,533	3,842
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00000	0.01401
Injury	0.00000	0.02399
PDO	0.00000	0.04450
Total	0.00000	0.08249

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	16,940	16,940
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00615	0.00615
Injury	0.01053	0.01053
PDO	0.01953	0.01953
Total	0.03621	0.03621

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

PROJECT 2012

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 25-Apr-2008 4:10 pm

	Fatal	Injury	PDO	Total
Base	0.022617	0.038741	0.071855	0.133214
Alternate	0.019943	0.034160	0.063358	0.117461

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Accidents in 5 Years 1

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	6	4.0
Dist from hway	0.03	0.0
AADT	4,533	3,842
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.01734	0.01467
Injury	0.02971	0.02513
PDO	0.05510	0.04660
Total	0.10215	0.08640

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Accidents in 5 Years 0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	6,343	6,343
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00527	0.00527
Injury	0.00903	0.00903
PDO	0.01675	0.01675
Total	0.03106	0.03106

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

PROJECT 2017

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 25-Apr-2008 4:03 pm

	Fatal	Injury	PDO	Total
Base	0.020746	0.035537	0.065911	0.122194
Alternate	0.020746	0.035537	0.065911	0.122194

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	6	4.0
Dist from hway	0.03	0.0
AADT	3,842	3,842
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.01605	0.01605
Injury	0.02749	0.02749
PDO	0.05098	0.05098
Total	0.09452	0.09452

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	5,036	5,036
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00470	0.00470
Injury	0.00805	0.00805
PDO	0.01493	0.01493
Total	0.02768	0.02768

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

PROJECT 2019

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 25-Apr-2008 4:17 pm

	Fatal	Injury	PDO	Total
Base	0.005138	0.008802	0.016324	0.030264
Alternate	0.018325	0.031388	0.058217	0.107929

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Grade Separation
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Accidents in 5 Years 1

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	6	4.0
Dist from hway	0.03	0.0
AADT	4,533	3,842
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00000	0.01319
Injury	0.00000	0.02259
PDO	0.00000	0.04189
Total	0.00000	0.07766

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Accidents in 5 Years 0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	9,928	9,928
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00514	0.00514
Injury	0.00880	0.00880
PDO	0.01632	0.01632
Total	0.03026	0.03026

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

PROJECT 2025

Appendix H2
Addendum to the Rail Safety Study, July 2010

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Technical Memorandum

DATE	July 19, 2010
FROM	Cathleen M. Fitzgerald, DEnv, PE - Senior Engineer
SUBJECT	Addendum to the Rail Safety Study for Fresno El Paseo
PROJECT NO.	JAC-01.0E
ATTACHMENT(S)	Appendix A: Accident Prediction System Reports

The following information provides an addendum to the Rail Safety Study (RSS) dated March 2008 and prepared by The Planning Center. This addendum provides an update to the RSS, and information contained herein is intended to supplement the March 2008 RSS.

REVISED HIGHWAY-RAIL CROSSING ACCIDENT RATES

The highway-rail crossing accident rates in the table below for the Herndon Avenue and Carnegie Avenue crossings are supplemental to the highway-rail crossing accident rates presented in the RSS which is included in Appendix H of the May 2010 Fresno El Paseo Draft EIR. The accident rates in the table below assume improvements to Golden State Boulevard/Herndon Avenue intersection and crossing that are currently under construction with an anticipated completion date of October 2010 and the Veterans Avenue grade separation for Phases 3 through 5. The planned Herndon Avenue/Golden State roadway improvement project includes installation of a new median and new gate crossing arms at the Herndon Avenue crossing. The median on both sides of the railroad crossing will prevent vehicles from circumventing the gate crossing arms. In addition, the table presented below includes accident rates at the Herndon Avenue crossing for Phases 3 through 5 assuming that the Herndon Avenue grade separation project is not constructed. The FRA's GradeDec computer program was used to calculate the accident rates and the output files are provided in Appendix A.

YEAR	PROJECT PHASE	BASELINE HERNDON	PROJECT HERNDON	INCREASE WITH PROJECT	BASELINE CARNEGIE	PROJECT CARNEGIE	INCREASE WITH PROJECT
2010	1	0.090	0.093	0.003	0.025	0.027	0.002
2012	2A & 2B	0.092	0.094	0.002	0.025	0.029	0.004
2017	3 & 4	0.093	0.097	0.004	0.031	0.037	0.006
2019	5	0.090	0.093	0.003	0.030	0.035	0.005

2010 - Included improvements to Golden State/Herndon intersection and crossing
2017 - Assumed Veterans Avenue grade separation completed during this year
After 2017, less traffic on Herndon & Carnegie with Veterans Boulevard in operation

Appendix A

Accident Prediction System Reports

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno			Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	Freight	19.0	Random
Signal Synchronization?	True			Switch	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 16-Jul-2010 12:00 am

	Fatal	Injury	PDO	Total
Base	0.007226	0.012378	0.022958	0.042562
Alternate	0.019425	0.033274	0.061714	0.114414

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	Barrier curbs
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	6	6.0
Dist from hway	0.03	0.0
AADT	3,842	3,842
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00305	0.01525
Injury	0.00522	0.02612
PDO	0.00969	0.04845
Total	0.01796	0.08981

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	4,048	4,048
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00418	0.00418
Injury	0.00715	0.00715
PDO	0.01327	0.01327
Total	0.02460	0.02460

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 16-Jul-2010 12:07 am

	Fatal	Injury	PDO	Total
Base	0.007430	0.012728	0.023606	0.043764
Alternate	0.019886	0.034062	0.063177	0.117125

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	Barrier curbs
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	6	6.0
Dist from hway	0.03	0.0
AADT	4,000	3,842
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00314	0.01559
Injury	0.00537	0.02671
PDO	0.00997	0.04954
Total	0.01848	0.09184

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	3,946	3,946
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00429	0.00429
Injury	0.00735	0.00735
PDO	0.01364	0.01364
Total	0.02529	0.02529

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 16-Jul-2010 1:13 am

	Fatal	Injury	PDO	Total
Base	0.008131	0.013927	0.025831	0.047889
Alternate	0.020421	0.034979	0.064876	0.120275

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	Barrier curbs
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	6	6.0
Dist from hway	0.03	0.0
AADT	3,554	3,842
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00303	0.01532
Injury	0.00519	0.02624
PDO	0.00962	0.04866
Total	0.01783	0.09022

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	9,428	9,428
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00510	0.00510
Injury	0.00874	0.00874
PDO	0.01621	0.01621
Total	0.03006	0.03006

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 16-Jul-2010 12:14 am

	Fatal	Injury	PDO	Total
Base	0.008326	0.014261	0.026451	0.049038
Alternate	0.020982	0.035940	0.066659	0.123582

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	Barrier curbs
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics	*Base*	*Alternate*
H'way Lanes	6	6.0
Dist from hway	0.03	0.0
AADT	3,402	3,842
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	*Base*	*Alternate*
Fatal	0.00309	0.01575
Injury	0.00530	0.02698
PDO	0.00983	0.05004
Total	0.01822	0.09276

Costs in '000 $	*Base*	*Alternate*
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics	*Base*	*Alternate*
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	8,904	8,904
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	*Base*	*Alternate*
Fatal	0.00523	0.00523
Injury	0.00896	0.00896
PDO	0.01662	0.01662
Total	0.03082	0.03082

Costs in '000 $	*Base*	*Alternate*
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

FEDERAL RAILROAD ADMINISTRATION

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CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 16-Jul-2010 12:26 am

	Fatal	Injury	PDO	Total
Base	0.007720	0.013224	0.024528	0.045473
Alternate	0.020394	0.034933	0.064792	0.120119

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	Barrier curbs
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	6	6.0
Dist from hway	0.03	0.0
AADT	3,842	3,842
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00317	0.01584
Injury	0.00543	0.02714
PDO	0.01007	0.05033
Total	0.01866	0.09331

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)

Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics

	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	5,036	5,036
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents

	Base	Alternate
Fatal	0.00455	0.00455
Injury	0.00780	0.00780
PDO	0.01446	0.01446
Total	0.02681	0.02681

Costs in '000 $

	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 28-Jul-2010 2:39 pm

	Fatal	Injury	PDO	Total
Base	0.008154	0.013966	0.025904	0.048024
Alternate	0.020967	0.035915	0.066613	0.123496

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	Barrier curbs
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	6	6.0
Dist from hway	0.03	0.0
AADT	3,892	3,942
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00320	0.01601
Injury	0.00547	0.02742
PDO	0.01015	0.05086
Total	0.01882	0.09430

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	6,450	6,450
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00496	0.00496
Injury	0.00849	0.00849
PDO	0.01575	0.01575
Total	0.02920	0.02920

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 28-Jul-2010 2:19 pm

	Fatal	Injury	PDO	Total
Base	0.009623	0.016483	0.030572	0.056678
Alternate	0.022838	0.039120	0.072557	0.134515

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	Barrier curbs
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	6	6.0
Dist from hway	0.03	0.0
AADT	3,842	3,942
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00329	0.01650
Injury	0.00563	0.02827
PDO	0.01045	0.05243
Total	0.01937	0.09720

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	16,800	16,800
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00633	0.00633
Injury	0.01085	0.01085
PDO	0.02012	0.02012
Total	0.03731	0.03731

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

FEDERAL RAILROAD ADMINISTRATION

GRADEDEC.NET

CORRIDOR AND CROSSING DATA

(without phased improvements)

User: fitzgeraldcathy
Dataset: Fresno El Paseo
Corridor ID 3

					Avg. No. Trains Per Day	Train Time-of-Day Distribution
Corridor Name	UP Line Fresno					
				Passenger	0.0	Random
Technology Factors	0.50	0.50	0.50	*Freight*	19.0	Random
Signal Synchronization?	True			*Switch*	0.0	Random

CORRIDOR SUMMARY OF PREDICTED ANNUAL ACCIDENTS

Calculated: 16-Jul-2010 12:48 am

	Fatal	Injury	PDO	Total
Base	0.009129	0.015636	0.029001	0.053767
Alternate	0.021716	0.037197	0.068991	0.127905

CROSSING DATA FOR THE UP LINE FRESNO CORRIDOR

Milepost 195.75 Crossing ID 757312B Accidents in 5 Years 1

Description UP - HERNDON AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	Barrier curbs
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	6	6.0
Dist from hway	0.03	0.0
AADT	4,272	3,842
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Day Flat	Day Flat
Percent Bus	0.0	0.0
Bus TOD Dist	Day Flat	Day Flat

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00321	0.01580
Injury	0.00550	0.02706
PDO	0.01020	0.05019
Total	0.01890	0.09304

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Milepost 197.20 Crossing ID 757313H Accidents in 5 Years 0

Description UP - BULLARD AV.

Paved? True	Urban? False
GCX Base Type	Gates
Safety Sup. Type	None
GCX Alt Type	Gates
Safety Sup. type	None
No. RR Tracks	1

Train Speeds (mph)	
Max Timetable	70.0
Passenger	70.0
Freight	56.0
Switch	21.0

Highway Traffic Characteristics	Base	Alternate
H'way Lanes	2	2.0
Dist from hway	0.02	0.0
AADT	16,651	16,651
Auto TOD Dist	Day Flat	Day Flat
Percent Trucks	15.0	15.0
Of this, % trailers	0.0	0.0
Truck TOD Dist	Uniform	Uniform
Percent Bus	0.0	0.0
Bus TOD Dist	Uniform	Uniform

Costs in '000 $ of Hway Improvement 0.0

Predicted Annual Accidents	Base	Alternate
Fatal	0.00592	0.00592
Injury	0.01014	0.01014
PDO	0.01880	0.01880
Total	0.03486	0.03486

Costs in '000 $	Base	Alternate
Grade Crossing Devices		
O&M	2.5	2.5
Oth. Lcycle	0.0	0.0
Capital		106.1
Supplementary Safety		
O&M	0.0	0.0
Oth. Lcycle	0.0	0.0
Capital		0.0

Recirculated Appendix L Traffic Study

L1: Traffic Impact Study, Volume 1, October 2008
L2: Traffic Impact Study, Volume 2, October 2008
L3: TIS Updates, December 2009
L4: TIS Updates: Regional Traffic Mitigation Fee Program and Combined Share Fee, July 2010
L5: Phase 1 Sub-Phasing Analysis, July 2009

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Appendix L1
Traffic Impact Study, Volume 1, October 2008

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VOLUME 1

FINAL TRAFFIC IMPACT STUDY
FRESNO EL PASEO PROJECT

DKS Associates
TRANSPORTATION SOLUTIONS

October 30, 2008

VOLUME 1

FINAL TRAFFIC IMPACT STUDY

FRESNO EL PASEO PROJECT

October 30, 2008

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This Traffic Impact Study has been prepared under the direction of Denis Bilodeau, P.E., T.E., PTOE. Mr. Bilodeau attests to the technical information contained therein and has judged the qualifications of recommendations, conclusions, and decisions are based on City of Fresno guidelines, general engineering standards, and California/Federal laws.

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1.0 EXECUTIVE SUMMARY

This report presents the Traffic Impact Study (TIS) prepared by DKS Associates (DKS) for the proposed Fresno El Paseo Project (proposed project) located in the northwest portion of the City of Fresno (City). The approximately 238 acre project site is generally bounded by Herndon Avenue to the north, Carnegie Avenue to the south, Bryan Avenue and Bullard Avenue to the east, and State Route 99 (SR 99) to the west. The proposed project would be developed in five phases over a period of nine years with Phase 1 projected to have an opening year of 2010. Buildout of Phase 1 would occur in 2010; Phase 2 (2A and 2B) in 2012; Phases 3 and 4 in 2017; and Phase 5 in 2019.

This TIS has been prepared based on the *City of Fresno Traffic Impact Study Report Guidelines* (October 2006), Caltrans' *Guide for the Preparation of Traffic Impact Studies* (December 2002), the Council of Fresno County Governments (Fresno COG) *Recommended Procedures for Using Traffic Projections from the Fresno COG Travel Model* (December 2002), and the California Environmental Quality Act (CEQA).

The following summarizes the impacts of the Master Plan:

Trip Generation

Weekday and Saturday daily and peak hour trip generation estimates for the proposed project, Phases 1 through 5, were developed using trip rates provided in the Institute of Transportation Engineers (ITE) *Trip Generation*, 7th Edition. Phase 1 would generate approximately 37,906 daily trips, 1,025 a.m. peak hour trips (582 inbound and 443 outbound), and 3,081 p.m. peak hour trips (1,492 inbound and 1,589 outbound). During a typical Saturday, Phase 1 would generate approximately 4,594 peak hour trips (2,363 inbound and 2,231 outbound).

For the entire project, Phases 1, 2, 3, 4, and 5 at their buildout, the proposed project would generate approximately 95,614 daily trips, 3,281 a.m. peak hour trips (2,254 inbound and 1,027 outbound), and 8,068 p.m. peak hour trips (3,573 inbound and 4,495 outbound) during a typical weekday.

It should be noted that the above trip generation estimates represent a conservative, but realistic, estimate of daily and peak hour trip generation based on the following characteristics: 1) a conservative pass-by percentage reduction was applied to the retail/commercial uses (in only the p.m. peak hour, consistent with pass-by data provided by the ITE); and 2) trip rates used for the "big box" retail uses ("anchor" and "major" retail/commercial pads) were taken from rates for stand-alone big box stores that were not part of an integrated center of retail uses that would normally capture trips for a variety of other retail uses. The following provides a discussion of these characteristics.

The Master Plan site is currently designated as Light Industrial and Medium Residential in the 2025 General Plan. Based on a trip generation analysis utilizing ITE trip rates for Light Industrial and Residential Condominium/Townhouse, the traffic generated by the Master Plan area, based on the currently designated General Plan land uses (Light Industrial and Medium Residential), is approximately 11,938 ADT, 1,584 a.m. peak hour trips (1,211 inbound and 373 outbound), and 1,565 peak hour trips (428 inbound and 1,137 outbound).

With the proposed General Plan Amendment, the Master Plan would replace the designated Light Industrial and Medium Residential uses with a mix of retail/commercial uses (power center,

lifestyle, and neighborhood retail centers) and office/business park uses. Based on the Master Plan's total trip generation estimates discussed above, the entire 240 acre Master Plan area would generate approximately 95,614 ADT, 3,281 a.m. peak hour trips (2,254 inbound and 1,027 outbound), and 8,068 p.m. peak hour trips (3,573 inbound and 4,495 outbound).

Therefore, the additional net trips generated in the Master Plan area (i.e., the difference in trips between the proposed GPA and currently designated land uses) would be approximately 83,676 *more* ADT, 1,697 *more* a.m. peak hour trips, and 6,503 *more* p.m. peak hour trips.

Existing plus Master Plan

Intersection Levels of Service

The following study intersections would be significantly impacted by the addition of the proposed Master Plan (Phases 1 through 5) to existing (2007) traffic. Therefore, the proposed project would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or greater at LOS E or F) at the following study intersections:

- Parkway Drive/Herndon Avenue (additional delay ≥5 seconds to LOS F in a.m.; LOS E to F in p.m.)
- SR 99 southbound off-ramp/Herndon Avenue (LOS D to F in a.m.; LOS C to F in p.m.)
- SR 99 northbound off-ramp/Herndon Avenue (LOS E to F in a.m.; additional delay ≥5 seconds to LOS F in p.m.)
- Golden State Boulevard/Herndon Avenue (LOS C to F in both peak hours)
- Phase 1 secondary driveway (former Weber Avenue)/Herndon Avenue (LOS B to F in the p.m.)
- Bryan Avenue/Herndon Avenue (LOS B to F in p.m.)
- Polk Avenue/Herndon Avenue (LOS C to E in p.m.)
- Palm Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS F in p.m.)
- Grantland Avenue/Parkway Drive (LOS C to F in a.m.; LOS B to F in p.m.)
- Veterans Boulevard/Bryan Avenue (new intersection; LOS E in p.m.)
- Polk Avenue/Sierra Avenue (LOS B to F in p.m.)
- Carnegie Avenue/Bullard Avenue (LOS E to F in a.m.; additional delay ≥5 seconds to LOS F in p.m.)
- Golden State Boulevard/Carnegie Avenue (LOS E to F in a.m.; LOS C to F in p.m.)
- Dante Avenue/Bullard Avenue (LOS B to F in both peak hours)
- Palm Avenue/Bullard Avenue (LOS D to E in p.m.)
- Grantland Avenue/Barstow Avenue (LOS B to E in p.m.)
- SR 99 southbound ramps/Shaw Avenue (LOS C to D in p.m.)
- Brawley Avenue/Shaw Avenue (LOS D to E in p.m.)
- SR 99 northbound ramps/Ashlan Avenue (additional delay ≥5 seconds to LOS E in p.m.)

Queuing Analysis

The addition of Master Plan traffic to the existing (2007) condition would create new significant queues and/or exacerbate significant baseline queues by more than one vehicle (or 25 feet) that would exceed a storage lane's capacity during the weekday peak hours:

- SR 99 southbound off-ramp/Herndon Avenue (SBL and SBR in p.m.)
- SR 99 northbound off-ramp/Herndon Avenue (NBL in both peak hours)
- Golden State Boulevard/Herndon Avenue (NBL and EBL in p.m.; NBR, SBL, and WBL in both peak hours)
- Bryan Avenue/Herndon Avenue (NBL and WBL in both peak hours; NBR in p.m.)
- Hayes Avenue/Herndon Avenue (WBL in a.m.)
- Milburn Avenue/Herndon Avenue (SBR and WBR in p.m.)
- Brawley Avenue/Herndon Avenue (NBL and WBL in p.m.)
- Marks Avenue/Herndon Avenue (SBR and EBR in p.m.)
- West Avenue/Herndon Avenue (NBR in a.m.; SBL in both peak hours)
- Palm Avenue/Herndon Avenue (NBL, SBR, and EBL in both peak hours; WBR in a.m.)
- Grantland Avenue/Parkway Drive (NBL in both peak hours)
- Bryan Avenue/Palo Alto Avenue (NBL and EBL in p.m.; SBL in a.m.)
- Bryan Avenue/Sierra Avenue (SBL and WBL in p.m.)
- Palm Avenue/Bullard Avenue (SBL and EBL in both peak hours)
- SR 99 southbound ramps/Shaw Avenue (NBR in p.m.; WBL in both peak hours)
- SR 99 northbound ramps/Shaw Avenue (SBR in p.m.)
- Golden State Boulevard/Shaw Avenue (NBR and SBL in p.m.)
- Brawley Avenue/Shaw Avenue (SBL in p.m.)
- Marks Avenue/Shaw Avenue (SBR in both peak hours)
- SR 99 southbound ramps/Ashlan Avenue (NBR in a.m.)
- SR 99 northbound ramps/Ashlan Avenue (NBL and WBR in p.m.)

Roadway Level of Service Analysis

The addition of the Master Plan (Phases 1 through 5) trips to the following roadway segments would be considered a significant impact since the LOS changes from satisfactory conditions (LOS D or better) in existing baseline condition to unsatisfactory (i.e. LOS E or F) levels with the addition of project traffic:

- Herndon Avenue: Parkway Drive to SR 99 southbound off-ramp (LOS D to F westbound a.m.; LOS C to E eastbound, and LOS D to F westbound in p.m.)
- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (LOS D to F westbound a.m.; LOS C to E eastbound, and LOS C to F westbound in p.m.)
- Herndon Avenue: SR 99 northbound off-ramp to Golden State Boulevard (LOS D to F both directions in a.m.; LOS D to F eastbound, and LOS C to F westbound in p.m.)

- Herndon Avenue: Golden State Boulevard to Secondary Driveway, previously Weber Avenue (LOS C to F eastbound in a.m.; LOS C to F both directions in p.m.)
- Herndon Avenue: Polk Avenue to Milburn Avenue (LOS C to F eastbound in p.m.)
- Herndon Avenue: Brawley Avenue to Marks Avenue (LOS E to F westbound in p.m.)
- Herndon Avenue: West Avenue to Palm Avenue (LOS E to F westbound in p.m.)
- Parkway Drive: Herndon Avenue to Grantland Avenue (LOS D to F westbound in both peak hours)
- Bryan Avenue: Veterans Boulevard to Sierra Avenue (new roadway segment; LOS E southbound in p.m.)
- Bryan Avenue: Sierra Avenue to Carnegie Avenue (LOS C to E southbound in p.m.)
- Bryan Avenue: Carnegie Avenue to Dante Avenue (LOS C to F southbound in p.m.)
- Hayes Avenue: Herndon Avenue to Palo Alto Avenue (LOS C to E southbound in a.m.; LOS C to F northbound in p.m.)
- Hayes Avenue: Palo Alto Avenue to Veterans Boulevard (LOS C to F northbound in p.m.)
- Sierra Avenue: Bryan Avenue to Polk Avenue (LOS C to F westbound in a.m.; LOS C to F both directions in p.m.)
- Golden State Boulevard: Herndon Avenue to Veterans Boulevard (LOS C to F both directions in p.m.)
- Golden State Boulevard: Veterans Boulevard to Carnegie Avenue (LOS C to F both directions in p.m.)
- Golden State Boulevard: Carnegie Avenue to Shaw Avenue (LOS D to F northbound, and LOS C to F southbound in p.m.)
- Golden State Boulevard: Shaw Avenue to Ashlan Avenue (LOS D to F southbound in p.m.)
- Shaw Avenue: west of SR 99 southbound ramps (LOS D to F eastbound in p.m.)
- Shaw Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS D to E westbound in p.m.)
- Shaw Avenue: SR 99 northbound ramps to Golden State Boulevard (LOS D to E westbound in p.m.)
- Shaw Avenue: Brawley Avenue to Marks Avenue (LOS D to E eastbound in p.m.)
- Dante Avenue: Polk Avenue to Bullard Avenue (LOS C to F northbound p.m.)
- Carnegie Avenue: Golden State Boulevard to Bullard Avenue (LOS C to E eastbound, and LOS D to F westbound in a.m.; LOS D to F eastbound, and LOS C to F westbound in p.m.)

Freeway Level of Service Analyses

Mainline Levels of Service

Addition of Phases 1 through 5 to the existing freeway segments would create significant impacts to the following freeway segments:

- SR 99 northbound in the a.m. peak hour: Herndon Avenue to Dakota Avenue

- SR 99 southbound in the a.m. peak hour: Avenue 7 to Herndon Avenue
- SR 99 southbound in the p.m. peak hour: Herndon Avenue to Shaw Avenue

Weaving Section Levels of Service

Addition of the Master Plan to SR 99 would create new significant impacts at the following weaving sections:

- SR 99 northbound: Shaw Avenue to Herndon Avenue (LOS C to E in a.m.; LOS D to F in p.m.)
- SR 99 southbound: Herndon Avenue to Shaw Avenue (LOS C to D in a.m.; LOS C to F in p.m.)

At-Grade Railroad Crossing Analysis

The addition of Master Plan traffic would cause new queuing impacts (i.e., new impacts to adjacent major intersections from the baseline condition) at the following crossings:

- Herndon Avenue crossing (SR 99 northbound off-ramp/Herndon Avenue in the a.m. peak hour; Bryan Avenue/Herndon Avenue in the p.m. peak hour)
- Carnegie Avenue crossing (Bullard Avenue/Carnegie Avenue in the p.m. peak hour)
- Shaw Avenue crossing (SR 99 northbound ramps/Shaw Avenue in the a.m. peak hour)

Year 2010 plus Phase 1

Intersection Levels of Service

The proposed project would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or greater at LOS E and F) at the following study intersections:

- Parkway Drive/Herndon Avenue (additional delay ≥5 seconds to LOS F in a.m. and p.m.)
- SR 99 southbound off-ramp/Herndon Avenue (additional delay ≥5 seconds to LOS F in a.m. and p.m.)
- SR 99 northbound off-ramp/Herndon Avenue (additional delay ≥5 seconds to LOS F in a.m. and p.m.)
- Weber Avenue – Phase 1 Secondary Access/Herndon Avenue (additional delay ≥5 seconds to LOS F in p.m.)
- Bryan Avenue/Herndon Avenue (LOS E to F in a.m.; LOS D to F in p.m.)
- Hayes Avenue/Herndon Avenue (LOS B to E in p.m.)
- Polk Avenue/Herndon Avenue (LOS C to E in p.m.)
- Milburn Avenue/Herndon Avenue (LOS D to E in p.m.)
- Brawley Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS F in a.m. and p.m.)
- Marks Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS E in a.m.; LOS E to F in p.m.)
- West Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS F in p.m.)

- Palm Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS E and F in a.m. and p.m., respectively)
- Grantland Avenue/Parkway Drive (additional delay ≥5 seconds to LOS F in a.m. and p.m.)
- Hayes Avenue/Palo Alto Avenue (LOS A to F in p.m.)
- Grantland Avenue/Bullard Avenue (LOS D to E in a.m.; LOS C to E in p.m.)
- Bullard Avenue/Carnegie Avenue (additional delay ≥5 seconds in p.m.)
- Golden State Boulevard/Carnegie Avenue (additional delay ≥5 seconds in a.m. and p.m.)
- Grantland Avenue/Barstow Avenue (LOS C to F in p.m.)

Queuing Analysis

The addition of Phase 1 traffic to the 2010 baseline condition would create new significant queues and/or exacerbate significant baseline queues by more than one vehicle (or 25 feet) that would exceed a storage lane's capacity during the weekday peak hours:

- SR 99 southbound off-ramp/Herndon Avenue (SBL and SBR in both peak hours)
- SR 99 northbound off-ramp/Herndon Avenue (NBL in both peak hours)
- Golden State Boulevard/Herndon Avenue (SBL and WBR in both peak hours; WBL in p.m. peak hour)
- Bryan Avenue/Herndon Avenue (NBL, EBL, and WBL in both peak hours; NBR, SBL, and SBR in p.m. peak hour; and EBR in a.m. peak hour)
- Polk Avenue/Herndon Avenue (WBL in p.m. peak hour)
- Milburn Avenue/Herndon Avenue (SBL, SBR EBL, and WBR in p.m. peak hour)
- Brawley Avenue/Herndon Avenue (NBL, NBR, and WBL in both peak hours)
- Marks Avenue/Herndon Avenue (NBR, SBL, and EBL in both peak hours; and SBR and EBR in p.m. peak hour)
- West Avenue/Herndon Avenue (NBR in both peak hours)
- Palm Avenue/Herndon Avenue (SBR and EBL in both peak hours; WBR in a.m. peak hour)
- Blackstone Avenue/Herndon Avenue (SBR in both peak hours)
- Grantland Avenue/Parkway Drive (NBL and NBR in both peak hours)
- Bryan Avenue/Palo Alto Avenue (SBL in a.m. peak hour; and EBL in p.m. peak hour)
- Palm Avenue/Bullard Avenue (NBL, NBR, SBR, and EBL in p.m. peak hour; and SBL and WBL in both peak hours)
- SR 99 southbound ramps/Shaw Avenue (NBR and WBL in both peak hours)
- SR 99 northbound ramps/Shaw Avenue (SBR in p.m. peak hour)
- Golden State Boulevard/Shaw Avenue (NBR, SBL, and WBL in both peak hours)
- Brawley Avenue/Shaw Avenue (SBL and WBR in p.m. peak hour)
- Marks Avenue/Shaw Avenue (NBL and EBL in p.m. peak hour; NBR in a.m. peak hour)

- West Avenue/Shaw Avenue (NBL, EBL, and WBL in p.m. peak hour; NBR in a.m. peak hour)
- SR 99 southbound ramps/Ashlan Avenue (NBR in both peak hours)
- SR 99 northbound ramps/Ashlan Avenue (NBL, NBR, and SBR in p.m. peak hour; and EBL and WBR in both peak hours)

Roadway Level of Service Analysis

The addition of the Phase 1 trips to the following roadway segments would be considered a significant impact since the LOS changes from satisfactory conditions (LOS D or better) in 2010 Baseline condition to unsatisfactory (i.e. LOS E or F) levels with the addition of Phase 1 traffic:

- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (LOS C to D eastbound p.m.)
- Herndon Avenue: Golden State Boulevard to Weber Avenue (LOS D E eastbound a.m.; LOS E to F westbound a.m.; and LOS D to F westbound p.m.)
- Herndon Avenue: west of Bryan Avenue (LOS D to F eastbound a.m.)
- Herndon Avenue: Bryan Avenue to Hayes Avenue (LOS D to F westbound both peak hours; LOS E to F eastbound p.m.)
- Herndon Avenue: east of Hayes Avenue (LOS D to F eastbound p.m.; LOS C to LOS F westbound p.m. peak hour)
- Herndon Avenue: west of Polk Avenue (LOS D to LOS F both directions p.m.)
- Herndon Avenue: Polk Avenue to Milburn Avenue (LOS D to E eastbound a.m.; LOS E to F both directions p.m.)
- Herndon Avenue: Blythe Avenue to Brawley Avenue (LOS E to F eastbound p.m.)
- Herndon Avenue: Brawley Avenue to Marks Avenue (LOS D to E westbound a.m.)
- Herndon Avenue: Marks Avenue to West Avenue (LOS D to E eastbound p.m.)
- Herndon Avenue: Palm Avenue to Blackstone Avenue (LOS D to E eastbound a.m.; LOS E to F westbound p.m.)
- Golden State Boulevard: south of Herndon Avenue (LOS D to E southbound p.m.)
- Grantland Avenue: Parkway Drive to Bullard Avenue (LOS D to E northbound a.m. and southbound p.m.)
- Ashlan Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS E to F eastbound p.m.)

Freeway Level of Service Analyses

Mainline Levels of Service

All study segments of SR 99 will continue to operate with unsatisfactory conditions (LOS D or worse). In the a.m. peak hour, the segment of Avenue 7 to Herndon Avenue in the southbound direction is forecast to continue to operate with unsatisfactory LOS. However, addition of Phase 1 trips to SR 99 would create a significant impact to the southbound freeway segment of Shaw Avenue to Ashlan Avenue in the a.m. peak hour.

Weaving Section Levels of Service

Addition of Phase 1 traffic to SR 99 would not create a new significant impact. However, since both study weaving sections are forecast to operate with unsatisfactory LOS (LOS D or below) in the 2010 baseline condition, Phase 1 would contribute to those already impacted weaving sections.

At-Grade Railroad Crossing Analysis

The addition of Phase 1 traffic would cause new queuing impacts (i.e., new impacts to adjacent major intersections from the baseline condition) at the following crossings:

- Herndon Avenue crossing (Bryan Avenue/Herndon Avenue in the p.m. peak hour)

Year 2012 plus Phases 1 and 2

Intersection Levels of Service

The following study intersections would be significantly impacted by the addition of Phases 1 and 2 to 2012 baseline traffic. Therefore, the proposed project would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or more at LOS E or F) at the following study intersections:

- Golden State Boulevard/Herndon Avenue (LOS C to E in p.m.)
- Secondary Phase 1 access (former Weber Avenue)/Herndon Avenue (LOS C to F in p.m.)
- Bryan Avenue/Herndon Avenue (LOS C to E in p.m.)
- Milburn Avenue/Herndon Avenue (LOS D to E in p.m.)
- Brawley Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS E in p.m.)
- Marks Avenue/Herndon Avenue (LOS D to E in p.m.)
- Palm Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS F in p.m.)
- Polk Avenue/Sierra Avenue (LOS B to F in p.m.)
- Grantland Avenue/Bullard Avenue (LOS E to F in a.m., LOS D to F in p.m.)
- Dante Avenue/Bullard Avenue (LOS C to F in p.m.)
- Palm Avenue/Bullard Avenue (LOS C to F in a.m.; LOS D to E in p.m.)
- Grantland Avenue/Barstow Avenue (LOS C to F in p.m.)
- SR 99 southbound ramps/Shaw Avenue (LOS E to F in a.m.; LOS C to D in p.m.)
- Golden State Boulevard/Shaw Avenue (additional delay ≥5 seconds to LOS F in p.m.)
- Brawley Avenue/Shaw Avenue (additional delay ≥5 seconds to LOS E in p.m.)
- Marks Avenue/Shaw Avenue (LOS D to LOS E in p.m.)
- SR 99 southbound ramps/Ashlan Avenue (additional delay ≥5 seconds to LOS E in a.m.)

Queuing Analysis

The addition of Phases 1 and 2 traffic to the 2012 baseline condition would create new significant queues and/or exacerbate significant baseline queues by more than one vehicle (or 25 feet), and that would exceed a storage lane's capacity during the weekday peak hours:

- Parkway Drive/Herndon Avenue (NBR and WBL in p.m.)
- SR 99 northbound off-ramp/Herndon Avenue (NBR both peak hours)
- Golden State Boulevard/Herndon Avenue (NBL, SBL, and WBL in p.m.; WBR in both peak hours)
- Bryan Avenue/Herndon Avenue (NBL and EBL in both peak hours; SBR and EBR in p.m.)
- Milburn Avenue/Herndon Avenue (SBL, EBL, and WBR in p.m.; SBR in both peak hours)
- Brawley Avenue/Herndon Avenue (NBL and NBR in both peak hours; SBL in a.m.; EBR and WBL in p.m.)
- Marks Avenue/Herndon Avenue (NBR in both peak hours; SBL, SBR, EBL, and EBR in p.m.)
- West Avenue/Herndon Avenue (NBR and SBL in both peak hours)
- Palm Avenue/Herndon Avenue (NBL and SBL in p.m.; SBR and EBL in both peak hours; and WBR in a.m.)
- Blackstone Avenue/Herndon Avenue (SBR in both peak hours; EBR and WBR in p.m.)
- Bryan Avenue/Palo Alto Avenue (NBL in p.m.; SBL in a.m.)
- Bullard Avenue/Carnegie Avenue (NBL and EBL both peak hours; EBR in p.m.)
- Golden State Boulevard/Carnegie Avenue (NBR in p.m.)
- Palm Avenue/Bullard Avenue (NBL, NBR, SBR, EBL, and WBL in p.m.; SBL in both peak hours)
- SR 99 southbound ramps/Shaw Avenue (EBR in a.m.; WBL in both peak hours)
- SR 99 northbound ramps/Shaw Avenue (SBR and EBL in both peak hours)
- Golden State Boulevard/Shaw Avenue (NBR, SBL, and WBL in both peak hours)
- Brawley Avenue/Shaw Avenue (SBL and WBR in p.m.)
- Marks Avenue/Shaw Avenue (NBL, SBR, and EBL in p.m.; NBR in a.m.)
- West Avenue/Shaw Avenue (NBR in a.m.)
- SR 99 southbound ramps/Ashlan Avenue (NBR in both peak hours)
- SR 99 northbound ramps/Ashlan Avenue (NBL, EBL, and WBR in both peak hours; NBR and SBR in p.m.)

Roadway Level of Service Analysis

The addition of the Phases 1 and 2 trips to the following roadway segments would be considered a significant impact since the LOS changes from satisfactory conditions (LOS D or better) in 2012 Baseline condition to unsatisfactory (i.e. LOS E or F) levels with the addition of traffic from Phases 1 and 2:

- Herndon Avenue: Parkway Drive to SR 99 southbound off-ramp (LOS C to F eastbound p.m.)
- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (LOS C to F eastbound p.m.)
- Herndon Avenue: Golden State Boulevard to Secondary Phase 1 access (former Weber Avenue) (LOS C to LOS F eastbound p.m.)
- Herndon Avenue: Secondary Phase 1 access (former Weber Avenue to Bryan Avenue (LOS C to F eastbound p.m.; LOS C to E westbound p.m.)
- Herndon Avenue: Brawley Avenue to Marks Avenue (LOS D to E eastbound a.m.; LOS E to F eastbound p.m.)
- Herndon Avenue: Marks Avenue to West Avenue (LOS D to F eastbound p.m.)
- Herndon Avenue: West Avenue to Palm Avenue (LOS D to F westbound a.m.)
- Herndon Avenue: Palm Avenue to Blackstone Avenue (LOS D to F eastbound p.m.)
- Parkway Drive: Herndon Avenue to Grantland Avenue (LOS C to F northbound p.m.)
- Sierra Avenue: Bryan Avenue to Polk Avenue (LOS C to F westbound p.m.)
- Golden State Boulevard: Herndon Avenue to Veterans Boulevard (LOS C to F northbound p.m.; LOS D to F southbound p.m.)
- Golden State Boulevard: Carnegie Avenue to Shaw Avenue (LOS D to E southbound p.m.)
- Golden State Boulevard: Shaw Avenue to Ashlan Avenue (LOS D to F southbound p.m.)
- Shaw Avenue: Golden State Boulevard to Brawley Avenue (LOS D to F eastbound both peak hours; LOS C to F westbound a.m.; LOS E to F westbound p.m.)
- Shaw Avenue: Brawley Avenue to Marks Avenue (LOS D to E eastbound p.m.; LOS E to F westbound p.m.)
- Grantland Avenue: Parkway Drive to Bullard Avenue (LOS D to F northbound both peak hours; LOS D to F southbound p.m.)
- Grantland Avenue: Bullard Avenue to Barstow Avenue (LOS D to F southbound p.m.)
- Carnegie Avenue: Golden State Boulevard to Bullard Avenue (LOS D to F westbound a.m.; LOS C to F westbound p.m.)

Freeway Level of Service Analyses

Mainline Levels of Service

SR 99 between Dakota Avenue and Ashlan Avenue will continue to operate with unsatisfactory conditions (LOS D or worse) during the a.m. and p.m. peak hours. The addition of Phases 1 and 2 traffic to the freeway segments would not cause any new significant impacts, but would contribute forecast baseline impacts.

Weaving Section Levels of Service

The addition of Phases 1 and 2 traffic to SR 99 would create a new significant impact at SR 99 southbound, from Herndon Avenue to Shaw Avenue (LOS E to F in the p.m. peak hour). However, since both study weaving sections are forecast to operate with unsatisfactory LOS (LOS D or below) in the 2012 baseline condition, Phases 1 and 2 would contribute to those already impacted weaving sections.

At-Grade Railroad Crossing Analysis

The addition of Phases 1 and 2 traffic would cause new queuing impacts (i.e., new impacts to adjacent major intersections from the baseline condition) at the following crossings:

- Herndon Avenue crossing (Bryan Avenue/Herndon Avenue in the p.m. peak hour)

Year 2017 plus Phases 1, 2, 3, and 4

Intersection Levels of Service

The following study intersections would be significantly impacted by the addition of Phases 1 through 4 to 2017 baseline traffic. Therefore, the proposed project would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or more at LOS E or F) at the following study intersections:

- SR 99 northbound ramps/Herndon Avenue (LOS C to F in p.m.)
- Palm Avenue/Herndon Avenue (LOS D to E in a.m., and additional delay ≥5 seconds to LOS F in p.m.)
- Hayes Avenue/Palo Alto Avenue (LOS C to E in p.m.)
- Bryan Avenue/Veterans Boulevard (LOS C to F in p.m.)
- Golden State Boulevard/Veterans Boulevard (LOS E to F in p.m.)
- Carnegie Avenue/Bullard Avenue (additional delay to LOS F in p.m.)
- Golden State Boulevard/Carnegie Avenue (additional delay ≥5 seconds to LOS F in p.m.)
- Palm Avenue/Bullard Avenue (additional delay to LOS F in p.m.)
- Golden State Boulevard/Shaw Avenue (additional delay ≥5 seconds to LOS F in p.m.)
- SR 99 southbound ramps/Ashlan Avenue (LOS E to LOS F in p.m.)
- SR 99 northbound ramps/Ashlan Avenue (LOS D to E in p.m.)

Queuing Analysis

The addition of Phases 1 through 4 traffic to the 2017 baseline condition would create new significant queues and/or exacerbate significant baseline queues by more than one vehicle (or 25 feet), and that would exceed a storage lane's capacity during the weekday peak hours:

- Golden State Boulevard/Herndon Avenue (EBR and WBL in p.m.)
- Polk Avenue/Herndon Avenue (NBL in p.m.)
- Milburn Avenue/Herndon Avenue (SBR in both peak hours)

- Brawley Avenue/Herndon Avenue (NBL and WBL in both peak hours; NBR in a.m.; EBR in p.m.)
- Marks Avenue/Herndon Avenue (NBR and EBR in a.m.; SBR and WBR in p.m.; EBL in both peak hours)
- West Avenue/Herndon Avenue (NBR in a.m.; SBL in both peak hours)
- Palm Avenue/Herndon Avenue (NBL, SBR, and EBL in both peak hours; WBR in a.m.)
- Blackstone Avenue/Herndon Avenue (WBR in both peak hours; SBR in p.m.)
- Bryan Avenue/Palo Alto Avenue (NBL in both peak hours; SBL in a.m.; EBL and WBL in p.m.)
- Hayes Avenue/Veterans Boulevard (EBL in p.m.)
- Bryan Avenue/Veterans Boulevard (NBL, SBR, and EBL in p.m.; and EBR in both peak hours)
- Bryan Avenue/Sierra Avenue (SBL, EBL, and WBL in p.m.)
- Golden State Boulevard/Veterans Boulevard (NBL and EBL in both peak hours; SBL in p.m.)
- Bullard Avenue/Carnegie Avenue (NBL and EBL in both peak hours; EBR in p.m.)
- Golden State Boulevard/Carnegie Avenue (NBR in both peak hours)
- Palm Avenue/Bullard Avenue (WBL in a.m.; NBL, NBR, SBL, SBR, and EBL in p.m.)
- Bryan Avenue (West)/Veterans Boulevard (SBL and WBR in both peak hours)
- Golden State Boulevard/Shaw Avenue (NBR, SBL, WBL, and WBR in both peak hours)
- Brawley Avenue/Shaw Avenue (SBL in p.m.)
- Marks Avenue/Shaw Avenue (NBR and SBR in both peak hours; NBL, EBL, WBL in p.m.)
- West Avenue/Shaw Avenue (NBR in a.m.)
- SR 99 southbound ramps/Ashlan Avenue (NBR in both peak hours; SBL, EBR, and WBL in p.m.)
- SR 99 northbound ramps/Ashlan Avenue (EBL in both peak hours; NBR, SBL, SBR, and WBR in p.m.)

Roadway Level of Service Analysis

The addition of the Phases 1 through 4 trips to the following roadway segments would be considered a significant impact since the LOS changes from satisfactory conditions (LOS D or better) in 2017 Baseline condition to unsatisfactory (i.e. LOS E or F) levels with the addition of traffic from Phases 1 through 4:

- Herndon Avenue: Parkway Drive to SR 99 southbound ramps (LOS C to LOS F westbound p.m.)
- Herndon Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS C to LOS F westbound p.m.)
- Herndon Avenue: SR 99 northbound ramps to Golden State Boulevard (LOS D to LOS F eastbound a.m.; LOS C to F eastbound and westbound p.m.)

- Herndon Avenue: Brawley Avenue to Marks Avenue (LOS D to LOS E eastbound a.m.; LOS D to LOS E westbound p.m.)
- Herndon Avenue: Marks Avenue to West Avenue (LOS D to LOS E eastbound a.m.)
- Parkway Drive: Herndon Avenue to Grantland Avenue (LOS C to LOS F westbound p.m.)
- Veterans Boulevard: Golden State Boulevard to Bryan Avenue (LOS C to LOS F eastbound a.m.; LOS D to LOS F eastbound p.m.)
- Veterans Boulevard: SR 99 northbound ramps to Golden State Boulevard (LOS D to LOS F eastbound p.m.)
- Veterans Boulevard: SR 99 southbound ramps to SR 99 northbound ramps (LOS D to LOS F eastbound p.m.)
- Veterans Boulevard: Bryan Avenue to SR 99 southbound ramps (LOS D to LOS F eastbound a.m.; LOS D to LOS F eastbound p.m.)
- Sierra Avenue: Bryan Avenue to Polk Avenue (LOS C to F westbound a.m.; LOS C to F eastbound p.m.)
- Polk Avenue: Herndon Avenue to Sierra Avenue (LOS C to E northbound p.m.; LOS C to F southbound p.m.)
- Golden State Boulevard: Herndon Avenue to Veterans Boulevard (LOS E to F southbound a.m.; LOS C to F northbound p.m.; LOS D to F southbound p.m.)
- Golden State Boulevard: Veterans Boulevard to Carnegie Avenue (LOS C to F northbound a.m.)
- Golden State Boulevard: Shaw Avenue to Ashlan Avenue (LOS D to E southbound a.m.; LOS D to F southbound p.m.)
- Shaw Avenue: west of SR 99 southbound ramps (LOS D to F eastbound p.m.)
- Shaw Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS D to F westbound a.m.)
- Shaw Avenue: Golden State Boulevard to Brawley Avenue (LOS D to F westbound p.m.)
- Shaw Avenue: Brawley Avenue to Marks Avenue (LOS E to F westbound p.m.)
- Palm Avenue: Herndon Avenue to Bullard Avenue (LOS D to E westbound a.m.)
- Carnegie Avenue: Golden State Boulevard to Bullard Avenue (LOS E to F eastbound p.m.; LOS D to F westbound p.m.)
- Ashlan Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS E to F westbound p.m.)

Freeway Level of Service Analyses

Mainline Levels of Service

The addition of Phases 1 through 4 trips to SR 99 would create a significant impact to the following segments:

- SR 99 northbound between Shaw Avenue and Ashlan Avenue (LOS C to LOS D in the a.m. peak hour)
- SR 99 northbound between Ashlan Avenue and Dakota Avenue (LOS C to LOS D in the a.m. peak hour)
- SR 99 southbound between Herndon Avenue and Veterans Boulevard (LOS C to LOS D in the p.m. peak hour)
- SR 99 southbound between Veterans Boulevard to Shaw Avenue (LOS C to LOS E in the p.m. peak hour)

Weaving Section Levels of Service

The addition of Phases 1, 2, 3, and 4 traffic to SR 99 would create new significant impacts at the following weaving sections:

- SR 99 northbound: Shaw Avenue to Veterans Boulevard (LOS B to D in the a.m. peak hour; LOS E to F in the p.m. peak hour)
- SR 99 southbound: Herndon Avenue to Veterans Boulevard (LOS C to E in the p.m. peak hour).

At-Grade Railroad Crossing Analysis

The addition of Phases 1, 2, 3, and 4 traffic would not cause new queuing impacts (i.e., new impacts to adjacent major intersections from the baseline condition) at the study area crossings.

Year 2019 plus Phases 1, 2, 3, 4, and 5

Intersection Levels of Service

The following study intersections would be significantly impacted by the addition of Phase 5 to 2019 baseline traffic. Therefore, the proposed project would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or more at LOS E or F) at the following study intersections:

- SR 99 northbound ramps/Herndon Avenue (LOS D to F in the p.m.)
- Polk Avenue/Herndon Avenue (LOS C to E in p.m.)
- Bryan Avenue/Veterans Boulevard (LOS B to E in a.m.; LOS C to F in the p.m.)
- Golden State Boulevard/Veterans Boulevard (LOS E in the a.m.; additional delay ≥5 seconds to LOS F in p.m.)
- SR 99 northbound ramps/Veterans Boulevard (LOS B to F in p.m.)
- SR 99 northbound ramps/Ashlan Avenue (LOS D to E in p.m.)

Queuing Analysis

The addition of Phases 1 through 5 traffic to the 2019 baseline condition would create new significant queues and/or exacerbate significant baseline queues by more than one vehicle (or 25 feet), and that would exceed a storage lane's capacity during the weekday peak hours:

- Golden State Boulevard/Herndon Avenue (WBL in p.m.)
- Bryan Avenue/Herndon Avenue (SBR in p.m.)
- Milburn Avenue/Herndon Avenue (SBR in both; WBR in p.m.)
- Brawley Avenue/Herndon Avenue (NBL and EBR in p.m.; NBR in a.m.; WBL in both)
- Marks Avenue/Herndon Avenue (SBR and WBR in p.m.; EBL in both; EBR in a.m.)
- West Avenue/Herndon Avenue (NBR and SBL in a.m.)
- Palm Avenue/Herndon Avenue (NBL and EBL in p.m.; SBR in both; WBL in a.m.)
- Blackstone Avenue/Herndon Avenue (WBR in a.m.; SBR in p.m.)
- Bryan Avenue/Palo Alto Avenue (NBL in both; SBL in a.m.; EBL and WBL in p.m.)
- Hayes Avenue/Veterans Boulevard (EBL in p.m.)
- Bryan Avenue/Veterans Boulevard (NBL, SBR, EBL, and EBR in both peak hours)
- Bryan Avenue/Sierra Avenue (NBL and SBR in a.m.; SBL in p.m.; EBL in both)
- Golden State Boulevard/Veterans Boulevard (NBL and EBL in both; SBL and WBL in p.m.)
- Bullard Avenue/Carnegie Avenue (NBL in both)
- Golden State Boulevard/Carnegie Avenue (NBR in p.m.)
- Palm Avenue/Bullard Avenue (NBR, SBL, SBR, and EBL in p.m.; WBL in a.m.)
- Bryan Avenue (West)/Veterans Boulevard (SBL and WBR in both)
- Golden State Boulevard/Shaw Avenue (NBR in both; SBL, WBL, and WBR in p.m.)
- Brawley Avenue/Shaw Avenue (SBL in p.m.)
- Marks Avenue/Shaw Avenue (NBL, NBR, and EBL in p.m.; SBR in both)
- SR 99 southbound ramps/Ashlan Avenue (NBR, EBR, and WBL in p.m.)
- SR 99 northbound ramps/Ashlan Avenue (SBL, SBR, and WBR in p.m.)

Roadway Level of Service Analysis

The addition of the Phases 1, 2, 3, 4, and 5 trips to the following roadway segments would be considered a significant impact since the LOS changes from satisfactory conditions (LOS D or better) in 2019 baseline condition to unsatisfactory (i.e. LOS E or F) levels with the addition of traffic from Phases 1, 2, 3, 4, and 5:

- Herndon Avenue: Parkway Drive to SR 99 southbound ramps (LOS C to LOS F eastbound p.m.)
- Herndon Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS C to LOS F eastbound p.m.)

- Herndon Avenue: SR 99 northbound ramps to Golden State Boulevard (LOS D to F in eastbound a.m.; LOS D to F in westbound p.m.; LOS C to F in eastbound p.m.)
- Herndon Avenue: Blythe Avenue to Brawley Avenue (LOS D to F in eastbound p.m.)
- Herndon Avenue: Brawley Avenue to Marks Avenue (LOS D to F in eastbound p.m.)
- Parkway Drive: Herndon Avenue to Grantland Avenue (LOS D to LOS F westbound p.m.)
- Veterans Boulevard: Golden State Boulevard to Bryan Avenue (LOS C to F eastbound a.m.; LOS D to F eastbound p.m.)
- Veterans Boulevard: SR 99 northbound ramps to Golden State Boulevard (LOS D to F eastbound a.m.; LOS D to E westbound a.m.)
- Veterans Boulevard: SR 99 southbound ramps to SR 99 northbound ramps (LOS D to E eastbound a.m.; LOS D to F eastbound p.m.)
- Veterans Boulevard: Bryan Avenue (West) to SR 99 southbound ramps (LOS E to F eastbound a.m.)
- Sierra Avenue: Bryan Avenue to Polk Avenue (LOS D to F westbound a.m.; LOS C to F eastbound p.m.)
- Polk Avenue: Herndon Avenue to Sierra Avenue (LOS C to LOS F eastbound and westbound p.m.)
- Golden State Boulevard: Herndon Avenue to Veterans Boulevard (LOS C to LOS F northbound and southbound p.m.)
- Golden State Boulevard: Veterans Boulevard to Carnegie Avenue (LOS D to F northbound a.m.)
- Golden State Boulevard: Carnegie Avenue to Shaw Avenue (LOS C to E northbound a.m.)
- Golden State Boulevard: Shaw Avenue to Ashlan Avenue (LOS D to F southbound a.m.)
- Shaw Avenue: west of SR 99 southbound ramps (LOS D to F eastbound p.m.)
- Shaw Avenue: Golden State Boulevard to Brawley Avenue (LOS D to LOS F westbound p.m.)
- Shaw Avenue: Brawley Avenue to Marks Avenue (LOS D to E eastbound and westbound p.m.)
- Carnegie Avenue: Golden State Boulevard to Bullard Avenue (LOS D to LOS E eastbound a.m.; LOS E to F eastbound p.m.; LOS D to F westbound p.m.)
- Ashlan Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS C to D westbound a.m.; LOS E to F westbound p.m.)

Freeway Level of Service Analyses

Mainline Levels of Service

The addition of Phases 1, 2, 3, 4, and 5 trips to SR 99 would create a significant impact to the following segments:

- SR 99 northbound between Shaw Avenue and Ashlan Avenue (LOS C to LOS D in the a.m. peak hour)
- SR 99 northbound between Ashlan Avenue and Dakota Avenue (LOS C to LOS D in the a.m. peak hour)
- SR 99 southbound between Shaw Avenue and Ashlan Avenue (LOS C to LOS D in the a.m. peak hour)
- SR 99 southbound between Herndon Avenue to Veterans Boulevard (LOS C to LOS D in the p.m. peak hour)

Weaving Section Levels of Service

The addition of Phases 1, 2, 3, 4, and 5 traffic to SR 99 would create new significant impacts at the following weaving sections:

- SR 99 northbound: Shaw Avenue to Veterans Boulevard (LOS C to D in the a.m. peak hour; LOS E to F in the p.m. peak hour)
- SR 99 southbound: Herndon Avenue to Veterans Boulevard (LOS C to D in the p.m. peak hour)
- SR 99 southbound: Veterans Boulevard to Shaw Avenue (LOS D to E in the a.m. peak hour)

At-Grade Railroad Crossing Analysis

The addition of Phases 1, 2, 3, 4, and 5 traffic would not cause new queuing impacts (i.e., new impacts to adjacent major intersections from the baseline condition) at the study area crossings.

Buildout Year 2025 plus Master Plan

Intersection Levels of Service

The following study intersections would be significantly impacted by the addition of the proposed Master Plan (Phases 1 through 5) to 2025 baseline traffic. Therefore, the proposed project would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay ≥5 seconds at LOS F) at the following study intersections:

- SR 99 northbound off-ramp/Herndon Avenue (LOS A to F in p.m.)
- Polk Avenue/Herndon Avenue (LOS D to F in p.m.)
- Palm Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS F in p.m.)
- Hayes Avenue/Palo Alto Avenue (LOS D to E in a.m.; LOS E to F in p.m.)
- Veterans Boulevard/Bryan Avenue (LOS C to F in p.m.)

- Golden State Boulevard/Veterans Boulevard (LOS E to F in p.m.)
- SR 99 northbound ramps/Veterans Boulevard (LOS C to F in p.m.)
- Bullard Avenue/Carnegie Avenue (LOS B to F in p.m.)
- Golden State Boulevard/Carnegie Avenue (LOS C to E in a.m.; LOS E to F in p.m.)
- SR 99 northbound Ramps/Shaw Avenue (LOS C to D in a.m.; additional delay ≥5 seconds to LOS F in p.m.)
- Golden State Boulevard/Shaw Avenue (additional delay ≥5 seconds to LOS F in p.m.)

Queuing Analysis

The addition of Master Plan traffic to 2025 baseline condition would create new significant queues and/or exacerbate significant baseline queues by more than one vehicle (or 25 feet), and that would exceed a storage lane's capacity during the weekday peak hours:

- Veterans Boulevard/Herndon Avenue (WBL in p.m.)
- Polk Avenue/Herndon Avenue (NBR in both peak hours; and SBL in p.m.)
- Milburn Avenue/Herndon Avenue (SBR in both peak hours; EBL in a.m.)
- Brawley Avenue/Herndon Avenue (NBL, NBR, and EBR in p.m.)
- Marks Avenue/Herndon Avenue (NBR in both peak hours; SBR and EBR in p.m.)
- Palm Avenue/Herndon Avenue (SBR and EBL in both peak hours; WBR in a.m.)
- Blackstone Avenue/Herndon Avenue (SBR in p.m.; WBR in both peak hours)
- Hayes Avenue/Veterans Boulevard (EBL in p.m.)
- Bryan Avenue/Veterans Boulevard (EBL in p.m.)
- Golden State Boulevard/Veterans Boulevard (NBL, SBL, and EBL in p.m.)
- Bullard Avenue/Carnegie Avenue (NBL and SBR in p.m.)
- Golden State Boulevard/Carnegie Avenue (NBR and EBL in both peak hours; WBL and WBR in p.m.)
- Palm Avenue/Bullard Avenue (NBL and SBR in p.m.; EBL in a.m.; WBL in both peak hours)
- Bryan Avenue (west)/Veterans Boulevard (SBL in p.m.; WBR in both peak hours)
- Golden State Boulevard/Shaw Avenue (SBR in both peak hours; SBL, WBL, and WBR in p.m.)
- Brawley Avenue/Shaw Avenue (SBL in p.m.)
- Marks Avenue/Shaw Avenue (NBL and EBL in p.m.; SBR in a.m.)
- SR 99 southbound ramps/Ashlan Avenue (NBR and SBL in both peak hours; WBL in p.m.)
- SR 99 northbound ramps/Ashlan Avenue (NBL and EBL in both peak hours; NBR, SBR, and WBR in. p.m.)

Roadway Level of Service Analysis

The addition of the Master Plan trips to the following roadway segments would be considered a significant impact since the LOS changes from satisfactory conditions (LOS D or better) in 2025

baseline condition to unsatisfactory (i.e. LOS E or F) levels with the addition of traffic from the Master Plan:

- Herndon Avenue: Parkway Drive to SR 99 southbound off-ramp (LOS D to F westbound in p.m.)
- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (LOS C to D westbound in a.m.; LOS D to F westbound in p.m.)
- Herndon Avenue: SR 99 northbound off-ramp to Golden State Boulevard (LOS D to F eastbound in both peak hours; LOS D to F westbound in p.m.)
- Herndon Avenue: Hayes Avenue to Veterans Boulevard (LOS C to F westbound in p.m.)
- Herndon Avenue: Polk Avenue to Milburn Avenue (LOS D to E both directions in a.m.; LOS D to F eastbound in p.m.)
- Herndon Avenue: Blythe Avenue to Brawley Avenue (LOS D to E eastbound in p.m.)
- Parkway Drive: Herndon Avenue to Grantland Avenue (LOS C to F southbound in p.m.)
- Veterans Boulevard: Golden State Boulevard to Bryan Avenue (LOS D to F eastbound in both peak hours)
- Veterans Boulevard: SR 99 northbound ramps to Golden State Boulevard (LOS D to F eastbound in a.m.; LOS D to E westbound in p.m.)
- Veterans Boulevard: SR 99 southbound ramps to SR 99 northbound ramps (LOS D to F both directions in a.m.; LOS D to F eastbound in p.m.)
- Veterans Boulevard: Bryan Avenue (west) to SR 99 southbound ramps (LOS D to F eastbound in p.m.)
- Sierra Avenue: Bryan Avenue to Polk Avenue (LOS C to F westbound in a.m.; LOS C to F eastbound in p.m.; LOS D to F westbound in p.m.)
- Polk Avenue: Herndon Avenue to Sierra Avenue (LOS D to F northbound in a.m.; LOS C to F southbound in p.m.)
- Golden Gate Boulevard: Carnegie Avenue to Shaw Avenue (LOS D to E northbound in p.m.)
- Shaw Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS D to F westbound in a.m.; LOS D to E eastbound in p.m.)
- Palm Avenue: Herndon Avenue to Bullard Avenue (LOS D to E southbound in p.m.)

Freeway Level of Service Analyses

Mainline Levels of Service

The addition of Master Plan trips to SR 99 would create a significant impact to the following segments:

- SR 99 northbound between Ashlan Avenue and Dakota Avenue (LOS C to LOS D in the a.m. peak hour)
- SR 99 southbound between Herndon Avenue and Veterans Boulevard (LOS C to LOS D in the a.m. peak hour)

Weaving Section Levels of Service

Addition of the Master Plan to SR 99 would create new significant impacts at the following weaving sections:

- SR 99 northbound: Shaw Avenue to Veterans Boulevard (LOS D to E in a.m.)
- SR 99 northbound: Veterans Boulevard to Herndon Avenue (LOS C to D in a.m.; LOS D to F in p.m.)
- SR 99 southbound: Herndon Avenue to Veterans Boulevard (LOS C to D in a.m.; LOS E to F in p.m.)
- SR 99 southbound: Veterans Boulevard to Shaw Avenue (LOS E to F in a.m.)

At-Grade Railroad Crossing Analysis

The addition of the Master Plan would cause new queuing impacts (i.e., new impacts to adjacent major intersections from the baseline condition) at the Carnegie Avenue crossing, specifically to the Bullard Avenue/Carnegie Avenue intersection during the p.m. peak hour.

On-Site Circulation, Access, Parking, Transit, and Schools

A detailed site plan has been developed for Phase 1 of the Master Plan. The site plan for Phase 1 provides details of: primary and secondary project access; internal roadway circulation, turn storage bay lengths, parking facilities, and location(s) of other planned transportation facilities such as bus turnouts and pedestrian sidewalks/circulation. Therefore, this section discusses the potential project-related impacts of Phase 1 of the Master Plan with respect to vehicular and pedestrian access, on-site circulation, parking demand and supply, and alternative transportation (i.e., transit, and pedestrian and bicycle facilities).

Since Phases 2A, 2B, 3, 4, and 5 are conceptual in nature (i.e., no detailed site plans are currently proposed), detailed on-site circulation and parking analyses have not been conducted. However, at the time detailed site plans are developed, the applicants of those Phases (2 through 5) will be required to prepare detailed on-site circulation and parking analyses.

Project Access

Vehicular access to Phase 1 of the Master Plan is provided via primary and secondary access driveways, either full access or right turn in/out only access, along Bryan Avenue, and a secondary right turn in/out driveway with left turn inbound-only access proposed on Herndon Avenue.

Vehicular and Emergency Access

Based on review of the site plan and review of the queuing analyses and the recommended mitigation measures at Bryan Avenue/Herndon Avenue and Bryan Avenue/Palo Alto Avenue, vehicular and emergency access to the Phase 1 site would be adequate and no significant impacts to access would occur.

On-Site Circulation

The proposed Phase 1 site plan will be reviewed by the City Planning and Public Works Departments. Both departments will require the site plan to conform to all City development standards to ensure uniformity and safety throughout the Phase 1 site. With adherence to the

City's development standards, on-site circulation within the Phase 1 site would have no significant impacts.

Pedestrian and Bicycle Circulation

The proposed Phase 1 site plan will be reviewed by the City Planning and Public Works Departments. Both departments will require the site plan to conform to all City development standards to ensure uniformity and safety throughout the Phase 1 site. With adherence to the City's development standards, pedestrian and bicycle circulation within the Phase 1 site would have no significant impacts.

Parking

Based on the City's parking rate of 4.5 spaces per 1,000 square feet for retail uses, and 10 spaces per 1,000 square feet for restaurant uses, the required parking spaces for Phase 1 would be 3,834 spaces. Based on the site plan, 3,834 spaces have been designed. This results in parking rates consistent with the City's Zoning Code. Therefore, there would be no parking impacts to Phase 1.

Transit

Based on the site plan, an FAX bus turnout is proposed south of Secondary Driveway 1, along the Phase 1 frontage. This bus turnout would serve the patrons of Phase 1. Pedestrian walkways will provide access to this bus turnout. As the site plan will be reviewed by FAX, all City and/or FAX design requirements will be adhered-to in order to obtain site plan design approval. The project applicant will work with City and FAX staff to determine whether the existing Route 45 or Route 22, or a new route, would be required to serve Phase 1 patrons, and future users of the entire Master Plan.

Potential Impacts to Adjacent Schools

In the vicinity of Phase 1, two existing schools, River Bluff Elementary School and Rio Vista Middle School, may be potentially impacted by Phase 1 since one of its primary driveway is at the intersection of Bryan Avenue/Palo Alto Avenue, one of the two intersections that provide access to the schools (the other intersection is Hayes Avenue/Palo Alto Avenue). Though, Palo Alto Avenue is not a designated roadway on the City's Circulation Element, it is included in the Fresno COG model as a collector road for the schools and adjacent residential subdivisions.

Review of the 2010 plus Phase 1 Roadway Segment Analysis indicates that the segment of Palo Alto Avenue, between Bryan Avenue and Hayes Avenue would operate at LOS A in the a.m. and p.m. peak hours without Phase 1. However, once Phase 1 is in operation, the roadway level of service would decrease from LOS A in both peak hours to LOS C in both peak hours. The City's LOS standard is LOS D; therefore addition of project traffic to Palo Alto Avenue would not create a significant impact.

However, based on observations of the morning peak hour of the schools, traffic is severely congested on Palo Alto Avenue. The traffic counts collected reflect a lower volume of cars because of the low travel speeds occurring in front of the schools. Because of that major congestion, it is likely that any traffic not related to the school traffic would avoid that segment of Palo Alto between 7:15 a.m. and 8:45 a.m. on weekday mornings, as well as the after school hours of the schools. Fortunately, the peak hours of the proposed shopping center at Phase 1 would

have different peak hours than those of the adjacent schools (usually midday or late afternoon on weekdays, while the school peak hours are early morning and early afternoon).

With that, Phase 1 traffic that would normally use Palo Alto during the school peak hours would likely be diverted away from Palo Alto, and would come in through the Bryan Avenue/Herndon Avenue intersection. In the future, with the development of Phase 2 of the Master Plan, Veterans Boulevard will be extended from Bryan Avenue to Herndon Avenue, and Bryan Avenue will be widened to its ultimate four-lane roadway width to Bullard Avenue. At that time, Phase 1 traffic would also have additional routes other than using Palo Alto Avenue during the schools' peak hours.

Furthermore, as noted above, at the Bryan Avenue/Palo Alto intersection, a traffic signal will be installed with raised curb islands to restrict eastbound and westbound traffic (to enter and exit Phase 1 from Palo Alto Avenue), and will also include full pedestrian phasing to accommodate potential students from the middle school and elementary school across the street. Similarly, full pedestrian phasing and crosswalk markings will be provided at the signalized intersection of Bryan Avenue/Herndon Avenue, Bryan Avenue/Anchor A driveway, and the future signalized intersection (in Phase 2) at Bryan Avenue/North Cresta Avenue. Phase 1 and the rest of the Master Plan (especially Phases 2A and 3) would also be required to fully construct bicycle and pedestrian facilities along Bryan Avenue consistent with the City's design standards. This would ensure adequate circulation of students that choose to travel along Bryan Avenue on their way to/from school.

Mitigation Measures

As noted in each traffic analysis for each project phase (Phases 1 through 5), the applicant(s) of Phases 1 through 5 would be required to pay the City's traffic impact fees for the Traffic Signal Mitigation Impact Fee (TSMI) and the Fresno Major Street Impact Fee (FMSI) which is a combination of the New Growth Area Major Street Impact Fee and the Citywide Regional Street Impact Fee.

For Caltrans facilities, the all Phases of the Master Plan 1 shall pay their fair-share contribution towards improvements to impacted Caltrans facilities noted in this TIS. The fair-share contribution shall be calculated per the February 2006 *Mutual Release and Settlement Agreement* between the City of Fresno and Caltrans District 6 (otherwise known as the "Interim Agreement"). This Interim Agreement provides guidance on the method for calculating a fair share to mitigate for impacts to State highways. Since the Master Plan will require a General Plan Amendment (GPA), and the GPA will increase trips over the existing use, the "Combined Formula" was used to calculate fair share. The Combined Formula is provided below:

$$P = (P1/F1) + (P2 - P1)/F2, \text{ where:}$$

P = fair share percentage
P1 = the higher of the a.m. or p.m. peak hour project trips without GPA
P2 = the higher of the a.m. or p.m. peak hour project trips with GPA
F1 = total 2025 corresponding future peak hour traffic without project
F2 = total 2025 corresponding future peak hour traffic with project

For facilities where no feasible mitigation measures could be provided, a finding of a significant unavoidable impact was determined.

2.0 INTRODUCTION

This report presents the Traffic Impact Study (TIS) prepared by DKS Associates (DKS) for the proposed Fresno El Paseo Project (proposed project) located in the northwest portion of the City of Fresno (City). The approximately 238 acre project site is generally bounded by Herndon Avenue to the north, Carnegie Avenue to the south, Bryan Avenue and Bullard Avenue to the east, and State Route 99 (SR 99) to the west. The proposed project would be developed in five phases over a period of nine years with Phase 1 projected to have an opening year of 2010. Buildout of Phase 1 would occur in 2010; Phase 2 (2A and 2B) in 2012; Phases 3 and 4 in 2017; and Phase 5 in 2019.

This TIS has been prepared based on the *City of Fresno Traffic Impact Study Report Guidelines* (October 2006), Caltrans' *Guide for the Preparation of Traffic Impact Studies* (December 2002), the Council of Fresno County Governments (Fresno COG) *Recommended Procedures for Using Traffic Projections from the Fresno COG Travel Model* (December 2002), and the California Environmental Quality Act (CEQA).

Purpose of the TIS and Study Objectives

The purpose of this TIS is to evaluate the traffic and circulation impacts of the proposed project. The study objectives of this TIS include:

1. Documentation and analysis of existing and future baseline traffic conditions in the vicinity of the project site.
2. Evaluation of the traffic impacts of the proposed development, by project phase, on the street network in the vicinity of the proposed project.
3. Assessment of project access and internal circulation.
4. Determination of additional circulation system features, system management actions, and mitigations needed to achieve the City's and Caltrans' level of service (LOS) requirements with implementation of the proposed project.

Site Location

The proposed development area is bounded generally by Herndon Avenue on the north, Bryan Avenue and Bullard Avenue on the east, Carnegie Avenue to the south, and SR 99 on the west, as shown in Figure 2-1. Golden State Boulevard traverses the overall site from north to south, and the Union Pacific Railroad (UPRR) runs adjacent to this major arterial.

The approximately 78 acre Phase 1 of the project is bounded by Herndon Avenue to the north, Phase 2A and the future Veterans Boulevard to the south, Bryan Avenue to the east, and Golden State Boulevard and the UPRR to the west. Phase 2, which consists of Phase 2A and 2B, is in the center of the project site. Phase 2A is approximately 23 acres and is bounded by Phase 1 to the north, the future Veterans Boulevard to the south, the future extension of Bryan Avenue to the east, and Golden State Boulevard and the UPRR tracks to the west. Phase 2B is approximately 73 acres and is bounded by an existing truck stop to the north, the future Veterans Boulevard to the south, Golden State Boulevard and the UPRR tracks to the east, and SR 99 to the west.

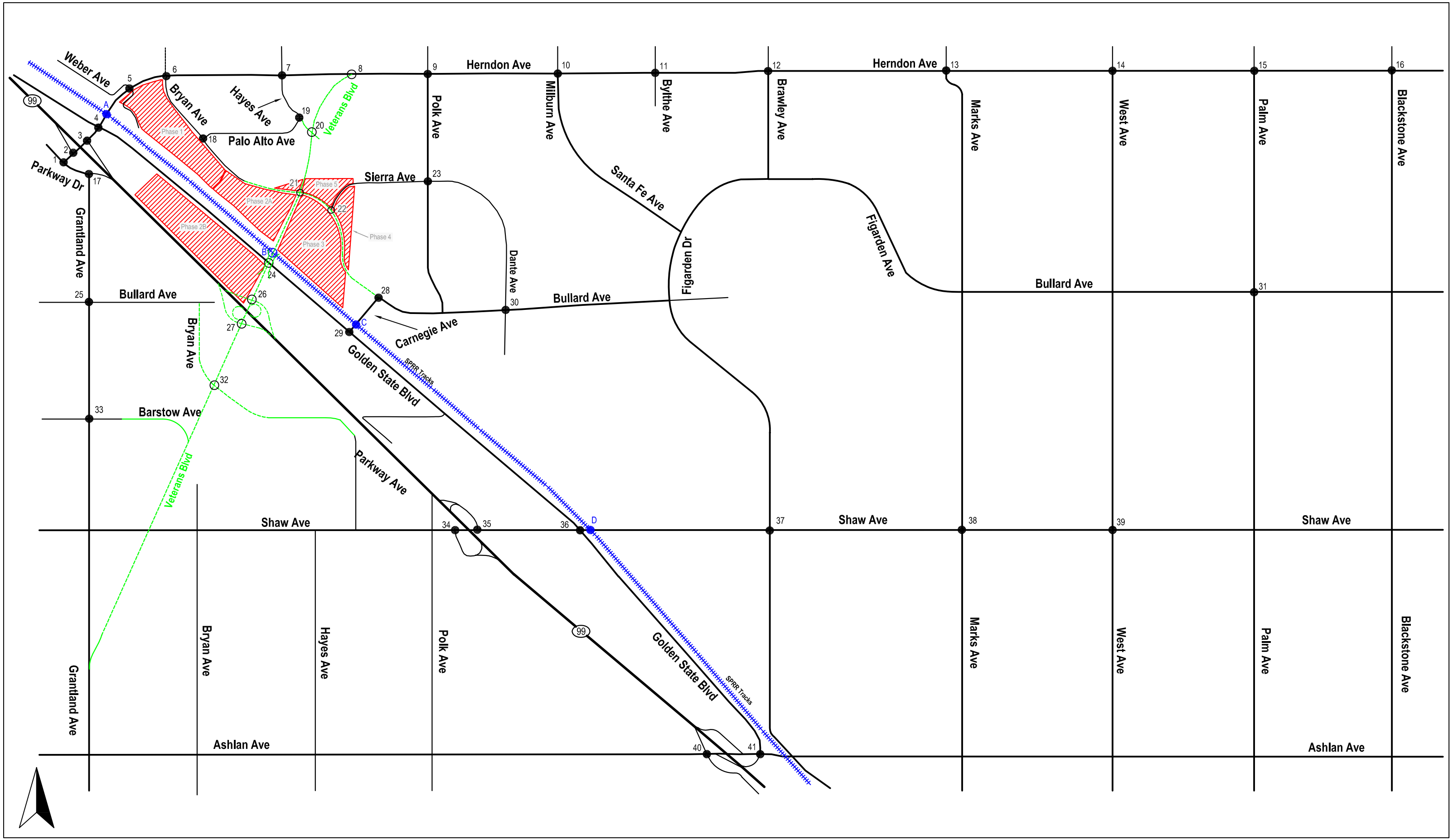

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Figure 2-1
Project Site Location and Study Area

Phase 3 is located in the southern portion of the project site on 45 acres and is bounded by the future Veterans Boulevard to the north, Carnegie Avenue to the south, the future extension of Bullard (Bryan) Avenue to the east, and Golden State Boulevard and the UPRR tracks to the west. Phase 4 is approximately eight (8) acres and is bounded by the future Veterans Boulevard to the north, the future extension of Sierra Avenue to the south, existing residential homes to the east, and the future extension of Bullard (Bryan) Avenue to the west. Finally, Phase 5, which is approximately 10 acres, is bounded by the future extension of Sierra Avenue to the north and east, existing residential homes to the south, and the future extension of Bullard (Bryan) Avenue to the west.

Regional access to all phases of the project would be provided by SR 99, located west of the project site; Herndon Avenue, located north of the project site; and the future Veterans Boulevard, which would run through the center of the project site. Local access would be provided by Bryan Avenue – Bullard Avenue, Palo Alto Avenue, Sierra Avenue, and Golden State Boulevard.

Study Area

Figure 2-1 also illustrates the intersections, roadways, freeway segments, and at-grade railroad crossings that have been analyzed in the TIS. The study area was determined based on consultation with the City Traffic Engineer and confirmed during the project's pre-scoping meeting with the City's Planning Department, Fresno County, Caltrans District 6, as well as telephone conversations with the Fresno County Council of Governments (COG). Subsequent to this meeting, the study area was further refined based on an initial Select Zone traffic model run of the project's primary Traffic Analysis Zone (TAZ) in the Fresno COG travel model.

Intersections

The following intersections have been analyzed in the TIS:

1. Parkway Drive/Herndon Avenue
2. SR 99 southbound ramps/Herndon Avenue
3. SR 99 northbound ramps/Herndon Avenue
4. Golden State Boulevard/Herndon Avenue
5. Weber Avenue/Herndon Avenue
6. Bryan Avenue/Herndon Avenue
7. Hayes Avenue/Herndon Avenue
8. Veterans Boulevard/Herndon Avenue (*future intersection*)
9. Polk Avenue/Herndon Avenue
10. Milburn Avenue/Herndon Avenue
11. Blythe Avenue/Herndon Avenue
12. Brawley Avenue/Herndon Avenue
13. Marks Avenue/Herndon Avenue
14. West Avenue/Herndon Avenue
15. Palm Avenue/Herndon Avenue
16. Blackstone Avenue/Herndon Avenue
17. Grantland Avenue/Parkway Drive

18. Bryan Avenue/Palo Alto Avenue
19. Hayes Avenue/Palo Alto Avenue
20. Veterans Boulevard/Hayes Avenue
21. Veterans Boulevard/Bryan Avenue – Bullard Avenue (*future intersection*)
22. Bryan Avenue/Sierra Avenue (*future intersection*)
23. Polk Avenue/Sierra Avenue
24. Golden State Boulevard/Veterans Boulevard (*future intersection*)
25. Grantland Avenue/Bullard Avenue
26. SR 99 northbound ramps/Veterans Boulevard (*future intersection*)
27. SR 99 southbound ramps/Veterans Boulevard (*future intersection*)
28. Carnegie Avenue/Bullard Avenue
29. Golden State Boulevard/Carnegie Avenue
30. Dante Avenue/Bullard Avenue
31. Palm Avenue/Bullard Avenue
32. Veterans Boulevard (west)/Bryan Avenue (*future intersection*)
33. Grantland Avenue/Barstow Avenue
34. SR 99 southbound ramps/Shaw Avenue
35. SR 99 northbound ramps/Shaw Avenue
36. Golden State Boulevard/Shaw Avenue
37. Figarden Drive/Shaw Avenue
38. Marks Avenue/Shaw Avenue
39. West Avenue/Shaw Avenue
40. SR 99 southbound ramps/Ashlan Avenue
41. SR 99 northbound ramps/Ashlan Avenue

Based on the study area list noted above, a total of 41 intersections would comprise the project study area. Of the 41 intersections, 34 currently exist and seven (7) are proposed to be constructed in the future, between 2010 and 2019. In addition, per the City's request, all study area intersections adjacent to Phase I (retail/commercial land uses) were analyzed for the Saturday peak hour condition to analyze the impact of weekend retail traffic since a specific project site plan will require approval from the City.

Roadway Segments

Per the City's guidelines, all roadway segments connecting the study intersections were studied for the weekday a.m. and p.m. peak hour level of service (LOS). Also, per the City's guidelines, roadway segment LOS was determined based on the methodology and peak hour volume thresholds provided in the "Florida Tables" noted in *Table 4-7 – Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* (Florida Department of Transportation – FDOT). For the arterials in the study area level of service (LOS) thresholds were based on LOS D capacities for two specific roadway classifications: State Two Way Arterials and Non-State Roadways.

Caltrans Facilities

The primary Caltrans facility proximate and west of the project site is State Route 99 (SR 99). In addition, State Route 180 (SR 180) is located approximately eight miles south of the site; and State Route 41 (SR 41) is located approximately six miles east of the project site. The following segments of SR 99 (both northbound and southbound directions) were analyzed in this TIS:

1. Avenue 7 to Herndon Avenue
2. Herndon Avenue to Veterans Boulevard (*future interchange*)
3. Veterans Boulevard (*future interchange*) to Shaw Avenue
4. Shaw Avenue to Ashlan Avenue
5. Ashlan Avenue to Dakota Avenue

In addition, a ramp weaving analysis along SR 99 was conducted for the northbound and southbound ramp weaving sections between Shaw Avenue and the future Veterans Boulevard interchanges, and between the future Veterans Boulevard and Herndon Avenue interchanges. Traffic data for these facilities was obtained from the most recent traffic counts published by Caltrans as well as peak hour traffic counts at existing ramp terminals.

At-Grade Railroad Crossings

An at-grade railroad crossing analysis was conducted for each analysis scenario to determine the vehicular queues at the at-grade railroad crossings at Herndon Avenue, Carnegie Avenue, and Shaw Avenue with the Union Pacific (UPRR) railroad tracks. The queuing methodologies in the *Highway Capacity Manual* (HCM) were used to analyze the potential increases in vehicular queuing with addition of traffic from each phase of the Master Plan. The analyses would determine whether the queues due to train crossings would extend into adjacent intersections and significantly impact traffic operations.

Traffic Study Analysis Scenarios

The following traffic scenarios were analyzed in this TIS:

Existing Conditions

Existing traffic conditions for the project study area are based on weekday a.m. and p.m. peak hour traffic counts, and Saturday peak hour traffic counts collected in the study area in late-October and early-November 2007. These traffic counts represent the typical peak hours during the weekdays while adjacent schools were in session. In addition, traffic data collected at the at-grade rail crossings in the study area were done in early-December 2007 which also represented typical weekday rail and vehicular operations at the at-grade railroad crossings.

Existing plus Master Plan (Phases 1, 2, 3, 4, & 5)

In accordance with CEQA, an Existing plus Master Plan condition (Phases 1, 2, 3, 4, and 5) has been analyzed. Traffic in this scenario was developed by adding trips generated by the buildout of land uses in Phases 1 though 5, directly to the existing condition of the study area (existing traffic volumes, and existing intersection and roadway geometrics). No future committed network improvements were assumed in this condition.

Year 2010 Baseline Conditions

The proposed project's Phase 1 "opening year" was determined to be 2010 in which Phase 1 would be completely constructed and fully occupied. Per direction from the City Traffic Engineer, year 2010 traffic volumes were calculated using a manual "build-up" method of base existing (2007) traffic volumes, plus application of a 2010 ambient growth rate determined from the Fresno COG travel model, and the addition of traffic from a list of cumulative (approved and/or pending) projects that would generate traffic in the project study area. Based on research conducted at the City's Planning Department, approximately 70 cumulative projects were determined to generate traffic in the study area.

Year 2010 plus Phase 1

Traffic in this scenario was developed by adding the trips generated from Phase 1 of the proposed project to the Year 2010 Baseline traffic conditions. The Phase 1 trip assignment was determined based on a revised Select Zone model run of Phase 1 on the Fresno COG travel model with some manual adjustments to the adjacent intersections and roadways of Phase 1. This trip assignment was manually added to the 2010 baseline condition.

Year 2012 Baseline Conditions

The proposed project's Phase 2 (2A and 2B) "opening year" was determined to be 2012 in which Phases 1 and 2 (2A and 2B) would be completely constructed and fully occupied. Similar to Phase 1, year 2012 traffic volumes were calculated using a manual "build-up" method of base existing (2007) traffic volumes, plus application of a 2012 ambient growth rate determined from the Fresno COG travel model, and the addition of traffic from a list of cumulative projects that would generate traffic in the project study area.

Year 2012 plus Phases 1 & 2 (2A & 2B)

Similar to 2010 plus Phase 1, traffic in this scenario was developed by adding the trips generated from Phases 1 and 2 (2A and 2B) of the proposed project to the Year 2012 Baseline traffic conditions. The Phase 2 (2A and 2B) trip assignment was determined based on a revised Select Zone model run of Phase 2 on the Fresno COG travel model with some manual adjustments to the adjacent intersections and roadways of Phases 1 and 2. This trip assignment was manually added to the 2012 baseline condition.

Year 2017 Baseline Conditions

The proposed project's Phases 3 and 4 "opening year" was determined to be 2017 in which Phases 1, 2 (2A and 2B), 3, and 4 would be completely constructed and fully occupied. Per direction of the City Traffic Engineer, forecast traffic volumes for this phase were calculated directly (and post-processed) from Fresno COG's 2017 travel model. Direct use of the travel model for this horizon year versus the manual "build-up" method for 2010 and 2012 was preferred since year 2017 is 10 years beyond the existing base traffic volumes analyzed in the TIS. In addition, use of the travel model for 2017 forecasts indicates a better distribution of 2017 background traffic due to changes in the overall regional network and other major changes in land uses throughout the region. Peak hour turning volumes were derived based on specific post-processing methodology approved in the COG's *Recommended Procedures for Using Traffic Projections from the Fresno COG Travel Model*.

Year 2017 plus Phases 1, 2, 3 & 4

Traffic in this scenario was developed by adding the land uses of Phases 1 through 4 directly into Fresno COG's 2017 travel model. Peak hour turning volumes were derived based on specific post-processing methodology approved in the COG's Recommended Procedures publication with some manual adjustments to the adjacent intersections and roadways of Phases 1 through 4.

Year 2019 Baseline Conditions

The proposed project's final Phase 5 "opening year" was determined to be 2019 in which Phases 1, 2 (2A and 2B), 3, 4, and 5 would be completely constructed and fully occupied. Similar to 2017, forecast traffic volumes for this phase were calculated directly (and post-processed) from Fresno COG's 2020 travel model. Peak hour turning volumes were derived based on specific post-processing methodology approved in the COG's Recommended Procedures publication.

Year 2019 plus Phases 1, 2, 3, 4 & 5

Traffic in this scenario was developed by adding the land uses of Phases 1 though 5 directly into Fresno COG's 2020 travel model and adjusting to year 2019. Peak hour turning volumes were derived based on specific post-processing methodology approved in the COG's Recommended Procedures publication with some manual adjustments to the adjacent intersections and roadways of Phases 1 through 5.

Buildout Year 2025 Baseline Conditions

Per City requirements, the Buildout Year 2025 traffic volumes for peak hour traffic were provided by the Fresno COG in their 2025 travel model. The Buildout Year 2025 scenario includes all future roadway and intersection improvements on the City's General Plan Circulation Element as well as known freeway mainline improvements on the State facilities in the Fresno COG network. The 2025 travel model takes the normal growth-year model and, for all the known approved projects at the time of model development, primarily other active GPAs, adds socioeconomic information on top of the normal growth projections. Peak hour turning volumes were derived based on specific post-processing methodology approved in the COG's Recommended Procedures publication. Although other jurisdictions may currently be using a buildout year of 2030 or later, the City's General Plan is based on the Fresno COG's 2025 travel model.

Buildout Year 2025 plus Master Plan (Phases 1, 2, 3, 4 & 5)

Traffic in this scenario was developed by adding the land uses of Phases 1 though 5 directly into Fresno COG's 2025 travel model. Peak hour turning volumes were derived based on specific post-processing methodology approved in the COG's Recommended Procedures publication with some manual adjustments to the adjacent intersections and roadways of the Master Plan.

3.0 PROJECT DESCRIPTION

The following section provides information on the permanent operation of the proposed project relative to the local and regional circulation network.

Existing Land Use and Surrounding Land Uses

The proposed development area is currently undeveloped. The portion of the site east of Golden State Boulevard and the UPRR tracks consists of former orchards. Currently the majority of this portion of the property is covered with dying fig trees. The balance of the site is covered by ruderal grasses. With exception of an existing single family home on the Phase 2B site, there are no other buildings or structures present on the rest of the site.

The property is designated as Light Industrial and Medium Residential in the City of Fresno 2025 General Plan. The site's existing zoning for the area lying northeast of Golden State Boulevard is AE-5 Agricultural Exclusive, and is Light Industrial (M-1) southwest of Golden State Boulevard.

Adjacent to the project site are the following roadways: Herndon Avenue, Bryan Avenue, Golden State Boulevard, and the future Veterans Boulevard. According to the City's General Plan Circulation Element, Herndon Avenue is designated as an "Expressway" (a four- to six lane divided roadway with no direct access to abutting properties with intersections at half-mile intervals); Bryan Avenue is designated as an "Arterial" (a four- to six lane divided roadway with limited access to abutting properties); Golden State Boulevard is designated as a "Collector" (a two- to four lane undivided roadway); and the future Veterans Boulevard is designated as a "Super Arterial" (a four- to six lane divided roadway with limited access to abutting properties via right turn in/out only movements with special consideration by the City to allow left turn in-only movements).

The project site is characterized by its relationship to major transportation features. As noted above, Golden State Boulevard and the UPRR traverse the site and SR 99 borders the site to the west. The site is bordered to the north by Herndon Avenue, which has an at-grade crossing at the railroad and an interchange with SR 99. A future alignment of Veterans Boulevard and a new SR 99 interchange with this arterial is planned near the southern boundary of the property. Beyond Bryan Avenue, which borders the site to the east, is the Rio Vista Middle School, River Bluff Elementary School, and the Hampton Renaissance single-family housing development. The William Saroyan Elementary School is located within that residential development. An *EZ Trip Truck Stop* and fueling station is located directly north of the western portion of the development area. A small residential enclave is located near the northwestern portion of the site, at the corner of Herndon Avenue and Weber Avenue.

Various commercial and industrial uses are located between Golden State Boulevard and SR 99, south of the project site, and recently developed residential uses are located west of SR 99. The San Joaquin River, the boundary between the City of Fresno and the County of Madera in this area, is approximately 0.4 mile north of the project site.

Project Description

The project applicant, O&S Holdings, proposes to Master Plan and entitle an approximately 238 acre project at the northwest gateway of the City of Fresno. The proposed project would be developed in five phases over a period of nine years with Phase 1 projected to have an opening year in late 2010. Buildout of Phase 1 would occur in 2010; Phase 2 (2A and 2B) in 2012; Phases 3 and 4 in 2017; and Phase 5 in

2019. The final development would include retail, office, hospitality, and entertainment uses. In general, the integrated, mixed-use project is planned to include:

- A large retail marketplace (Phase 1)
- A lifestyle center or town center project with hotel (Phase 2B)
- A mid-rise office park (Phases 2A and 5)
- A light industrial business park and hotel (Phase 3)
- A neighborhood retail/commercial center (Phase 4)

A conceptual plan and phasing for the entire site is shown on Figure 3-1, Master Site Plan. A more detailed plan for Phase 1 of the project is shown in Figure 3-2, Marketplace at El Paseo. Project buildout is anticipated to occur over approximately nine years (2010 – 2019). The first phase, named "Marketplace at El Paseo", would consist of a big-box retail development with approximately 906,788 square feet of retail space including smaller outparcel restaurant and retail uses. Primary access for this project phase is planned off of Bryan Avenue, with secondary access proposed on Herndon Avenue via an unsignalized right turn in/out and left turn in-only driveway. More specific plans and detailed uses for future phases would be dependent in part upon market conditions. Anticipated building area and uses are summarized in Table 3-1.

Reclassification of Herndon Avenue

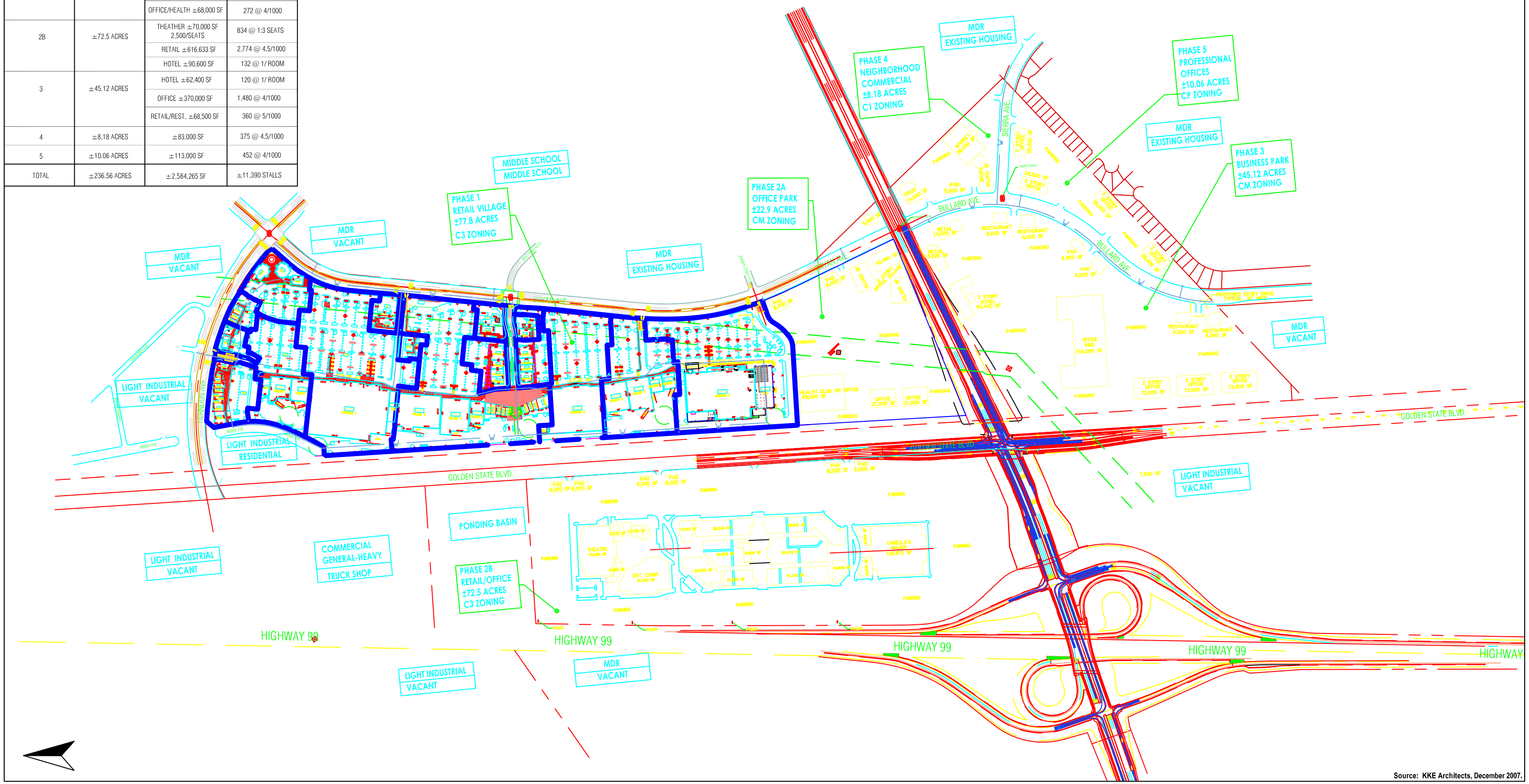
In order to allow for the secondary access driveway on Herndon Avenue for Phase 1, the project also proposes to amend the General Plan Circulation Element and re-designate a section of Herndon Avenue from an Expressway to a Super Arterial. The section of Herndon Avenue involved in this amendment would be from SR 99 to Bryan Avenue.

With the construction of the future Veterans Boulevard as a Super Arterial, connecting at Herndon Avenue, between Hayes Avenue and Polk Avenue, and extending west over SR 99 into West Fresno, a majority of traffic on Herndon Avenue, east of Polk Avenue, would be diverted to this roadway as it would provide access to a new interchange on SR 99. With this major shift in traffic, future traffic volumes would decrease on Herndon Avenue (between SR 99 and the future Veterans Boulevard) and would be balanced between the Herndon Avenue and future Veterans Boulevard interchanges. With this shift in traffic, the "Expressway" designation for the segment of Herndon Avenue from SR 99 to its intersection with Bryan Avenue would not be required.

Furthermore, with the provision of a secondary access point to Herndon Avenue for Phase 1 of the Master Plan, inbound traffic to Phase 1 from SR 99 and west Fresno would have direct access into Phase 1 which also would improve levels of service at the SR 99/Herndon Avenue Interchange and the intersection of Bryan Avenue/Herndon Avenue. As part of the construction of the secondary driveway on Herndon Avenue for Phase 1, the south leg of the Weber Avenue/Herndon Avenue intersection would be terminated, primarily for the future UPRR grade separation project (Herndon Avenue underpass) planned for 2017. The proposed secondary access from Herndon Avenue would line-up consistently with the Weber Avenue realignment option shown in the grade separation plans provided by the City. Additionally, since the grade separation project would remove the Weber Avenue/Herndon Avenue intersection, Phase 1 of the Master Plan would provide access through the site for the existing six single-family homes through their driveways planned on Herndon Avenue and Bryan Avenue via a public access easement agreement.

SITE PHASE SUMMARY

PHASE	SITE AREA	POTENTIAL ALLOWABLE BUILDING AREA (SF)	PARKING REQUIRED
1	±77.8 ACRES	±857,132 SF	3,834 @ 4.5/1000 FOR RETAIL 10/1000 FOR REST.
2A	±22.9 ACRES	RETAIL/REST. ±17,000 SF	68 @ 4/1000
		OFFICE ±168,000 SF	672 @ 4/1000
		OFFICE/HEALTH ±68,000 SF	272 @ 4/1000
2B	±72.5 ACRES	THEATHER ±70,000 SF 2,500/SEATS	834 @ 1:3 SEATS
		RETAIL ±616,633 SF	2,774 @ 4.5/1000
		HOTEL ±90,600 SF	132 @ 1/ ROOM
3	±45.12 ACRES	HOTEL ±62,400 SF	120 @ 1/ ROOM
		OFFICE ±370,000 SF	1,480 @ 4/1000
		RETAIL/REST. ±68,500 SF	360 @ 5/1000
4	±8.18 ACRES	±83,000 SF	375 @ 4.5/1000
5	±10.06 ACRES	±113,000 SF	452 @ 4/1000
TOTAL	±236.56 ACRES	±2,584,265 SF	±11,390 STALLS



Source: KKE Architects, December 2007.

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Figure 3-1
Fresno El Paseo Site Plan - Phases 1-5

Source: KKE Architects, December 2007.

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Figure 3-2
Phase 1 Site Plan

Table 3-1 Fresno El Paseo Project Development Summary

Land Use	Size (in square feet – SF)
PHASE 1 – Year 2010 Opening Year	
Shopping Center	438,939 SF
- Anchor 1 – Discount Superstore	186,000 SF
- Anchor 2 – Discount Store	98,844 SF
- Anchor 3 – Home Improvement Superstore	183,005 SF
Subtotal Phase 1	906,788 SF
PHASE 2A – Year 2012 Opening Year	
- Shopping Center	17,000 SF
- Office Park	252,000 SF
- Health/Fitness Center	68,000 SF
Subtotal Phase 2A	337,000 SF
PHASE 2B – Year 2012 Opening Year	
- Multiplex Movie Theater	70,000 SF (2,500 seats)
- Business Hotel	90,600 SF (132 rooms)
- Major (Discount Store)	135,256 SF
- Shopping Center	481,377 SF
Subtotal Phase 2B	777,233 SF
PHASE 3 – Year 2017 Opening Year	
- Business Hotel	62,400 SF (120 rooms)
- Business Park	370,000 SF
- Shopping Center	68,500 SF
Subtotal Phase 3	500,900 SF
PHASE 4 – Year 2017 Opening Year	
- Shopping Center	83,000 SF
Subtotal Phase 4	83,000 SF
PHASE 5 – Year 2019 Opening Year	
- General Office	113,000 SF
Subtotal Phase 5	113,000 SF
TOTAL	2,717,921 SF

Veterans Boulevard

Veterans Boulevard has been planned to be a major arterial street in northwest Fresno since the City of Fresno's 1984 General Plan. In 1996, the Fresno City Council and the Fresno County Board of Supervisors adopted the Official Plan Line that firmly established the alignment and required right-of-way for Veterans Boulevard, then known as the Herndon-Grantland Diagonal. Limited sections of Veterans Boulevard have already been constructed by developers on both sides of SR 99.

Specifically, Veterans Boulevard is a planned north-south, six-lane Super Arterial (limited access major street) that would connect at its northern terminus with Herndon Avenue, west of Polk Avenue; have a partial cloverleaf freeway interchange and overpass at SR 99 and the Union Pacific (UP) railroad tracks; and terminate at Grantland Avenue, south of Gettysburg Avenue. At its intersection with Herndon Avenue, Veterans Boulevard would be controlled with a traffic signal that would allow free-flow movement for westbound traffic on Herndon Avenue. At its intersection with Grantland Avenue, Veterans Boulevard would intersect with, and become, Grantland Avenue and would continue as a six-lane Super Arterial to Shields Avenue, then become a four-lane Arterial south of Shields Avenue. Veterans Boulevard will ultimately have signalized intersections with Herndon Avenue, Hayes Avenue, Bryan-Bullard Avenue, Golden State Boulevard connector road, Barstow Avenue, Shaw Avenue, and Gettysburg Avenue.

According to the City and Caltrans, a partial cloverleaf interchange is planned for the future SR 99/Veterans Boulevard interchange and is currently going through the Caltrans Project Study Report (PSR) process which is being funded by the City of Fresno. The PSR is the first step in the Caltrans process for the planning, development, and construction of a new interchange on the State highway system. The next steps for the proposed freeway interchange would be receiving a Measure C funding allocation from the Fresno County Transportation Authority (FCTA), initiating the environmental review process, public hearing, selection of a Preferred Alternative through the Project Approval Report, acquiring right-of-way, preparing the final design and construction bid documents, utility relocation, bidding, and constructing the project.

According to the *Final 2006 Measure "C" Extension Expenditure Plan* (Council of Fresno County Governments – COG), the cost estimate for the construction of Veterans Boulevard (Herndon Avenue to Grantland Avenue) and its grade separation, or interchange, with SR 99 is approximately $60,000,000 (in 2004 dollars). Veterans Boulevard is one of 14 Urban Tier 1 projects to be funded over the next 18 years in the Measure C Extension Expenditure Plan that was approved by the voters in Fresno County. The Expenditure Plan includes the $60,000,000 of Measure C, State Transportation Improvement Program (STIP) funds, and developer impact fees for the entire Veterans Boulevard project. However, the City of Fresno has requested that the $60,000,000 for the entire Veterans Boulevard project be specifically allocated to the segment between Bryan-Bullard Avenue (Bryan Avenue will be extended to Bullard Avenue by Phase 1 of the Master Plan) and Barstow Avenue which comprise the "touch-down" points for the roadway grade separation over SR 99 and UP railroad tracks. This segment would include the future freeway interchange and the future connection to Golden State Boulevard. For the remaining segments of Veterans Boulevard, the City would fund their construction through the Fresno Major Street Impact (FMSI) fee program from new development projects. The fees paid by new development will fund the construction of the six travel lanes, raised center median, and curb-and-gutter for the rest of Veterans Boulevard (i.e., from Bryan-Bullard Avenue north to Herndon Avenue, and from Barstow Avenue south to Gettysburg Avenue). Basically, developers will be required to construct segments of Veterans Boulevard as they further develop the area, and the City could, at some point, choose to intervene by using collected FMSI fees to construct any missing links.

The FCTA and Fresno COG are considering whether to utilize any bonding to accelerate schedules for some of the Measure C Tier 1 Urban projects, or whether to utilize a "pay as you go" program. Under a "pay as you go" program, there would be $9,000,000 available this year for the Tier 1 Urban program. It should be noted that priorities have not been set for which projects will be constructed first.

For purposes of the Master Plan Environmental Impact Report (EIR) and this TIS, Veterans Boulevard, from Herndon Avenue to Grantland Avenue, including its interchange/overpass with SR 99 and the UP railroad tracks, has been assumed to be in-place and fully operational by Phases 3 and 4 (2017 planned opening year) and Phase 5 (2019 planned opening year) of the Master Plan. Phases 3, 4, and 5 rely on an accelerated funding schedule (e.g., "pay as you go") for the Veterans Boulevard project as traffic generated by those phases would be heavily dependent on the adjacent future interchange at SR 99/Veterans Boulevard. Without the Veterans Boulevard project in full operation for Phases 3, 4, and 5, significant unavoidable traffic impacts would occur in the project study area, including the SR 99 interchanges at Herndon Avenue and Shaw Avenue.

Phases 1 and 2 of the Master Plan assume the existing street network of the study area (i.e., no Veterans Boulevard roadway and interchange), but with the extension of Bryan Avenue to Bullard Avenue to be constructed as a mitigation measure for Phase 1; and the extension of Veterans Boulevard from Herndon Avenue to Bryan-Bullard Avenue to be constructed as a project-feature for Phase 2. Additional mitigation measures for the study area intersections and roadway segments have been identified in the TIS and EIR to mitigate Phases 1 and 2 impacts.

4.0 ANALYSIS METHODOLOGIES

The following section discusses the methodologies utilized to determine intersection levels of service (LOS), roadway LOS, freeway mainline operations, and at-grade railroad crossing vehicle queues.

Intersection Methodology

The assessment of intersection conditions in this TIS addresses LOS in terms of vehicle control delay (in seconds per vehicle) for signalized and unsignalized intersections. The level of service grades (LOS A – LOS F), as reported in *Highway Capacity Manual* (HCM2000), are dependent on vehicle control delay (in seconds) at the signalized and unsignalized intersections. Both signalized and unsignalized study area intersections have been analyzed using the HCM2000 method. Synchro/SimTraffic (version 6) software was used to determine intersection LOS for all study scenarios. Synchro/SimTraffic is consistent with the HCM2000 methodologies as well as the City's requirements.

The degree of congestion at an intersection is described by the level of service, which ranges from A to F, with A representing free-flow conditions with little delay, and F representing over-saturated traffic flow throughout the peak hour. A complete description of the meaning of level of service can be found in the Transportation Research Board's *1997 Highway Capacity Manual* (HCM), Special Report 209, Third Edition. Brief descriptions of the six levels of service, as provided in Table VB-2 in the City of Fresno's *Draft MEIR for the 2025 Fresno General Plan* (2002), are shown in Table 2.

Queuing Analysis

In addition to the analysis of a signalized intersection's operating level of service and delay, a queuing analysis was performed for all signalized study area intersections in Synchro that is consistent with the *Highway Capacity Manual* methodologies. The queuing analysis reports the 95th percentile queue which is generally regarded as the minimum design queue.

Significance Criteria

The following traffic significance criteria for intersections within the City's jurisdiction have been set in the City's TIS guidelines:

> *"For study intersections, the impact is considered significant if the addition of the traffic generated from the proposed project results in any one of the following:*
>
> - *Triggers an intersection operating at acceptable LOS (LOS D or better) to operate at unacceptable levels of service;*
> - *Triggers an intersection operating at unacceptable LOS (LOS E) to operate at LOS F; and*
> - *Increases the average delay by five (5) or more seconds[1] for a study intersection that is already operating at unacceptable LOS."*

[1] This criteria item was revised per direction from Bryan Jones, City Transportation Manager, July 23, 2008.

Table 4-1 – Level of Service Definitions

			Intersections	
			Signalized	Unsignalized
Level of Service	Conditions	Signalized Intersection Description	Delay (seconds)	Delay (seconds)
A	Free Flow	Users experience very low delay. Progression is favorable, and most vehicles do not stop at all.	≤ 10	≤ 10
B	Stable Operations	Vehicles travel with good progression. Some vehicles stop, causing slight delay.	10.1 to 20.0	10.1 to 15.0
C	Stable Operations	Higher delays result from fair progression. A significant number of vehicles stop, although many continue to pass through the intersection without stopping.	20.0 to 35.0	15.1 to 25.0
D	Approaching Unstable	Congestion is noticeable. Progression is unfavorable, with more vehicles stopping rather than passing through the intersection.	35.1 to 55.0	25.0 to 35.0
E	Unstable Operations	Traffic volumes are at capacity. Users experience poor progression and long delays.	55.1 to 80.0	35.1 to 50.0
F	Forced Flow	Intersection's capacity is over saturated, causing poor progression and unusually long delays.	> 80.0	> 50.0

Sources: *1997 Highway Capacity Manual*, Transportation Research Board, Special Report No. 209, Third Edition.
Draft MEIR, 2025 Fresno General Plan, 2002.

In addition, when an unsignalized intersection is found to operate at unsatisfactory LOS (LOS E or lower), a traffic signal warrant will be prepared to determine whether signalization of the intersection would be warranted. The signal warrants prepared in this TIS are based on the *Manual of Uniform Traffic Control Devices* (MUTCD).

For ramp intersections on SR 99, level of service standards based on the Caltrans *Guide for the Preparation of Traffic Impact Studies* have been used. According to the guide, any segment operating at a LOS D or worse is considered deficient. If the project causes a ramp intersection to drop from LOS C or better to LOS D or worse, then it is considered and impact.

For the queuing analysis, a significant impact is determined when the proposed project would exacerbate a determined baseline (without project) queue by one average vehicle length (25 feet) that is already forecast beyond the storage capacity of its lane(s).

Roadway Methodology

Per the City's guidelines, all roadway segments connecting the study intersections were studied for the weekday a.m. and p.m. peak hour level of service (LOS). According to the guidelines, if a roadway segment varies between the total number of lanes, the lowest number of lanes is to be analyzed for the entire roadway segment. Also, per the City's guidelines, roadway segment LOS was determined based on the methodology and peak hour volume thresholds provided in the "Florida Tables" noted in *Table 4-7 – Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* (Florida Department of Transportation – FDOT). For the arterials in the study area level of service (LOS) thresholds were based on LOS D capacities for two specific roadway classifications: State Two Way Arterials (Class II – 2.00 to 4.50 signalized intersections per mile) and Non-State Roadways (major City/County roadways). Copies of the "Florida Tables" are provided in Appendix A.

Significance Criteria

For roadways, the operational goal of LOS D or better has been set by the City. Therefore, roadways with the following peak hourly directional volumes equal to, and higher, than LOS D peak hour volumes in the Florida Tables would be considered as roadways with unsatisfactory LOS:

- six lane Expressways and Super Arterials: peak hour LOS D directional volume threshold = 2,570
- four lane Expressways and Super Arterials: peak hour LOS D directional volume threshold = 1,710
- two lane Expressways and Super Arterials: peak hour LOS D directional volume threshold = 810
- four lane Arterials and Collectors: peak hour LOS D directional volume threshold = 1,620
- two lane Collectors: peak hour LOS D directional volume threshold = 760

Furthermore, per the City's General Plan Transportation Policy B-3:

> *Development projects that are consistent with plans and policies but that could affect conditions on major street segments predicted by the General Plan EIR traffic analysis to perform at an ADT LOS "F" shall not cause further substantial degradation of conditions on those segments before 2025 without completing a traffic and transportation evaluation. This evaluation will be used to determine appropriate project-specific design measures or street/transportation improvements that will contribute to achieving and maintaining a LOS equivalent to that anticipated by the General Plan. Further substantial degradation is defined as an increase in the peak hour vehicle/capacity (v/c) ratio of 0.15 or greater for roadway segments whose v/c ratio is estimated to be 1.00 or higher in 2025 by the General Plan EIR traffic analysis.*

Per direction of the City Traffic Engineer, the 0.15 or greater V/C increase standard in roadway capacity has also been used as significance criteria for study area roadway segments.

Freeway Analyses

Existing (2006) Annual Average Daily Traffic (AADT) volumes were obtained from the Caltrans *Traffic and Vehicle Data Systems Unit* webpage. The "K" and "D" factors used to get the peak hour directional volumes were obtained from the *Peak Hour Volume Data Report* on the Caltrans Traffic Data Branch website. The truck percentages were also obtained from the Caltrans Traffic Data Branch website. Future traffic volume forecasts were post-processed in accordance to the Fresno COG modeling procedures. The difference between the future model volume and the existing model volume was added to the existing count to calculate the future analysis volume.

The number of lanes for each freeway segment in the future was based on the number of lanes for that segment in the Fresno COG travel model for that year, with the exception for year 2012 where Caltrans staff noted that all freeway segments along SR 99 in the project vicinity would be widened to six lanes by as part of the State's Proposition 1B project.

Mainline Level of Service

The delay and LOS was calculated using the 2000 HCM methodology for basic freeway segments. The *Highway Capacity Software* (HCS) program was used to perform these calculations. The free flow speed was calculated based on interchange spacing and number of lanes. The default peak hour factor of 0.92 was assumed since no data was available.

Ramp Weaving Analysis

A freeway weaving operational analysis was conducted using the "Design Curve for Freeway and Collector Weaving" (Figure 504.7A) provided in the *Highway Design Manual* (HDM, Caltrans 2006) for the weaving sections between the following freeway interchanges:

- SR 99: Herndon Avenue to (future) Veterans Boulevard, both directions
- SR 99: (future) Veterans Boulevard to Shaw Avenue, both directions

Base (existing) traffic data for these facilities was obtained from the most recent traffic counts published by Caltrans as well as peak hour traffic counts at existing ramp terminals. The distance between the existing interchanges of SR 99 at Shaw Avenue and Herndon Avenue is approximately 1.8 miles (gore point to gore point). With the addition of the future SR 99/Veterans Boulevard interchange between Herndon Avenue and Shaw Avenue, the distance between the ramps at Herndon Avenue to Veterans Boulevard would be approximately 0.5 miles (gore point to gore point); while the distance between the ramps at Veterans Boulevard and Shaw Avenue would be approximately 0.7 miles (gore point to gore point). For the other freeway interchanges in the study area, the minimum distance between these interchanges is approximately one mile or more.

The HDM methodology is based on the Leisch nomographs shown in HDM Figure 504.7A which determines the level of service for the weaving volumes for the length of the weaving section form the first panel on the lower left of the chart. The level of service for the total volume over all lanes of the weaving section is then found in the panels on the right of the chart. Copies of the Leisch nomographs used in the TIS are provided in the Appendices of the associated traffic analysis sections of this TIS.

Significance Criteria

Based on the Caltrans *Guide for the Preparation of Traffic Impact Studies* any facility operating at a LOS D or worse is considered deficient. If the project causes a freeway segment to drop from LOS C or better to LOS D or worse, then it is considered and impact. If freeway facility is already operating at LOS D or worse and the project increases the density at the facility, then it is considered an impact. For this proposed project, mitigation measures for Caltrans facilities are based on the February 2006 *Mutual Release and Settlement Agreement* between the City of Fresno and Caltrans District 6 (also known as the "Interim Agreement").

At-Grade Railroad Crossings

An at-grade railroad crossing analysis was conducted for each analysis scenario to determine the vehicular queues at the at-grade railroad crossings at Herndon Avenue, Carnegie Avenue, and Shaw Avenue with the Union Pacific (UPRR) railroad tracks. The *Highway Capacity Manual* (HCM) "Back of Queue" queuing methodology was used to analyze the potential increases in vehicular queuing with addition of traffic from each phase of the Master Plan.

Surveys of existing conditions at the UPRR at-grade crossings at Herndon Avenue, Carnegie Avenue, and Shaw Avenue were conducted in early December 2007 over a period of three days. During those surveys, the data collected consisted of the following: 1) time of day for rail crossings; 2) length of time for rail crossings (from gate arms down, to gate arms up); 3) number of train's locomotives and boxcars; 4) estimated number of vehicles stopped on both sides of tracks; and 5) speed of train.

Significance Criteria

The analyses would determine whether the queues due to train crossings would extend into adjacent major intersections and significantly impact traffic operations. However, since Golden State Boulevard is adjacent to, and to the west of, the UPRR tracks, and is regularly impacted by train crossing, the major adjacent intersection to the west analyzed would be the SR 99 northbound ramps of Herndon Avenue and Shaw Avenue.

5.0 TRAFFIC VOLUME FORECASTING METHODOLOGY

There are several logical methods for quantifying traffic impacts from cumulative development within the travel demand modeling and the traffic analysis framework commonly used for traffic impact analyses associated with large land-use developments. Per the direction of the City Traffic Engineer, two appropriate and technically defensible, although slightly different, approaches were employed for the short-term forecasts (years 2010 and 2012) and for the long-term forecasts (years 2017 and 2019). The following sections describe the modeling methods, data sources and the input assumptions for forecasting traffic volumes for the proposed project.

Modeling Methodology for Years 2010 and 2012

A "layering" approach (build-up method) was employed to forecast the 2010 and 2012 traffic volumes used in the intersection and roadway level of service analysis. The future traffic volumes were separated into four logical categories to simplify the estimation process. These four traffic volume categories include:

1. Existing traffic volumes: measured by recently conducted traffic counts at the project study intersections and study roadway segments.
2. Cumulative development traffic volumes: forecast traffic from approved and/or pending developments which are expected to be completed and occupied by 2010 or 2012 in, or adjacent to, the project study area.
3. Ambient growth traffic volumes: growth in traffic volumes from traffic passing through the project study area which is not attributable to the new cumulative developments in the project study area. Ambient growth traffic volumes are attributable to new developments outside the study area.
4. Proposed project traffic volumes: new traffic with the proposed project as its own trip origin or destination.

Existing Traffic Volumes

Traffic counts were conducted at all study intersections to quantify the turning movement traffic volumes at study intersections and roadway segments.

Cumulative Development Traffic Volumes

Estimating the additional traffic attributable to the cumulative developments proximate to the proposed project was a two step process:

Step 1 involved estimating the vehicle trips produced by these developments. Trip generation rates from *Trip Generation*, 7th Edition (Institute of Transportation Engineers – ITE) were used to determine the trips generated by the cumulative developments.

Step 2 was to distribute and assign the cumulative development trips onto the surrounding street system. The Fresno COG travel model was used for this task. Select zone assignments associated with each cumulative development were run in the 2010 and 2012 travel models which tracked traffic with trip origins or destinations matching the selected traffic analysis zones (TAZ) related to each cumulative development.

Ambient Growth Traffic Volumes

The Fresno COG travel model was used to estimate the ambient growth rate which was in-turn, utilized to determine the ambient growth in traffic volumes at the study intersections. To avoid double counting the traffic growth from the cumulative developments in the project study area, these developments were removed from the 2010 and 2012 model land use data input files prior to using the model to estimate the ambient traffic growth rates. The resulting ambient traffic growth rates were determined to be 1.12 percent (per year) for the weekday a.m. and p.m. peak hours, and Saturday peak hour for year 2010; and 1.08 percent for the same peak hour conditions for the year 2012. The ambient growth rates were applied to the existing traffic volumes then trips from the cumulative developments were added to estimate the future 2010 and 2012 baseline traffic volumes.

Proposed Project Traffic Volumes

Estimating traffic generated by the proposed project was done using the same two-step methodology used in developing trip generation for the cumulative projects: Step 1, estimate the project trip generation using ITE rates; and Step 2, use the Fresno COG travel demand model to determine the routes used by the project traffic.

Future Conditions 2010 and 2012 without Project Traffic Volumes

Subsequently, the 2010 and 2012 without Project (baseline) traffic volumes were estimated by simply adding the cumulative development traffic volumes and the ambient growth traffic volumes to the existing traffic volumes.

The 2010 or 2012 "Without Project" traffic volumes consist of layering or adding together the traffic volumes from (1) existing traffic volumes, (2) traffic volumes from regional/ambient growth and (3) traffic volumes from developments expected to be build between now and 2010 (or 2012), which are the known developments in the El Paseo area.

Future Conditions 2010 and 2012 plus Project Traffic Volumes

The 2010 or 2012 plus Project traffic volumes are simply the 2010 or 2012 "project only" traffic volumes layered onto (i.e. added to) the 2010 or 2012 baseline traffic volumes.

Modeling Methodology for Study Years 2017 and 2019

For the 2017 and 2019 traffic forecasts, an equally defensible method insuring that the growth in the travel model's land use databases fully covers cumulative developments was employed. The known cumulative developments were accounted for at the land-use level in the travel demand modeling process. The steps performed to determine the necessary calculations are summarized below:

1. Create a listing of all relevant cumulative developments for the study area surrounding the proposed project using the same classifications and units used for the land use database in the regional travel demand model (e.g. households, retail employees, office employees or manufacturing/other employees).
2. Determine the correspondence between the travel demand model TAZs and each project in the cumulative development listing.
3. Sum the projects in the cumulative development listing by TAZ, calculating the combined growth necessary to account for all cumulative developments in each TAZ.

4. Using the land-use database from the regional travel demand model, estimate the growth by TAZ for the study area. This is simply the difference between the Existing Year and Project Buildout Year land use forecasts. For example, if TAZ 240 contains 100 single family households in 2005, and 140 single family households in 2025 then the growth would be (140 – 100) = 40 single family households over the 20 year period.
5. Compare the required cumulative development TAZ growth to the land-use growth in the regional travel demand model, increasing the travel demand model's land-use growth as needed (on a TAZ by TAZ basis) to insure that the land-use growth is sufficient to include at least all cumulative development projects at the TAZ level.
6. Using the above described process, create a new Buildout Year land-use database that fully accounts for cumulative development.
7. Run the regional travel demand model using the newly developed Buildout Year land-use inputs. Thus the model's forecasted traffic volumes will reflect the capacity restrained additional demand from all cumulative development just as it accounts for traffic impacts from the growth in adjacent TAZ and the rest of the modeled region.

Refining Model Forecast Turning Movement Volumes

Prior to performing roadway or intersection level of service analysis, a post-processing procedure was applied to forecast model traffic volumes to correct minor model validation discrepancies. This procedure is based on the "increment method" outlined in the National Cooperative Highway Research Program's (NCHRP) *Circular 255*. The travel demand model estimated the growth increment in traffic volumes, which were added to existing traffic counts thereby correcting for any small differences between actual traffic counts and the model's estimated Existing Conditions traffic volumes.

6.0 EXISTING STUDY AREA CONDITIONS

The following section describes the existing traffic conditions in the project study area.

Roadways

The following describes the existing freeway and roadways adjacent to the project site.

State Route 99

State Route 99 (SR 99) is the primary freeway facility that would provide regional access to the project site. SR 99 provides regional access to Madera County and the Sacramento region to the north, while SR 99 provides regional access to the rest of the City and the Bakersfield/Los Angeles areas to the south. To the south, SR 99 also provides access to other freeway facilities such as State Route 180 (SR 180) and State Route 41 (SR 41).

In the project vicinity SR 99 travels in a northwest-southeast direction. Between the Shaw Avenue and Ashlan Avenue interchanges, SR 99 transitions from a six-lane freeway (three lanes in each direction) to a four-lane freeway (two lanes in each direction) as you head north. In the project vicinity/study area, SR 99 has interchanges at Herndon Avenue (diamond interchange), Shaw Avenue (partial cloverleaf), and Ashlan Avenue (diamond ramps in southbound direction; partial cloverleaf in northbound direction).

According to Caltrans staff, the four-lane segments of SR 99, north of Ashlan Avenue, would be widened to six-lanes to the Madera County line as part of the State's Proposition 1B funds (Category 2). Furthermore, by 2017, a new partial cloverleaf interchange would be constructed along with the new Super Arterial roadway, Veterans Boulevard, which would be located between the Herndon Avenue and Shaw Avenue interchanges. Funding for the future interchange at SR 99/Veterans Boulevard would be provided by Fresno COG's Measure C (Tier 1) and the State's Proposition 1B funds (Category 4). No specific construction schedule for the future interchange has been approved by Fresno COG or the Fresno County Transportation Authority (FCTA).

Herndon Avenue

Herndon Avenue is designated as an Expressway in the City's Circulation Element. This roadway would also provide major regional and local access to the project site as it has an interchange with SR 99 and SR 41. In the project study area, Herndon Avenue contains between four (two lanes in each direction) and five lanes (three westbound lanes and two eastbound lanes). Herndon Avenue has a raised landscaped median east of the BNSF railroad overcrossing, and currently has a striped (painted) median west of the BNSF overcrossing to the UP at-grade crossing. Herndon Avenue provides limited mid-block access due to its Expressway designation. Major intersections with Herndon Avenue in the study area include: SR 99 ramps; Golden State Boulevard; Bryan Avenue; and the future Veterans Boulevard. Recent traffic signal timing improvements have been completed by the City along Herndon Avenue. The posted speed limit along this roadway is 50 miles per hour (MPH).

According to an approved construction schedule provided by the City Public Works Department, by June 2009, the City would have completed major geometric improvements to the Golden State Boulevard/Herndon Avenue intersection. These improvements will be funded through the City's Traffic Signal Mitigation Impact Fee (TSMI). In addition, by year 2017, it was estimated that the City would also have completed a grade-separation project (i.e., Herndon Avenue underpass) at the UPRR tracks, just east

of Golden State Boulevard. This improvement would be reimbursable through the Fresno Major Street Impact Fees (FMSI), and funded by Fresno COG's Measure C (Tier 1) and the State's Proposition 1B funds. No specific construction schedule for the future grade-separation project has been approved by the City.

Bryan Avenue

Bryan Avenue is designated as an Arterial in the City's Circulation Element. This roadway would also provide direct access to most of the phases of the project, except for Phase 2B (located west of the UPRR tracks). Adjacent to the Phase 1 site, Bryan Avenue is constructed to its half-section containing a two-lane undivided roadway. South of its intersection with Palo Alto Avenue, Bryan Avenue has a raised median, with one southbound travel lane and two northbound travel lanes, and terminates at Cresta Avenue in a residential subdivision. Currently, there is a pending development project north of the Bryan Avenue/Herndon Avenue intersection that would extend Bryan Avenue, from Herndon Avenue, to the north, as well as provide additional traffic signal improvements at Bryan Avenue/Herndon Avenue.

Major intersections with Bryan Avenue in the study area include: Herndon Avenue, Palo Alto Avenue, the future extension of Sierra Avenue, and the future Veterans Boulevard. Upon completion of the Master Plan, Bryan Avenue will be constructed as a four lane divided roadway, and will connect with Bullard Avenue, just north of Carnegie Avenue. Funding for the extension of Bryan Avenue would be reimbursable through the City's FMSI fee.

Golden State Boulevard

Golden State Boulevard is designated as a Collector in the City's Circulation Element. Since this roadway is located west of the UPRR tracks, Golden State Boulevard would provide direct access to only Phase 2B of the proposed project. Currently, most of this roadway in the study area is configured as an unimproved (i.e., no curbs, no gutters) two-lane undivided roadway, with exception for the segment between Carnegie Avenue and Barstow Avenue where there is one northbound travel lane and two southbound travel lanes. This roadway currently provides direct access to several medium- to light industrial uses adjacent and west of the roadway. The UPRR tracks are adjacent and east of the roadway. The major intersections along this roadway in the study area are: Herndon Avenue, Carnegie Avenue, and Shaw Avenue. It should be noted that all of these intersections have an at-grade railroad crossing immediately adjacent and to the east. Based on discussions with the City Public Works Department, intersection capacity improvements are planned for Golden State Boulevard/Herndon Avenue in 2010. This improvement project would be consistent for a future grade-separation project (and Weber Avenue realignment) that would create an undercrossing of Herndon Avenue at the UPRR tracks that is planned to be completed by 2017. Funding for this improvement would be reimbursable through the City's FMSI fee, and funded by Fresno COG's Measure C (Tier 1) and the State's Proposition 1B funds. No specific construction schedule for the future grade-separation project has been approved by the City.

Palo Alto Avenue

Palo Alto Avenue is not a designated roadway on the City's Circulation Element. However, based on its location and the land uses that this roadway serves (primarily local streets of existing single family residential homes, and driveways of an elementary school and middle school), this roadway essentially functions as a "collector". Palo Alto Avenue exists as a two-lane undivided roadway between Hayes Avenue (designated as a Collector on the City's Circulation Element) and Bryan Avenue (designated as an Arterial in the City's Circulation Element). Based on field observations during the morning and after-school

peak hours of the River Bluff Elementary School and Rio Vista Middle School, traffic along Palo Alto Avenue is congested all the way to Hayes Avenue and Bryan Avenue due to pick-up and drop-off operations of students arriving and departing the schools via passenger cars and/or buses. When Phase 1 of the proposed project is completed, the primary driveway of Phase 1 would be the west leg of the existing intersection of Bryan Avenue/Palo Alto Avenue. Completion of Phase 1 would also signalize this intersection with pedestrian phasing and limited vehicle through access to facilitate pedestrian access and limit potential cut-through traffic to and from the proposed retail center and the adjacent neighborhood and schools.

Weber Avenue

Weber Avenue is also not a designated roadway on the City's Circulation Element. Adjacent to the project, south of Herndon Avenue, Weber Avenue is a narrow two-lane (unstriped) residential street with no curb and gutter that provides access to six single-family homes. By 2017, it is assumed that the Herndon Avenue grade separation project at the UPRR tracks would require that the existing intersection of Herndon Avenue/Weber Avenue be relocated further east to accommodate the Herndon Avenue undercrossing; however Phase 1 of the proposed project would be completed by 2010 which would require some adjustment of the intersection's relocation. According to the current site plan for Phase 1, the closure of the Herndon Avenue/(south) Weber Avenue intersection has been accommodated by providing access to the six existing homes on Weber Avenue through the project site via a public access easement agreement.

(Future) Veterans Boulevard

Veterans Boulevard is a planned north-south, six-lane Super Arterial (limited access major street) that would connect at its northern terminus with Herndon Avenue, west of Polk Avenue; have a partial cloverleaf freeway interchange and overpass at SR 99 and the Union Pacific (UP) railroad tracks; and terminate at Grantland Avenue, south of Gettysburg Avenue. At its intersection with Herndon Avenue, Veterans Boulevard would be controlled with a traffic signal that would allow free-flow movement for westbound traffic on Herndon Avenue. At its intersection with Grantland Avenue, Veterans Boulevard would intersect with, and become, Grantland Avenue and would continue as a six-lane Super Arterial to Shields Avenue, then become a four-lane Arterial south of Shields Avenue. Veterans Boulevard will ultimately have signalized intersections with Herndon Avenue, Hayes Avenue, Bryan-Bullard Avenue, Golden State Boulevard connector road, Barstow Avenue, Shaw Avenue, and Gettysburg Avenue. Limited sections of Veterans Boulevard have already been constructed by developers on both sides of SR 99 in the study area.

According to the City and Caltrans, a partial cloverleaf interchange is planned for the future SR 99/Veterans Boulevard interchange and is currently going through the Caltrans Project Study Report (PSR) process which is being funded by the City of Fresno. The PSR is the first step in the Caltrans process for the planning, development, and construction of a new interchange on the State highway system. The next steps for the proposed freeway interchange would be receiving a Measure C funding allocation from the Fresno County Transportation Authority (FCTA), initiating the environmental review process, public hearing, selection of a Preferred Alternative through the Project Approval Report, acquiring right-of-way, preparing the final design and construction bid documents, utility relocation, bidding, and constructing the project.

For purposes of the TIS, Veterans Boulevard, from Herndon Avenue to Grantland Avenue, including its interchange/overpass with SR 99 and the UP railroad tracks, has been assumed to be in-place and fully operational by Phases 3 and 4 (2017 planned opening year) and Phase 5 (2019 planned opening year) of the Master Plan. Phases 3, 4, and 5 rely on an accelerated funding schedule (e.g., "pay as you go") for the

Veterans Boulevard project as traffic generated by those phases would be heavily dependent on the adjacent future interchange at SR 99/Veterans Boulevard. Without the Veterans Boulevard project in full operation for Phases 3, 4, and 5, significant unavoidable traffic impacts would occur in the project study area, including the SR 99 interchanges at Herndon Avenue and Shaw Avenue.

Traffic Controls and Intersection Geometrics

Figure 6-1 illustrates the study area's existing traffic controls and intersection geometrics. As shown, of the 34 existing study intersections, 20 study intersections are currently controlled by traffic signals while the remaining 14 existing intersections are controlled by stop signs (all-way stop or minor street stop).

Traffic Volumes

Existing traffic conditions for the project study area are based on weekday a.m. and p.m. peak hour traffic counts, and Saturday peak hour traffic counts collected in the study area in late-October and early-November 2007. Figure 6-2A illustrates the existing weekday a.m. and p.m. peak hour traffic counts, while Figure 6-2B illustrates the existing Saturday peak hour traffic counts. These traffic counts represent the typical peak hours during the weekdays while adjacent schools were in session. Raw traffic count worksheets are provided in Appendix B.

Levels of Service

The following section summarizes the results of existing condition LOS analyses.

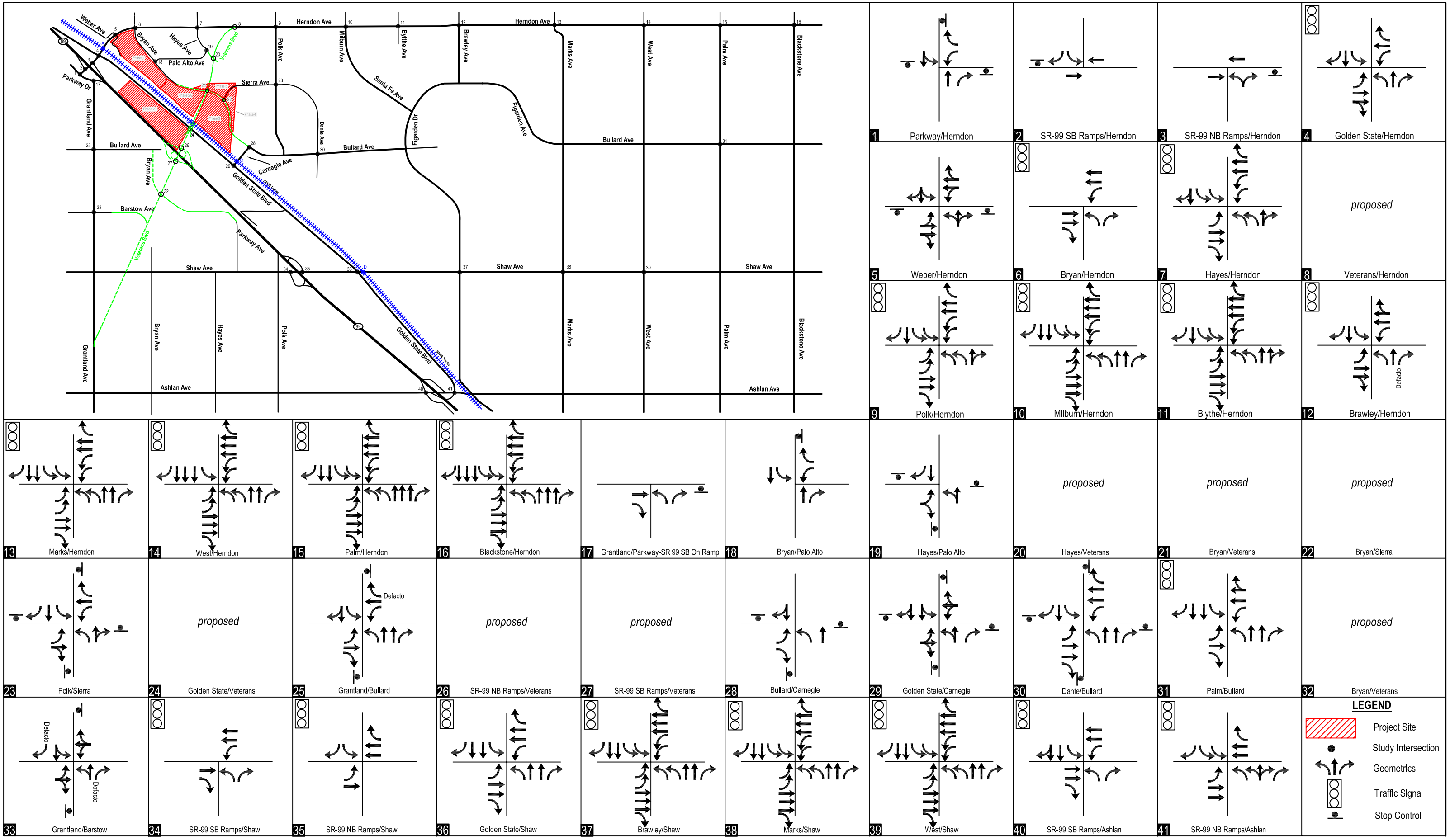
Intersection Levels of Service

Based on the analysis methodology described above, the existing a.m. and p.m. peak hour intersection traffic volumes were analyzed in Synchro/SimTraffic to determine the existing LOS in the study area.

Weekday Levels of Service

Table 6-1A presents the results of the existing weekday a.m. and p.m. peak hour LOS analysis, while detailed calculation worksheets are provided in Appendix C. According to tables, the following study area intersections currently operate with unsatisfactory LOS (i.e., LOS E or F for City intersections, and LOS D, E, or F for Caltrans facilities) in the a.m. and/or p.m. peak hours:

- Parkway Drive/Herndon Avenue (LOS F in the a.m. peak hour and LOS E in the p.m. peak hour)
- SR 99 southbound ramps/Herndon Avenue (LOS D in the a.m. peak hour)
- SR 99 northbound ramps/Herndon Avenue (LOS E in the a.m. peak hour and LOS F in the p.m. peak hour)
- Marks Avenue/Herndon Avenue (LOS E in the a.m. peak hour)
- Palm Avenue/Herndon Avenue (LOS F in the p.m. peak hour)
- Carnegie Avenue/Bullard Avenue (LOS E in the a.m. peak hour and LOS F in the p.m. peak hour)
- Golden State Boulevard/Carnegie Avenue (LOS E in the a.m. peak hour)
- SR 99 southbound ramps/Shaw Avenue (LOS D in the a.m. peak hour)
- Golden State Boulevard/Shaw Avenue (LOS F in the p.m. peak hour)
- SR 99 northbound ramps/Ashlan Avenue (LOS D in the a.m. peak hour and LOS E in the p.m. peak hour)



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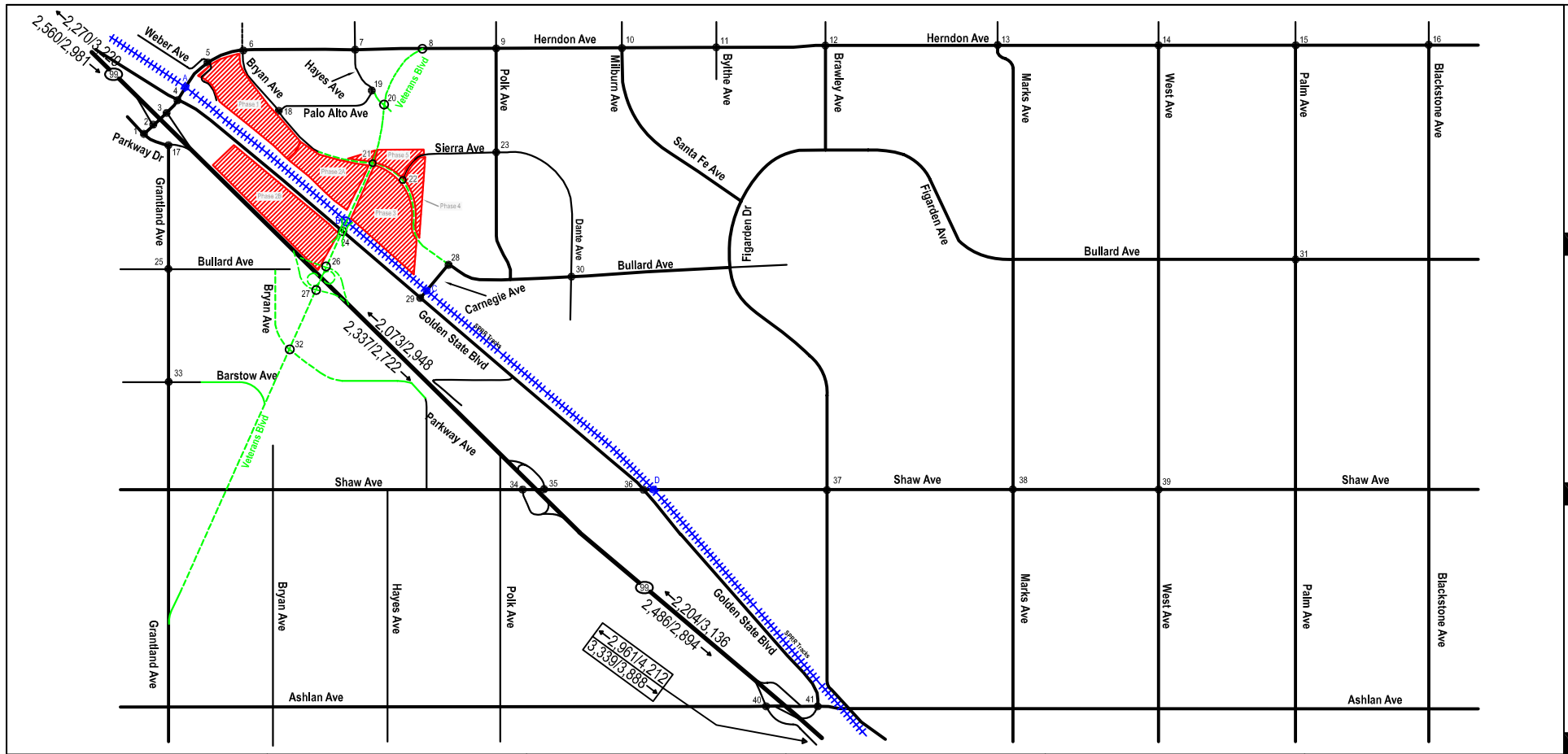
TRANSPORTATION SOLUTIONS

Figure 6-1
Existing Intersection Geometrics and Traffic Controls



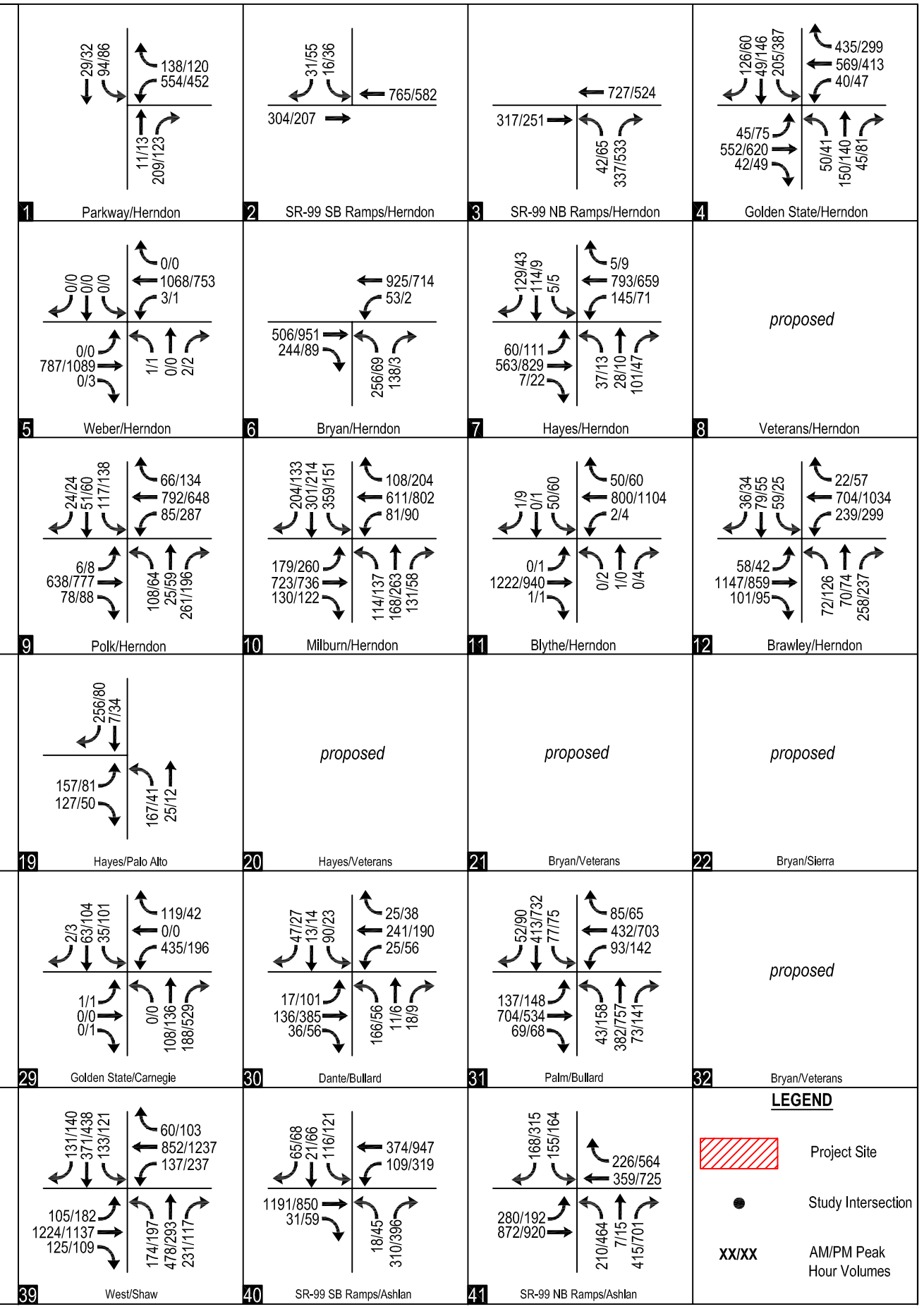


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Figure 6-2A
Existing Weekday AM and PM Peak Hour Traffic Volumes

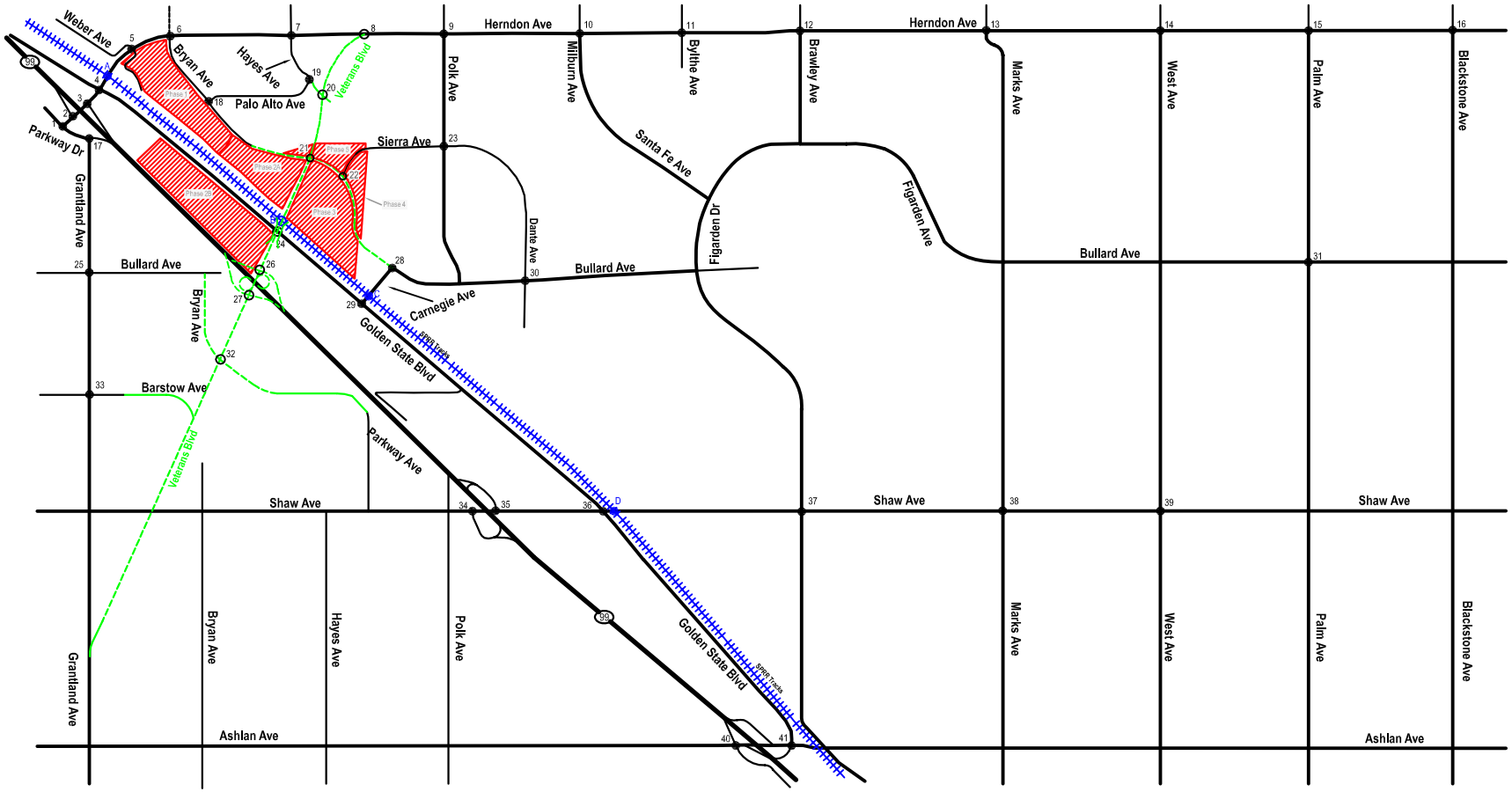

Weber Ave
Bryan Ave
Hayes Ave
Palo Alto Ave
Veterans Blvd
Herndon Ave
Polk Ave
Milburn Ave
Bylthe Ave
Brawley Ave
Marks Ave
West Ave
Palm Ave
Blackstone Ave
Parkway Dr
Grantland Ave
Sierra Ave
Santa Fe Ave
Figarden Dr
Figarden Ave
Dante Ave
Bullard Ave
Carnegie Ave
Golden State Blvd
Barstow Ave
Parkway Ave
Shaw Ave
Ashlan Ave
Phase 1
Phase 2
Phase 3
Phase 4
Phase 5
Phase 6
Phase 7
Phase 8
Phase 9
Phase 10
Phase 11
Phase 12
Phase 13
Phase 14
Phase 15
Phase 16
Phase 17
Phase 18
Phase 19
Phase 20
Phase

Table 6-1A – Existing AM and PM Peak Hour Level of Service Summary

		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	unsignalized	>50	F	47.0	E
2 99 SB Ramps/Herndon	unsignalized	25.4	D	17.1	C
3 99 NB Ramps/Herndon	unsignalized	42.8	E	>50	F
4 Golden State/Herndon	signal	29.4	C	34.1	C
5 Weber/Herndon	unsignalized	10.3	B	11.0	B
6 Bryan/Herndon	signal	14.6	B	13.5	B
7 Hayes/Herndon	signal	28.2	C	23.6	C
8 Veterans/Herndon	signal	--	--	--	--
9 Polk/Herndon	signal	24.2	C	34.5	C
10 Milburn/Herndon	signal	32.6	C	24.4	C
11 Blythe/Herndon	signal	15.9	B	15.9	B
12 Brawley/Herndon	signal	30.1	C	40.6	D
13 Marks/Herndon	signal	68.7	E	36.6	D
14 West/Herndon	signal	48.5	D	52.6	D
15 Palm/Herndon	signal	43.1	D	>80	F
16 Blackstone/Herndon	signal	24.4	C	29.5	C
17 Grantland/Parkway	unsignalized	19.0	C	11.9	B
18 Bryan/Palo Alto	unsignalized	12.8	B	8.8	A
19 Hayes/Palo Alto	unsignalized	18.3	C	8.0	A
20 Veterans/Hayes	unsignalized	--	--	--	--
21 Veterans/Bryan	unsignalized	--	--	--	--
22 Bryan/Sierra	unsignalized	--	--	--	--
23 Polk/Sierra	unsignalized	11.1	B	11.0	B
24 Golden State/Veterans	signal	--	--	--	--
25 Grantland/Bullard	unsignalized	17.4	C	14.4	B
26 99 NB Ramps/Veterans	signal	--	--	--	--
27 99 SB Ramps/Veterans	signal	--	--	--	--
28 Carnegie/Bullard	unsignalized	40.1	E	>50	F
29 Golden State/Carnegie	unsignalized	45.9	E	23.3	C
30 Dante/Bullard	unsignalized	10.9	B	10.6	B
31 Palm/Bullard	signal	37.7	D	43.9	D
32 Veterans/Bryan	signal	--	--	--	--
33 Grantland/Barstow	unsignalized	12.1	B	10.3	B
34 99 SB Ramps/Shaw	signal	42.2	D	27.5	C
35 99 NB Ramps/Shaw	signal	17.2	B	18.7	B
36 Golden State/Shaw	signal	38.3	D	>80	F
37 Figarden/Shaw	signal	24.1	C	38.6	D
38 Marks/Shaw	signal	26.0	C	38.9	D
39 West/Shaw	signal	26.8	C	33.5	C
40 99 SB Ramps/Ashlan	signal	22.1	C	22.0	C
41 99 NB Ramps/Ashlan	signal	38.3	D	61.8	E

All the other study area intersections are currently operating with satisfactory levels of service (LOS D or better for City intersections, and LOS C or better for Caltrans facilities).

Signal Warrant Analysis

Since five unsignalized intersections (Parkway Drive/Herndon Avenue, SR 99 southbound ramps/Herndon Avenue, SR 99 northbound ramps/Herndon Avenue, Carnegie Avenue/Bullard Avenue, and Golden State Boulevard/Carnegie Avenue) currently operate with unsatisfactory LOS, a peak hour traffic signal warrant analysis consistent with the California MUTCD was conducted. Appendix D contains the signal warrant analysis worksheets. Based on the peak hour signal warrant analysis all of these unsignalized intersections meet the minimum volumes of the MUTCD peak hour warrant criteria.

Queuing Analysis

Table 6-2A presents the results of the existing weekday a.m. and p.m. peak hour queuing analysis based on the Synchro LOS analysis and the calculated 95th percentile queue lengths for each left- and/or right turn storage lane for each study area intersection. Based on the queuing analysis, the following intersections currently have 95th percentile queues that exceed the storage lengths of one or more movements:

- Golden State Boulevard/Herndon Avenue (SBL)
- Polk Avenue/Herndon Avenue (WBL)
- Brawley Avenue/Herndon Avenue (NBL, NBR, SBL, SBR, EBL, and WBL)
- Marks Avenue/Herndon Avenue (NBR and SBR)
- West Avenue/Herndon Avenue (NBR and SBL)
- Palm Avenue/Herndon Avenue (NBL, SBR, EBL, and WBR)
- Blackstone Avenue/Herndon Avenue (SBR)
- Palm Avenue/Bullard Avenue (NBL, NBR, SBL, EBL, and WBL)
- SR 99 southbound ramps/Shaw Avenue (NBR and WBL)
- Golden State Boulevard/Shaw Avenue (NBR and WBL)
- Brawley Avenue/Shaw Avenue (NBL)
- Marks Avenue/Shaw Avenue (NBR)
- SR 99 northbound ramps/Ashlan Avenue (NBL and WBR)

Saturday Levels of Service

Table 6-1B presents the results of the existing Saturday peak hour LOS analysis for intersections adjacent to Phase 1, while detailed calculation worksheets are provided in Appendix C. According to table, the following study area intersections currently operate with unsatisfactory LOS (i.e., LOS E or F) in the Saturday peak hour:

Table 6-2A - Existing Weekday Queuing Analysis Summary

Signalized Intersection		Storage & 95th Percentile Queue Lengths (ft)							
		NBL	NBR	SBL	SBR	EBL	EBR	WBL	WBR
2 99 SB Ramps/Herndon	Storage Length[1]	--	--	1,400	60	--	--	--	--
	AM Queue[1]	--	--	11	11	--	--	--	--
	PM Queue[1]	--	--	13	13	--	--	--	--
3 99 NB Ramps/Herndon	Storage Length[1]	1,400		--	--	--	--	--	--
	AM Queue[1]	221		--	--	--	--	--	--
	PM Queue[1]	409		--	--	--	--	--	--
4 Golden State/Herndon	Storage Length[1]	185	50	260	150	100	80	80	480
	AM Queue[1]	66	31	264	42	59	0	57	47
	PM Queue[1]	57	40	417	25	88	0	65	52
6 Bryan/Herndon	Storage Length[1]	1,710	65	--	--	--	165	165	--
	AM Queue[1]	123	15	--	--	--	21	44	--
	PM Queue[1]	48	5	--	--	--	14	6	--
7 Hayes/Herndon	Storage Length[1]	140	--	100	--	350	250	250	125
	AM Queue[1]	20	--	6	--	60	8	59	7
	PM Queue[1]	10	--	6	--	112	13	35	9
9 Polk/Herndon	Storage Length[1]	140	--	200	160	225	100	250	100
	AM Queue[1]	48	--	52	15	7	25	84	27
	PM Queue[1]	38	--	71	16	10	51	276	31
10 Milburn/Herndon	Storage Length[1]	225	100	230	100	230	135	230	140
	AM Queue[1]	46	38	147	15	65	30	34	27
	PM Queue[1]	54	26	54	17	101	29	37	33
11 Blythe/Herndon	Storage Length[1]	235	235	120	--	--	140	220	140
	AM Queue[1]	0	0	28	--	--	3	3	17
	PM Queue[1]	2	0	31	--	--	3	6	28
12 Brawley/Herndon	Storage Length[1]	105	75	80	80	290	--	310	--
	AM Queue[1]	203	23	124	54	83	--	93	--
	PM Queue[1]	365	124	525	112	480	--	357	--
13 Marks/Herndon	Storage Length[1]	245	125	160	160	145	50	280	190
	AM Queue[1]	73	149	150	47	72	46	154	53
	PM Queue[1]	60	112	159	182	103	45	163	55
14 West/Herndon	Storage Length[1]	175	65	185	350	260	200	275	140
	AM Queue[1]	45	146	336	23	36	41	182	33
	PM Queue[1]	79	472	276	52	61	43	161	133
15 Palm/Herndon	Storage Length[1]	145	280	250	230	245	190	210	145
	AM Queue[1]	68	53	81	412	366	36	134	260
	PM Queue[1]	243	25	218	1,034	540	32	151	148
16 Blackstone/Herndon	Storage Length[1]	250	110	240	90	250	160	250	100
	AM Queue[1]	47	38	92	47	69	39	50	64
	PM Queue[1]	84	32	129	215	67	89	69	73
17 Grantland/Parkway	Storage Length[1]	420	80	--	--	--	--	--	--
	AM Queue[1]	91	91	--	--	--	--	--	--
	PM Queue[1]	26	26	--	--	--	--	--	--
18 Bryan/Palo Alto	Storage Length[1]	--	--	180	--	--	--	730	150
	AM Queue[1]	--	--	37	--	--	--	1	79
	PM Queue[1]	--	--	5	--	--	--	0	8
25 Grantland/Bullard	Storage Length[1]	--	--	250	--	250	100	100	100
	AM Queue[1]	--	--	5	--	8	1	1	27
	PM Queue[1]	--	--	5	--	5	0	1	7
31 Palm/Bullard	Storage Length[1]	120	55	90	70	150	150	140	--
	AM Queue[1]	57	45	101	38	135	21	127	--
	PM Queue[1]	212	84	92	61	156	23	211	--
34 99 SB Ramps/Shaw	Storage Length[1]	1,330	50	--	--	--	200	110	--
	AM Queue[1]	48	58	--	--	--	53	529	--
	PM Queue[1]	64	61	--	--	--	40	414	--
35 99 NB Ramps/Shaw	Storage Length[1]	--	--	1,300	50	120	--	--	230
	AM Queue[1]	--	--	32	39	76	--	--	34
	PM Queue[1]	--	--	70	43	43	--	--	40
36 Golden State/Shaw	Storage Length[1]	140	140	165	165	180	180	190	190
	AM Queue[1]	28	170	160	16	39	16	317	24
	PM Queue[1]	71	739	156	21	42	35	518	83
37 Brawley/Shaw	Storage Length[1]	260	100	220	130	220	130	200	120
	AM Queue[1]	56	23	64	37	39	24	41	20
	PM Queue[1]	122	57	163	46	139	40	82	52
38 Marks/Shaw	Storage Length[1]	190	105	240	270	235	135	275	155
	AM Queue[1]	63	130	103	101	67	25	54	22
	PM Queue[1]	185	51	110	152	226	63	138	56
39 West/Shaw	Storage Length[1]	240	75	185	115	240	155	210	125
	AM Queue[1]	73	62	58	41	48	29	61	24
	PM Queue[1]	76	26	51	41	72	27	99	37
40 99 SB Ramps/Ashlan	Storage Length[1]	100	100	360	110	--	100	575	--
	AM Queue[1]	18	74	74	0	--	16	88	--
	PM Queue[1]	37	37	83	0	--	28	263	--
41 99 NB Ramps/Ashlan	Storage Length[1]	240	520	210	210	320	--	--	85
	AM Queue[1]	166	130	63	20	310	--	--	56
	PM Queue[1]	431	414	89	139	270	--	--	478

Notes:
[1] Storage length determined by field measurement and review of scaled aerial photography. AM & PM queue lengths determined in *Synchro*.
XXX-Denotes 95th percentile queue that would exceed the lane's storage capacity.

Table 6-1B – Existing Saturday Peak Hour Level of Service Summary

Intersection	Saturday Peak Hour		
	Control	Delay (sec/veh)	LOS
5. Weber Avenue/Herndon Avenue	unsignalized	25.9	D
6. Bryan Avenue/Herndon Avenue	signal	23.1	C
7. Hayes Avenue/Herndon Avenue	signal	28.2	C
18. Bryan Avenue/Palo Alto Avenue	unsignalized	9.1	A
19. Hayes Avenue/Palo Alto Avenue	unsignalized	7.7	A

According to the table, all intersections adjacent to Phase 1 currently operate with satisfactory LOS during the Saturday peak hour.

Queuing Analysis

Table 6-2B presents the results of the Saturday peak hour queuing analysis based on the Synchro LOS analysis and the calculated 95th percentile queue lengths for each left- and/or right turn storage lane for each study area intersection.

Based on the queuing analysis, both of the adjacent signalized intersections to Phase 1 would not have 95th percentile queues that would exceed the storage lengths of one or more movements.

Table 6-2B – Existing Saturday Intersection Queuing Analysis Summary

Intersection		Storage & 95th Percentile Queue Lengths (ft)							
		NBL	NBR	SBL	SBR	EBL	EBR	WBL	WBR
6. Bryan/Herndon	Storage Length[1]	1,710	65	--	--	--	165	165	--
	Peak Queue[1]	30	10	--	--	--	14	14	--
7. Hayes/Herndon	Storage Length[1]	140	--	100	--	350	250	250	125
	Peak Queue[1]	7	--	7	--	45	12	41	8
18. Bryan/Palo Alto	Storage Length[1]	--	--	180	--	--	--	730	150
	Peak Queue[1]	--	--	5	--	--	--	2	4

Note: [1] – Storage length determined by field measurement and review of scaled aerial photography. Peak hour queues determined in Synchro.

Roadway Levels of Service

Table 6-3 presents the results of the roadway segment level of service analysis for the existing condition. According to the City guidelines, if a roadway segment varies between the total number of lanes, the lowest number of lanes is to be analyzed for the entire roadway segment. Based on the roadway segment analysis, the following roadway segments are operating with unsatisfactory LOS (LOS E or LOS F):

- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (westbound a.m. peak hour)
- Herndon Avenue: Brawley Avenue to Marks Avenue (eastbound a.m. peak hour and westbound p.m. peak hour)
- Herndon Avenue: West Avenue to Palm Avenue (westbound p.m. peak hour)
- Golden State Boulevard: Shaw Avenue to Ashlan Avenue (northbound p.m. peak hour)

Table 6-3 - Existing Roadway Segment Level of Service Summary

		Existing							
		AM Peak Hour				PM Peak Hour			
Roadway Segment	No. of Lanes	EB/NB Volume	LOS[1]	WB/SB Volume	LOS[1]	EB/NB Volume	LOS[1]	WB/SB Volume	LOS[1]
Herndon Avenue									
Parkway to SR 99 SB Ramps	1	304	C	796	D	209	C	637	D
SR 99 SB Ramps to SR 99 NB Ramps	1	320	C	769	D	251	C	589	C
SR 99 NB Ramps to Golden State	1	654	D	745	D	784	D	524	C
Golden State to Weber	2	802	C	1,069	C	1,092	C	759	C
Weber to Bryan	2	789	C	1,181	C	1,091	C	783	C
Bryan to Hayes	2	644	C	978	C	962	C	716	C
Hayes to Veterans	2	669	C	943	C	881	C	739	C
Veterans to Polk	2	722	C	924	C	873	C	736	C
Polk to Milburn	2	1,032	C	943	C	1,118	C	1,072	C
Milburn to Blythe	3	1,223	C	801	C	945	C	1,115	C
Blythe to Brawley	2	1,306	C	852	C	1,004	C	1,194	C
Brawley to Marks	2	1,711	E	1,041	C	1,300	C	1,736	E
Marks to West	3	2,159	D	1,448	C	1,579	C	2,257	D
West to Palm	3	2,503	D	1,743	C	1,970	C	2,575	E
Palm to Blackstone	3	1,967	C	1,482	C	1,773	C	2,026	C
e/o Blackstone	3	1,864	C	1,543	C	1,645	C	1,588	C
Parkway Drive									
Herndon and Grantland	1	263	C	673	D	162	C	521	D
Bryan Avenue									
Herndon to Palo Alto	1	401	C	306	C	78	C	91	C
Palo Alto to Veterans	1	46	C	12	C	10	C	23	C
Veterans to Sierra	--	--	--	--	--	--	--	--	--
Sierra and Carnegie	1	199	C	168	C	115	C	45	C
Carnegie to Dante	2	523	C	198	C	261	C	584	C
Palo Alto Avenue									
Bryan to Hayes	1	297	C	358	C	131	C	72	C
Hayes Avenue									
Herndon to Palo Alto	1	182	C	266	C	93	C	114	C
Palo Alto to Veterans	1	192	C	134	C	53	C	84	C
Veterans Avenue									
Hayes to Herndon	--	--	--	--	--	--	--	--	--
Bryan to Hayes	--	--	--	--	--	--	--	--	--
Golden State to Bryan	--	--	--	--	--	--	--	--	--
SR 99 NB Ramps to GS	--	--	--	--	--	--	--	--	--
SR 99 SB Ramps to SR 99 NB Ramps	--	--	--	--	--	--	--	--	--
Bryan(2) to SR 99 SB Ramps	--	--	--	--	--	--	--	--	--
Sierra Avenue									
Bryan to Polk	1	204	C	154	C	89	C	127	C
Polk Avenue									
Herndon to Sierra	1	394	C	231	C	319	C	435	C
Golden State Boulevard									
Herndon to Veterans	1	245	C	131	C	262	C	242	C
Veterans to Carnegie	1	228	C	100	C	179	C	208	C
Carnegie to Shaw	1	336	C	498	D	688	D	318	C
Shaw to Ashlan	1	656	D	623	D	1,228	F	584	D
Shaw Avenue									
w/o SR 99 SB Ramps	1	903	F	680	D	741	D	1,056	F
SR 99 SB Ramps to SR 99 NB Ramps	1-2	813	F	1,134	D	859	F	1,401	D
SR 99 NB Ramps to Golden State	2	811	C	1,117	C	1,055	C	1,461	D
Golden State to Brawley	3	1,219	C	1,141	C	1,718	C	1,863	D
Brawley to Marks	3	1,352	C	1,206	C	1,828	D	1,921	D
Marks to West	3	1,701	C	1,157	C	1,537	C	1,633	C
e/o West	3	1,588	C	1,049	C	1,375	C	1,577	C
Grantland Avenue									
Parkway to Bullard	1	429	C	200	C	191	C	234	C
Bullard to Barstow	1	251	C	142	C	113	C	168	C
Palm Avenue									
Herndon to Bullard	2	1,002	C	956	C	1,059	C	988	C
Dante Avenue									
Polk to Bullard	1	165	C	154	C	136	C	145	C
Carnegie Avenue									
Golden State to Bullard	1	251	C	554	D	666	D	273	C
Ashlan Avenue									
SR 99 SB Ramps to SR 99 NB Ramps	2	1,617	D	737	C	1,367	D	1,504	D

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* , for State Two-Way Arterials (Class II) & Non-State Roadways.

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact

- Shaw Avenue: west of SR 99 southbound ramps (eastbound a.m. peak hour and westbound p.m. peak hour)
- Shaw Avenue: SR 99 southbound ramps to SR 99 northbound ramps (both directions both peak hours)
- Ashlan Avenue: SR 99 southbound ramps to SR 99 northbound ramps (eastbound a.m. peak hour and both directions p.m. peak hour)

Freeway Facilities Level of Service Analyses

Existing (2006) AADT was obtained from the Caltrans Traffic and Vehicle Data Systems Unit webpage. The K and D factors used to get the peak hour directional volumes were obtained from the *Peak Hour Volume Data Report* on the Caltrans Traffic Data Branch website. The truck percentages were also obtained from the Caltrans Traffic Data Branch website.

Mainline Levels of Service

Table 6-4 presents the existing freeway level of service summary. Appendix E contains the freeway LOS worksheets. According to Caltrans criteria, any segment operating at a LOS D or worse is considered deficient. Based on the table, all SR 99 study area freeway segments are operating with satisfactory LOS (LOS C or better) in the a.m. peak hour in both directions. However, all study freeway segments, except Herndon Avenue to Shaw Avenue in the southbound direction, are currently operating at an unsatisfactory LOS D.

Table 6-4 – Existing Freeway Segment Level of Service Summary

Freeway	From	To	Density	LOS
Northbound AM				
SR 99	Herndon Avenue	Avenue 7	21.1	C
	Veterans Boulevard	Herndon Avenue	19.3	C
	Shaw Avenue	Veterans Boulevard		
	Ashlan Avenue	Shaw Avenue	20.8	C
	Dakota Avenue	Ashlan Avenue	18.6	C
Southbound AM				
SR 99	Avenue 7	Herndon Avenue	23.8	C
	Herndon Avenue	Veterans Boulevard	21.7	C
	Veterans Boulevard	Shaw Avenue		
	Shaw Avenue	Ashlan Avenue	23.5	C
	Ashlan Avenue	Dakota Avenue	21.0	C
Northbound PM				
SR 99	Herndon Avenue	Avenue 7	31.5	D
	Veterans Boulevard	Herndon Avenue	27.9	D
	Shaw Avenue	Veterans Boulevard		
	Ashlan Avenue	Shaw Avenue	30.6	D
	Dakota Avenue	Ashlan Avenue	26.7	D
Southbound PM				
SR 99	Avenue 7	Herndon Avenue	28.3	D
	Herndon Avenue	Veterans Boulevard	25.4	C
	Veterans Boulevard	Shaw Avenue		
	Shaw Avenue	Ashlan Avenue	27.6	D
	Ashlan Avenue	Dakota Avenue	24.5	D

Ramp Weaving Analysis

As previously described, the methodology shown in Figure 504.7A from the 2006 Caltrans Highway Design Manual (2006 HDM) was used to determine the freeway weaving LOS. The freeway weaving segments on SR 99 that were analyzed include the segment from Shaw Avenue to Herndon Avenue. Existing peak hour on- and off-ramp traffic volumes and mainline volumes were analyzed using Figure 504.7A from the Caltrans HDM. Results from this analysis are shown in Table 6-5. Detailed calculations shown on the Leisch nomographs are provided in Appendix F.

Table 6-5 – Existing (2007) Freeway Weaving Level of Service Summary

Weaving Section	Distance	# of Lanes	LOS AM	LOS PM
State Route 99 Northbound				
- Shaw Avenue to Herndon Avenue	1.8 miles	2	C	D
State Route 99 Southbound				
- Herndon Avenue to Shaw Avenue	1.8 miles	2	C	C

As shown in the table, the following weaving sections currently operate at an unsatisfactory LOS (LOS D or worse):

- SR 99 northbound: Shaw Avenue to Herndon Avenue (LOS D in the p.m. peak hour)

At-Grade Railroad Crossing Analysis

Surveys of existing conditions at the UPRR at-grade crossings at Herndon Avenue, Carnegie Avenue, and Shaw Avenue were conducted in early December 2007 over a period of three days. During those surveys, the data collected consisted of the following: 1) time of day for rail crossings; 2) length of time for rail crossings (from gate arms down, to gate arms up); 3) number of train's locomotives and boxcars; 4) estimated number of vehicles stopped on both sides of tracks; and 5) speed of train. Appendix G contains the raw survey data.

Table 6-6 summarizes the number of train movements through the crossing locations for each survey day.

Table 6-6 – Existing Number of Train Crossings, per Peak Hour, Peak Period, and Day

Survey Date	Peak Hour AM	Peak Hour PM	Peak Period (2-hour) AM	Peak Period (2-hour) PM	12-hour Day (7AM – 7PM)
Wednesday, 12/12/2007	1 train	1 train	1 train	1 train	10 trains
Thursday, 12/13/2007	2 trains	0 trains	3 trains	0 trains	12 trains
Saturday 12/15/2007	1 train (midday peak hour)		2 trains (midday peak period)		11 trains

Based on the table, in general an average of 11 trains pass through the three crossing locations during a 12-hour period of a weekday (7:00 a.m. to 7:00 p.m.). During the weekday a.m. peak period, as much as three trains pass through the crossings; while as much as one train passes through the crossings during the weekday p.m. peak period. During a Saturday, as much as two trains pass through the crossings during the midday; with 11 trains passing through during the day (7:00 a.m. to 7:00 p.m.).

Using the *Highway Capacity Manual* (HCM) "Back of Queue" queuing methodology to analyze the vehicular queuing, Table 6-7 presents the at-grade railroad crossing analysis summary for the existing condition. The HCM calculation sheets are provided in Appendix H.

Table 6-7 – Existing Condition At-Grade Railroad Crossing Analysis Summary

Crossing Location	Peak Hour [1]	Rail Crossing Time (seconds) [2]	Vehicular Queue (feet) [3]		Impact to Adjacent Major Intersection [4]			
			e/o tracks	w/o tracks	e/o tracks		w/o tracks	
Herndon Avenue	AM	205	1,025	724	No	1,705 ft to Bryan Ave	No	725 ft to SR 99 NB ramps
	PM	156	514	792	No		Yes	
Carnegie Avenue	AM	243	935	400	Yes	720 ft to Bullard Ave	Yes	75 ft to Golden State Blvd
	PM	110	182	577	No		Yes	
Shaw Avenue	AM	300	1,699	1,870	Yes	1,560 ft to Blythe Ave	No	2,600 ft to SR 99 NB ramps
	PM	235	2,513	2,880	Yes		Yes	

[1] - Based on observed train crossings in 2007 within the AM and PM peak commute hours.

[2] - Based on time that train crossing gate arms go down, to time gate arms go up.

[3] - Vehicle queue determined using *Highway Capacity Manual* (HCM) "Back of Queue Equation".

[4] – Impact based on whether vehicular queue would extend to an adjacent major intersection. For Herndon and Shaw Avenues the major intersection west of tracks will be the northbound ramp intersections with SR 99, rather than the closely spaced intersections with Golden State Blvd/Herndon Ave (125 ft) and Golden State Blvd/Shaw Ave (50 ft).

According to the table, at the Herndon Avenue crossing currently has vehicular queues from the crossing toward the SR 99 northbound off-ramp in the p.m. peak hour. The Carnegie Avenue crossing has queues extending from the crossing, west to Golden State Boulevard, and east to Bullard Avenue in one or both peak hours. Similarly, the Shaw Avenue crossing has queues extending from the crossing, west to SR 99 northbound ramps, and east to Blythe Avenue in one or both peak hours.

Transit Service

Public transit bus service in the Fresno area is provided by the Fresno Area Express (FAX) and Clovis Transit. FAX operates seven days a week and provides 20 transit routes within the metro Fresno area. Clovis Transit provides five transit routes to the Clovis area, with transfer stations to the FAX routes. Currently, there are no existing service routes in the project area. The closest FAX transit route to the project site is Route 45 (W Herndon/Fruit/Ashlan/Fowler) and Route 22 (N West Avenue/CD/E Tulare).

In addition, train service is provided to the greater Fresno area by Amtrak California. One train route (San Joaquin Route) services Fresno, which provides destinations to the Bay Area the north and Bakersfield to the south. Amtrak bus services provide connections to cities adjacent to the San Joaquin Route.

Pedestrian and Bicycle Facilities

Currently there are no adopted bicycle facilities in the immediate project vicinity along Herndon Avenue. However, there are existing bike lanes along Polk Avenue and Bullard Avenue. In addition, since a majority of the project site is unimproved, there are no dedicated pedestrian facilities in the immediate project vicinity along the project frontages on Herndon Avenue and Bryan Avenue.

7.0 YEARS 2010, 2012, 2017, 2019 and BUILDOUT 2025 BASELINE TRAFFIC

Year 2010 Baseline Condition

The proposed project's Phase 1 "opening year" was determined to be 2010 in which Phase 1 would be completely constructed and fully occupied. Per direction from the City Traffic Engineer, year 2010 traffic volumes were calculated using a manual "build-up" method of base existing (2007) traffic volumes, plus application of a 2010 ambient growth rate determined from the Fresno COG travel model, and the addition of traffic from a list of cumulative (approved and/or pending) projects that would generate traffic in the project study area. Figure 7-1 illustrates the locations of the cumulative projects that would affect the study area.

Street Network and Intersection Geometrics

Figure 7-2 illustrates the future roadway and intersection improvements in the study area, by year of completion, based on discussions with the City Public Works Department. The following lists network improvements in the study area assumed for the 2010 baseline condition:

- Intersection capacity improvements at Golden State Boulevard/Herndon Avenue consisting of the following geometrics: northbound dual left turn lanes, two through lanes, and one right turn lane; southbound dual left turn lanes, two through lanes, and one right turn lane; eastbound dual left turn lanes, three through lanes, and one right turn lane; and westbound left turn lane, two through lanes, and one right turn lane. This improvement project is funded through the City's TSMI fee. Per the City Public Works Department, the construction completion date is June 2009.

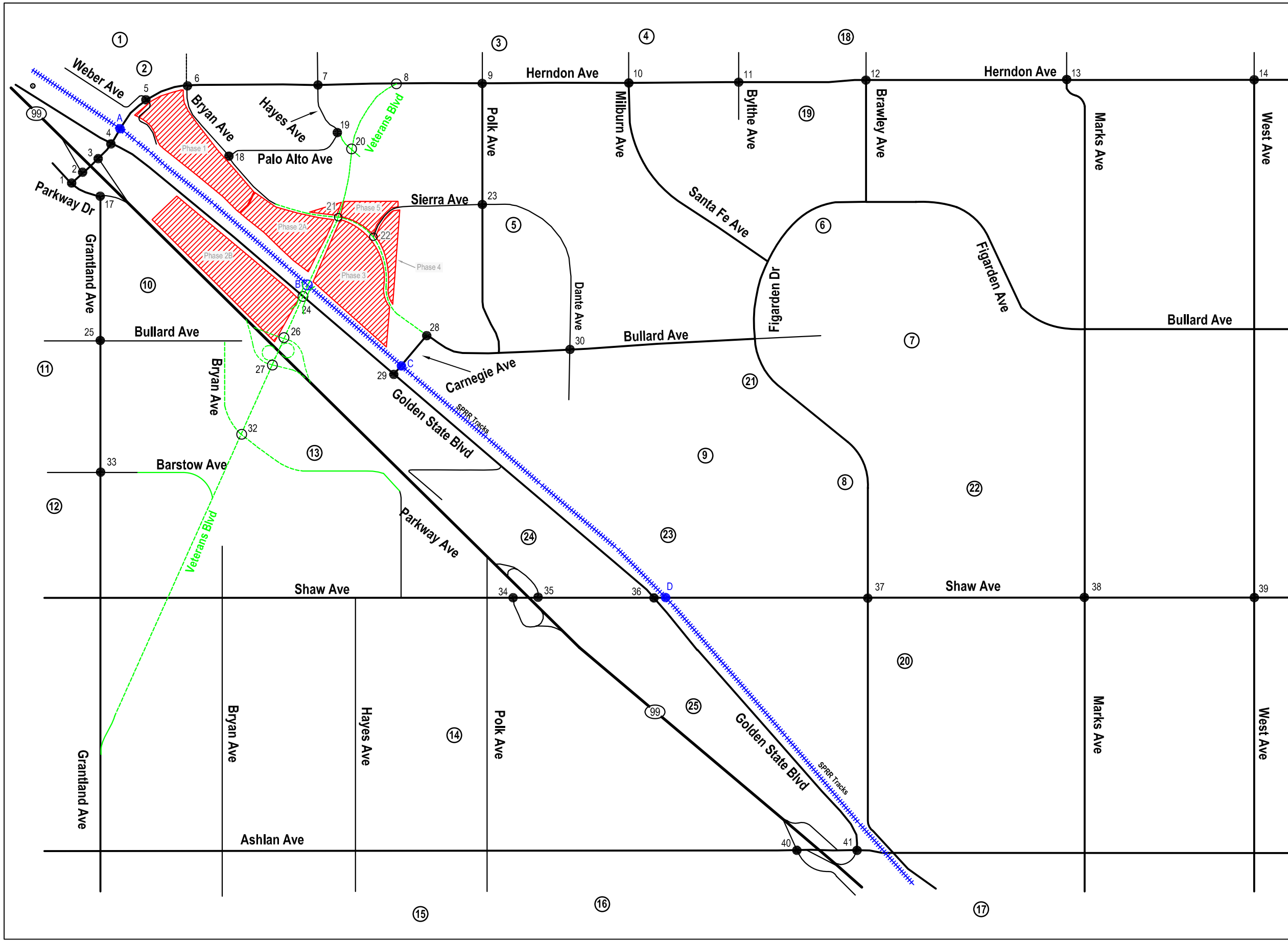
Existing geometrics and traffic control plus the improvements listed above have been assumed for the 2010 baseline scenario.

2010 Baseline Traffic Volumes

Year 2010 traffic volumes were calculated using a manual "build-up" method of base existing (2007) traffic volumes, plus application of a 2010 ambient growth rate determined from the Fresno COG travel model, and the addition of traffic from a list of cumulative (approved and/or pending) projects that would generate traffic in the project study area. Based on research conducted at the City's Planning Department, approximately 70 cumulative projects were determined to generate traffic in the study area.

Tables 7-1A and 7-1B summarize the trip generation estimates of the cumulative projects within the study area for the weekday peak hours and the Saturday peak hour, respectively. Based on the tables, during a typical weekday, the cumulative projects in the study area would generate a total of 89,280 daily trips, 5,536 a.m. peak hour trips, and 8,189 p.m. peak hour trips. During a typical Saturday, the cumulative projects in the study area would generate a total of 100,835 daily trips, and 8,920 peak hour trips.

To determine the 2010 Baseline condition, traffic generated from cumulative projects within the study area was added to the existing traffic volumes in addition to an ambient growth factor. Figures 7-3A and 7-3B present the intersection turning volumes for the Year 2010 baseline weekday a.m. and p.m. peak hours and Saturday peak hour, respectively. Appendix I contains the land use data for the cumulative projects in the study area.

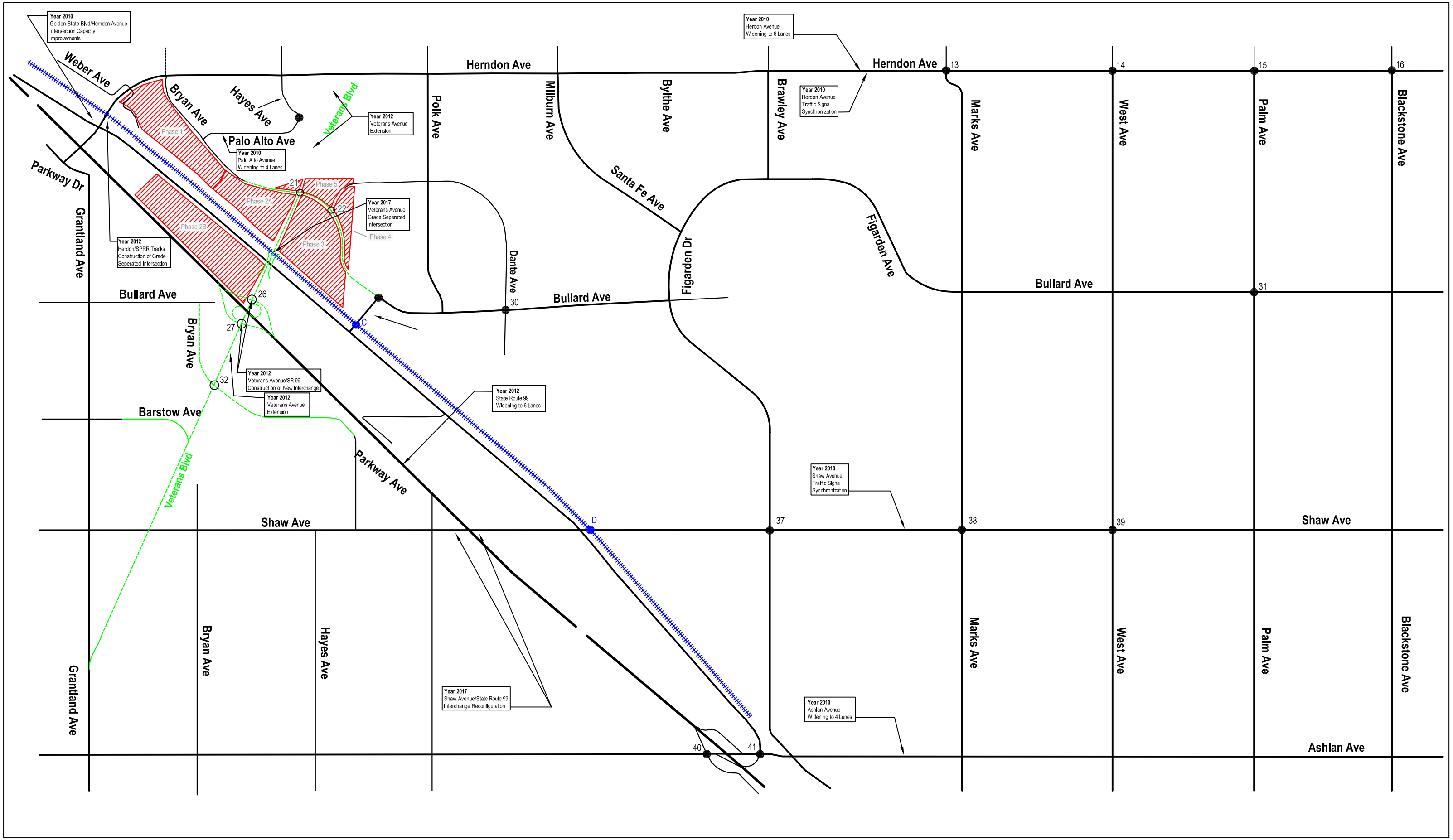


Cumulative Project List

Group	TTM/APP #	Group	TTM/APP #
1	5358 C-07-135 C-07-135 C-07-135	14	5400 5379 5599
2	5595 C-03-086 C-04-246	15	5537 5316
3	5555 S-07-048	16	5356 5489 4983
4	4764 C-03-170	17	5326 5453 5148
5	5527 5666	18	S-06-275
6	5278 4422 C-06-090 C-07-157 C-03-067	19	A-07-020 A-07-020
7	5455 5433	20	S-07-038
8	5649	21	S-05-307 S-05-306 S-06-228
9	5098 5315 5184 5388	22	C-03-007 C-04-062
10	5357	23	S-05-205 S-03-377 S-05-462 S-06-237
11	5614 5338	24	S-05-581 S-05-160 S-06-164 S-06-216 S-06-216 C-07-096 S-07-011
12	5600	25	S-03-205 S-04-251 S-05-347 C-06-194 S-07-012
13	5224 5363	26	C-04-316

DKS Associates
TRANSPORTATION SOLUTIONS

Figure 7-1
Location of Cumulative Projects



DKS Associates
TRANSPORTATION SOLUTIONS

Figure 7-2
Future Study Area Cummulative Background Improvements

Table 7-1A - Weekday Cumulative Projects Trip Generation Estimates

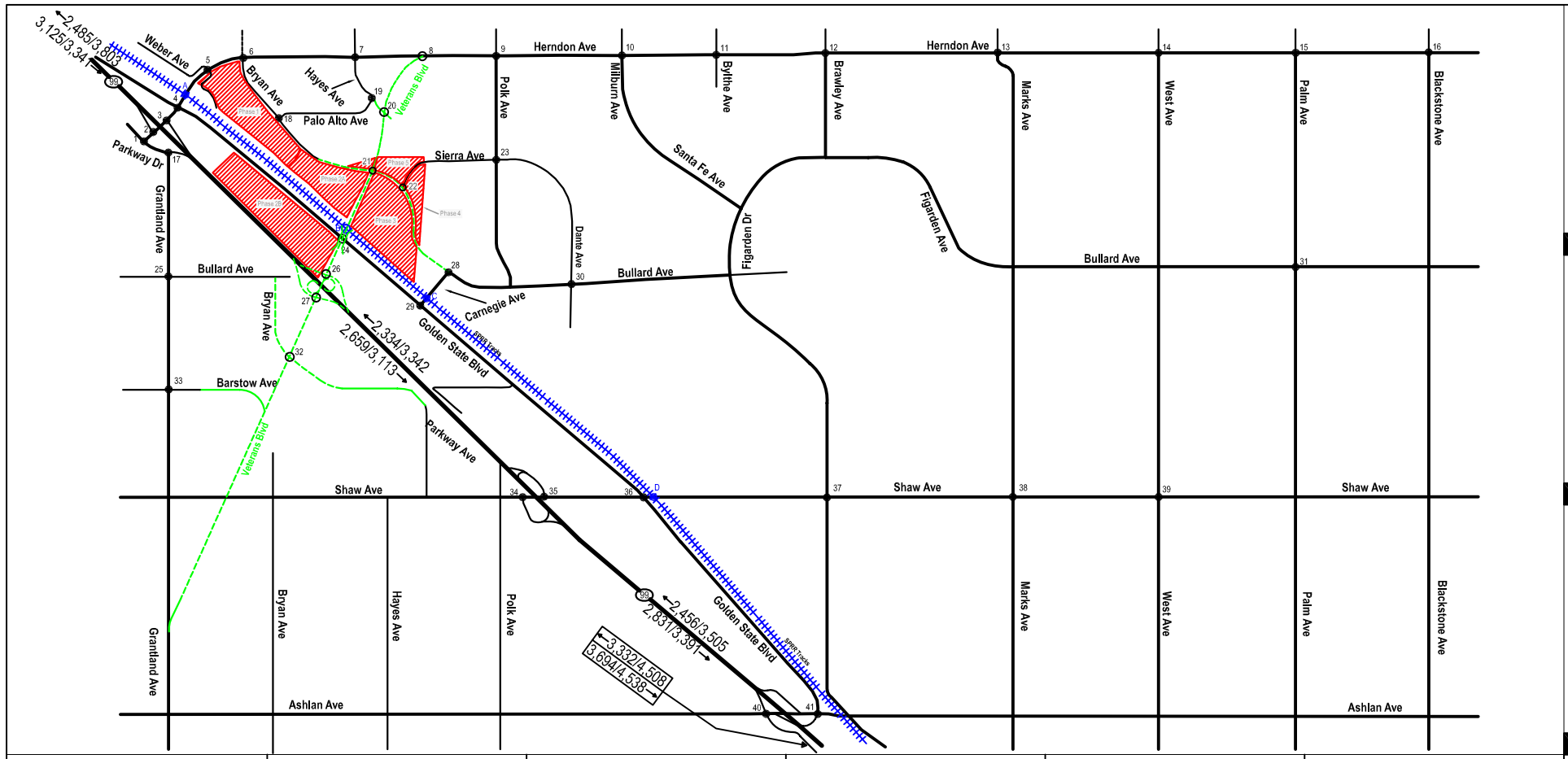
				Daily		A.M. Peak Hour						P.M. Peak Hour					
TTM/Application Number	Land Use	SIZE		Rate	Trips	Rate	In	Out	In	Out	Total	Rate	In	Out	In	Out	Total
4422	Single Family Detached Housing	7	DU	9.57	67	0.75	0.25	0.75	1	4	5	1.01	0.62	0.37	4	3	7
5098	Single Family Detached Housing	120	DU	9.57	1,148	0.75	0.25	0.75	23	67	90	1.01	0.62	0.37	76	44	121
5184	Single Family Detached Housing	24	DU	9.57	230	0.75	0.25	0.75	5	13	18	1.01	0.62	0.37	15	9	24
5224	Single Family Detached Housing	189	DU	9.57	1,809	0.75	0.25	0.75	36	106	142	1.01	0.62	0.37	119	70	191
5278	Single Family Detached Housing	57	DU	9.57	545	0.75	0.25	0.75	11	32	43	1.01	0.62	0.37	36	21	58
5315	Single Family Detached Housing	21	DU	9.57	201	0.75	0.25	0.75	4	12	16	1.01	0.62	0.37	13	8	21
5338	Single Family Detached Housing	123	DU	9.57	1,177	0.75	0.25	0.75	23	69	92	1.01	0.62	0.37	77	46	124
5357	Single Family Detached Housing	117	DU	9.57	1,120	0.75	0.25	0.75	22	66	88	1.01	0.62	0.37	74	43	118
5358	Single Family Detached Housing	231	DU	9.57	2,211	0.75	0.25	0.75	44	129	173	1.01	0.62	0.37	146	85	233
5358	Residential Condominium	144	DU	5.86	844	0.44	0.16	0.84	10	53	63	0.52	0.67	0.33	50	24	75
5363	Single Family Detached Housing	105	DU	9.57	1,005	0.75	0.25	0.75	20	59	79	1.01	0.62	0.37	66	39	106
5388	Single Family Detached Housing	42	DU	9.57	402	0.75	0.25	0.75	8	24	32	1.01	0.62	0.37	26	16	42
5433	Single Family Detached Housing	170	DU	9.57	1,627	0.75	0.25	0.75	32	95	128	1.01	0.62	0.37	107	63	172
5455	Single Family Detached Housing	203	DU	9.57	1,943	0.75	0.25	0.75	39	114	152	1.01	0.62	0.37	128	75	205
5527	Single Family Detached Housing	12	DU	9.57	115	0.75	0.25	0.75	2	7	9	1.01	0.62	0.37	8	4	12
5555	Single Family Detached Housing	35	DU	9.57	335	0.75	0.25	0.75	7	20	26	1.01	0.62	0.37	22	13	35
5595	Single Family Detached Housing	75	DU	9.57	718	0.75	0.25	0.75	14	42	56	1.01	0.62	0.37	47	28	76
5600	Single Family Detached Housing	283	DU	9.57	2,708	0.75	0.25	0.75	54	158	212	1.01	0.62	0.37	178	105	286
5614	Single Family Detached Housing	14	DU	9.57	134	0.75	0.25	0.75	3	8	11	1.01	0.62	0.37	9	5	14
5649	Single Family Detached Housing	141	DU	9.57	1,349	0.75	0.25	0.75	27	79	106	1.01	0.62	0.37	89	52	142
5666	Single Family Detached Housing	36	DU	9.57	345	0.75	0.25	0.75	7	20	27	1.01	0.62	0.37	23	13	36
5755	Residential Condominium	118	DU	5.86	691	0.44	0.16	0.84	8	44	52	0.52	0.67	0.33	41	20	61
4983	Single Family Detached Housing	58	DU	9.57	555	0.75	0.25	0.75	11	32	44	1.01	0.62	0.37	37	21	59
5148	Single Family Detached Housing	35	DU	9.57	335	0.75	0.25	0.75	7	20	26	1.01	0.62	0.37	22	13	35
5316	Single Family Detached Housing	252	DU	9.57	2,412	0.75	0.25	0.75	48	141	189	1.01	0.62	0.37	159	93	255
5326	Single Family Detached Housing	68	DU	9.57	651	0.75	0.25	0.75	13	38	51	1.01	0.62	0.37	43	25	69
5356	Single Family Detached Housing	9	DU	9.57	86	0.75	0.25	0.75	2	5	7	1.01	0.62	0.37	6	3	9
5379	Single Family Detached Housing	20	DU	9.57	191	0.75	0.25	0.75	4	11	15	1.01	0.62	0.37	13	7	20
5400	Single Family Detached Housing	231	DU	9.57	2,211	0.75	0.25	0.75	44	129	173	1.01	0.62	0.37	146	85	233
5453	Single Family Detached Housing	7	DU	9.57	67	0.75	0.25	0.75	1	4	5	1.01	0.62	0.37	4	3	7
5489	Single Family Detached Housing	78	DU	9.57	746	0.75	0.25	0.75	15	44	59	1.01	0.62	0.37	49	29	79
5537	Single Family Detached Housing	48	DU	9.57	459	0.75	0.25	0.75	9	27	36	1.01	0.62	0.37	30	18	48
5599	Single Family Detached Housing	61	DU	9.57	584	0.75	0.25	0.75	12	34	46	1.01	0.62	0.37	38	23	62
S-03-205	General Office	16.640	TSF	[2]	335	[2]	0.88	0.12	29	4	33	[2]	0.17	0.83	17	81	97
S-04-251	General Light Industrial by Acres	12.340	ACRES	51.80	639	7.51	0.83	0.17	77	16	93	7.26	0.22	0.78	20	70	90
S-05-347	General Office	85.000	TSF	11.01	936	1.55	0.88	0.12	116	16	132	1.49	0.17	0.83	21	105	127
C-06-194	New Car Sales	1.440	TSF	33.34	48	2.05	0.74	0.26	2	1	3	2.64	0.39	0.61	1	2	4
S-07-012	Warehousing	24.060	TSF	4.96	119	0.45	0.82	0.18	9	2	11	0.47	0.25	0.75	3	8	11
C-03-007	Apartment	296	DU	6.72	1,989	0.51	0.20	0.80	30	121	151	0.62	0.65	0.35	118	65	184
C-04-062	Senior Adult Housing Attached	68	DU	3.48	237	0.08	0.50	0.50	3	3	5	0.11	0.64	0.36	5	3	7
S-07-038	General Light Industrial	14.822	TSF	6.97	103	0.92	0.88	0.12	12	2	14	0.98	0.12	0.88	2	13	15
C-03-170	Retail	96.000	TSF	[2]	6,613	[2]	0.61	0.39	93	60	153	[2]	0.48	0.52	293	317	609
S-06-275	General Office	44.900	TSF	11.01	494	1.55	0.88	0.12	61	9	70	1.49	0.17	0.83	11	56	67
S-07-048	General Office	40.500	TSF	11.01	446	1.55	0.88	0.12	55	8	63	1.49	0.17	0.83	10	50	60
C-07-135	Free Standing Discount Super Store	208.770	TSF	49.21	10,274	1.84	0.51	0.49	196	188	384	3.87	0.49	0.51	397	411	808
C-07-135	Fast-Food Restaurant with Drive Through Window	6.500	TSF	496.12	3,225	53.11	0.51	0.49	176	169	345	34.64	0.52	0.48	117	108	225
C-07-135	Fast-Food Restaurant without Drive Through Window	3.000	TSF	716.00	2,148	43.87	0.60	0.40	79	53	132	26.15	0.51	0.49	40	38	78
C-03-086	New Car Sales	6.400	TSF	33.34	213	2.05	0.74	0.26	10	3	13	2.64	0.39	0.61	7	10	17
C-04-246	Single Family Detached Housing	141	DU	9.57	1,349	0.75	0.25	0.75	27	79	106	1.01	0.62	0.37	89	52	142
C-04-316	Fast-Food Restaurant with Drive Through Window	9.500	TSF	496.12	4,713	53.11	0.51	0.49	257	247	505	34.64	0.52	0.48	171	158	329
C-06-090	General Light Industrial	44.762	TSF	6.97	312	0.92	0.88	0.12	36	5	41	0.98	0.12	0.88	5	38	44
C-07-157	Mini-Warehousing	117.419	TSF	2.50	294	0.15	0.60	0.40	11	7	18	0.26	0.50	0.50	15	15	31
C-03-067	Apartment	272	DU	6.72	1,828	0.51	0.20	0.80	27	112	139	0.62	0.65	0.35	109	60	169
S-05-581	Apartment	6	DU	6.72	40	0.51	0.20	0.80	1	2	3	0.62	0.65	0.35	2	1	4
S-05-160	Retail	24.000	TSF	[2]	2,686	[2]	0.61	0.39	41	26	66	[2]	0.48	0.52	117	127	244
S-05-205	General Office	15.600	TSF	11.01	172	1.55	0.88	0.12	21	3	24	1.49	0.17	0.83	4	19	23
S-06-164	Single Family Detached Housing	1	DU	9.57	10	0.75	0.25	0.75	0	1	1	1.01	0.62	0.37	1	0	1
S-06-216	Fast-Food Restaurant without Drive Through Window	2.780	TSF	716.00	1,990	43.87	0.60	0.40	73	49	122	26.15	0.51	0.49	37	36	73
S-06-216	Convience Market	2.100	TSF	737.99	1,550	31.02	0.50	0.50	33	33	65	34.57	0.49	0.51	36	37	73
C-07-096	Hotel	72	RMS	8.17	588	0.56	0.61	0.39	24	16	40	0.59	0.53	0.47	22	20	42
S-07-011	Retail	12.892	TSF	42.94	554	1.03	0.61	0.39	8	5	13	3.75	0.48	0.52	23	25	48
S-03-377	General Office	12.000	TSF	11.01	132	1.55	0.88	0.12	16	2	19	1.49	0.17	0.83	3	15	18
S-05-462	Warehousing	8.000	TSF	4.96	40	0.45	0.82	0.18	3	1	4	0.47	0.25	0.75	1	3	4
S-05-307	Apartment	3	DU	6.72	20	0.51	0.20	0.80	0	1	2	0.62	0.65	0.35	1	1	2
S-05-306	Apartment	3	DU	6.72	20	0.51	0.20	0.80	0	1	2	0.62	0.65	0.35	1	1	2
S-06-237	Warehousing	24.000	TSF	4.96	119	0.45	0.82	0.18	9	2	11	0.47	0.25	0.75	3	8	11
S-06-228	General Office	27.600	TSF	11.01	304	1.55	0.88	0.12	38	5	43	1.49	0.17	0.83	7	34	41
A-07-020	Apartment	243	DU	6.72	1,633	0.51	0.20	0.80	24	100	124	0.62	0.65	0.35	97	53	151
A-07-021	Retail	36.000	TSF	[2]	3,496	[2]	0.61	0.39	52	33	85	[2]	0.48	0.52	153	166	319
4764	Retail	198.111	TSF	[2]	10,591	[2]	0.61	0.39	144	92	236	[2]	0.48	0.52	472	511	983
Totals					89,280				2,356	3,180	5,536				4,332	3,827	8,189

Notes: 1 Trip generation calculation performed using Institute of Transportation Engineers Trip Generation, 7th ed (ITE, 2003).

2 Trip generation performed using ITE Equation

Table 7-1B - Saturday Cumulative Projects Trip Generation Estimates

				Saturday Daily		Saturday Peak Hour					
Application Number	Land Use	SIZE		Rate	Trips	Rate	In	Out	In	Out	Total
S-03-205	General Office	16.64	TSF	[2]	54	[2]	0.54	0.46	5	4	9
S-04-251	General Light Industrial	12.34	ACRES	8.73	108	0.96	0.47	0.53	6	6	12
S-05-347	General Office	85	TSF	2.37	201	0.41	0.54	0.46	19	16	35
C-06-194	New Car Sales	1.44	TSF	21.03	30	2.97	0.51	0.49	2	2	4
S-07-012	Warehousing	24.06	TSF	1.22	29	0.12	0.64	0.36	2	1	3
C-03-007	Apartment	296	DU	6.39	1,891	0.52	0.50	0.50	77	77	154
C-04-062	Senior Adult Housing - Attached	68	DU	2.51	171	0.3	0.50	0.50	10	10	20
S-07-038	General Light Industrial	14.822	TSF	1.32	20	0.14	0.47	0.53	1	1	2
C-03-170	Shopping Center	96	TSF	[2]	9,005	[2]	0.52	0.48	438	405	843
S-06-275	General Office	44.9	TSF	2.37	106	0.41	0.54	0.46	10	9	18
S-07-048	General Office	40.5	TSF	2.37	96	0.41	0.54	0.46	9	8	17
C-07-135	Free-Standing Discount Superstore	208.77	TSF	57.5	12,004	5.01	0.51	0.49	534	511	1,046
C-07-135	Fast-Food Restaurant with Drive-Through	6.5	TSF	722.03	4,693	59.2	0.51	0.49	196	189	385
C-07-135	Fast-Food Restaurant without Drive-Through	3	TSF	696	2,088	26.15	0.51	0.49	40	38	78
C-03-086	New Car Sales	6.4	TSF	21.03	135	2.97	0.51	0.49	10	9	19
C-04-246	Single Family Detached Housing	141	DU	10.1	1,424	0.94	0.54	0.46	72	61	133
C-04-316	Fast-Food Restaurant with Drive-Through	9.5	TSF	722.03	6,859	59.2	0.51	0.49	287	276	562
C-06-090	General Light Industrial	44.762	TSF	1.32	59	0.14	0.47	0.53	3	3	6
C-07-157	Mini-Warehouse	117.419	TSF	2.33	274	0.4	0.50	0.50	23	23	47
C-03-067	Apartment	272	DU	6.39	1,738	0.52	0.50	0.50	71	71	141
S-05-581	Apartment	6	DU	6.39	38	0.52	0.50	0.50	2	2	3
S-05-160	Shopping Center	24	TSF	[2]	3,760	[2]	0.52	0.48	178	164	342
S-05-205	General Office	15.6	TSF	2.37	37	0.41	0.54	0.46	3	3	6
S-06-164	Single Family Detached Housing	1	DU	10.1	10	0.94	0.54	0.46	1	0	1
S-06-216	Fast-Food Restaurant without Drive-Through	2.78	TSF	696	1,935	26.15	0.51	0.49	37	36	73
S-06-216	Convenience Market	2.1	TSF	737.99	1,550	36.22	0.49	0.51	37	39	76
C-07-096	Hotel	72	RMS	8.19	590	0.59	0.53	0.47	22	20	42
S-07-011	Shopping Center	12.892	TSF	49.97	644	4.97	0.52	0.48	33	31	64
S-03-377	General Office	12	TSF	2.37	28	0.41	0.54	0.46	3	2	5
S-05-462	Warehousing	8	TSF	1.22	10	0.12	0.64	0.36	1	0	1
S-05-307	Apartment	3	DU	6.39	19	0.52	0.50	0.50	1	1	2
S-05-306	Apartment	3	DU	6.39	19	0.52	0.50	0.50	1	1	2
S-06-237	Warehousing	24	TSF	1.22	29	0.12	0.64	0.36	2	1	3
S-06-228	General Office	27.6	TSF	2.37	65	0.41	0.54	0.46	6	5	11
A-07-020	Apartment	243	DU	6.39	1,553	0.52	0.50	0.50	63	63	126
A-07-021	Shopping Center	36	TSF	[2]	4,854	[2]	0.52	0.48	232	214	446
4764	Shopping Center	198.111	DU	[2]	14,214	[2]	0.52	0.48	702	648	1,350
Totals					70,342				3,137	2,950	6,088



1 Parkway/Herndon
32/35 105/95 154/133 1054/1055 12/14 478/400

2 SR-99 SB Ramps/Herndon
39/74 26/45 1285/1185 585/493

3 SR-99 NB Ramps/Herndon
1234/1107 604/545 55/85 654/891

4 Golden State/Herndon
246/127 114/200 361/537 615/442 945/887 114/112 190/153 985/1148 66/75 62/82 200/193 79/153

5 Weber/Herndon
0/5 0/0 0/0 0/0 1714/1439 3/1 2/2 1403/1838 0/3 1/1 0/0 2/2

6 Bryan/Herndon
312/322 21/10 206/224 223/188 1353/1311 59/2 310/310 964/1507 287/118 299/88 5/11 154/3

7 Hayes/Herndon
144/48 129/12 21/18 12/27 1212/1238 162/81 67/123 1026/1375 9/34 54/27 32/13 114/52

8 Veterans/Herndon
proposed

9 Polk/Herndon
27/27 67/78 171/210 99/202 1205/1198 110/377 7/9 1113/1286 104/143 134/138 32/84 308/262

10 Milburn/Herndon
273/330 397/494 487/571 268/523 970/1258 90/102 255/458 1186/1138 169/167 150/173 286/547 147/65

11 Blythe/Herndon
1/10 0/1 56/66 56/66 1330/1892 2/4 0/1 1827/1767 1/1 0/2 1/0 0/4

12 Brawley/Herndon
45/61 94/84 66/28 25/63 1147/1650 370/484 74/58 1633/1459 196/352 155/327 98/95 421/410

13 Marks/Herndon
150/342 159/231 222/278 248/390 1338/2002 228/332 119/221 2176/1749 90/124 142/191 137/246 263/254

14 West/Herndon
48/161 103/151 250/214 130/308 1890/2684 335/305 62/99 2621/2040 176/175 91/163 77/143 306/461

15 Palm/Herndon
783/1044 728/818 173/309 375/217 1284/2104 247/276 943/933 2148/1669 108/66 153/172 800/882 219/180

16 Blackstone/Herndon
223/475 383/798 219/287 238/261 1583/1563 109/179 229/250 1953/1733 139/358 126/219 255/613 123/97

17 Grantland/Parkway-SR 99 SB On Ramp
822/559 365/571 540/443 183/62

18 Bryan/Palo Alto
11/23 330/65 397/77 2/2 50/9 1/2

19 Hayes/Palo Alto
286/89 11/49 175/90 142/55 186/45 41/27

20 Hayes/Veterans
proposed

21 Bryan/Veterans
proposed

22 Bryan/Sierra
proposed

23 Polk/Sierra
28/52 189/294 60/93 71/78 65/66 40/12 54/35 104/51 70/12 52/53 238/276 23/24

24 Golden State/Veterans
proposed

25 Grantland/Bullard
20/41 221/391 62/68 190/72 4/5 10/14 67/44 4/3 7/3 8/7 449/293 5/28

26 SR-99 NB Ramps/Veterans
proposed

27 SR-99 SB Ramps/Veterans
proposed

28 Bullard/Carnegie
144/39 44/13 103/105 209/747 542/373 120/25

29 Golden State/Carnegie
8/14 187/175 67/154 182/104 6/13 509/277 2/16 1/19 4/9 4/8 125/185 229/640

30 Dante/Bullard
52/30 14/15 103/34 33/49 289/296 28/62 19/112 177/498 40/62 185/62 12/7 20/10

31 Palm/Bullard
69/124 461/826 86/83 95/72 545/903 104/165 170/193 894/736 81/80 49/178 432/839 82/163

32 Bryan/Veterans
proposed

33 Grantland/Barstow
25/55 163/197 38/68 58/82 18/60 4/4 59/37 29/25 11/6 8/12 307/178 6/2

34 SR-99 SB Ramps/Shaw
846/1494 571/502 896/808 487/275 65/96 267/292

35 SR-99 NB Ramps/Shaw
254/323 145/328 259/359 1157/1644 112/63 1033/1084

36 Golden State/Shaw
30/40 379/270 213/207 161/277 1126/1743 370/434 36/45 1004/1312 38/52 17/46 301/583 526/892

37 Brawley/Shaw
145/170 684/438 235/427 94/245 1127/1816 121/205 103/290 1191/1703 73/151 170/276 230/769 64/151

38 Marks/Shaw
403/425 509/441 279/219 59/171 943/1512 144/310 247/573 1432/1472 101/222 181/432 408/670 384/189

39 West/Shaw
158/175 419/489 148/134 67/116 1065/1572 155/264 122/224 1578/1414 146/125 200/232 538/353 266/130

40 SR-99 SB Ramps/Ashlan
73/90 27/103 161/153 501/1202 137/382 1466/1043 35/65 20/51 403/495

41 SR-99 NB Ramps/Ashlan
210/374 179/201 295/698 537/930 344/240 1103/1116 262/582 15/21 487/841

LEGEND

Project Site

Study Intersection

XX/YY AM/PM Peak Hour Volumes

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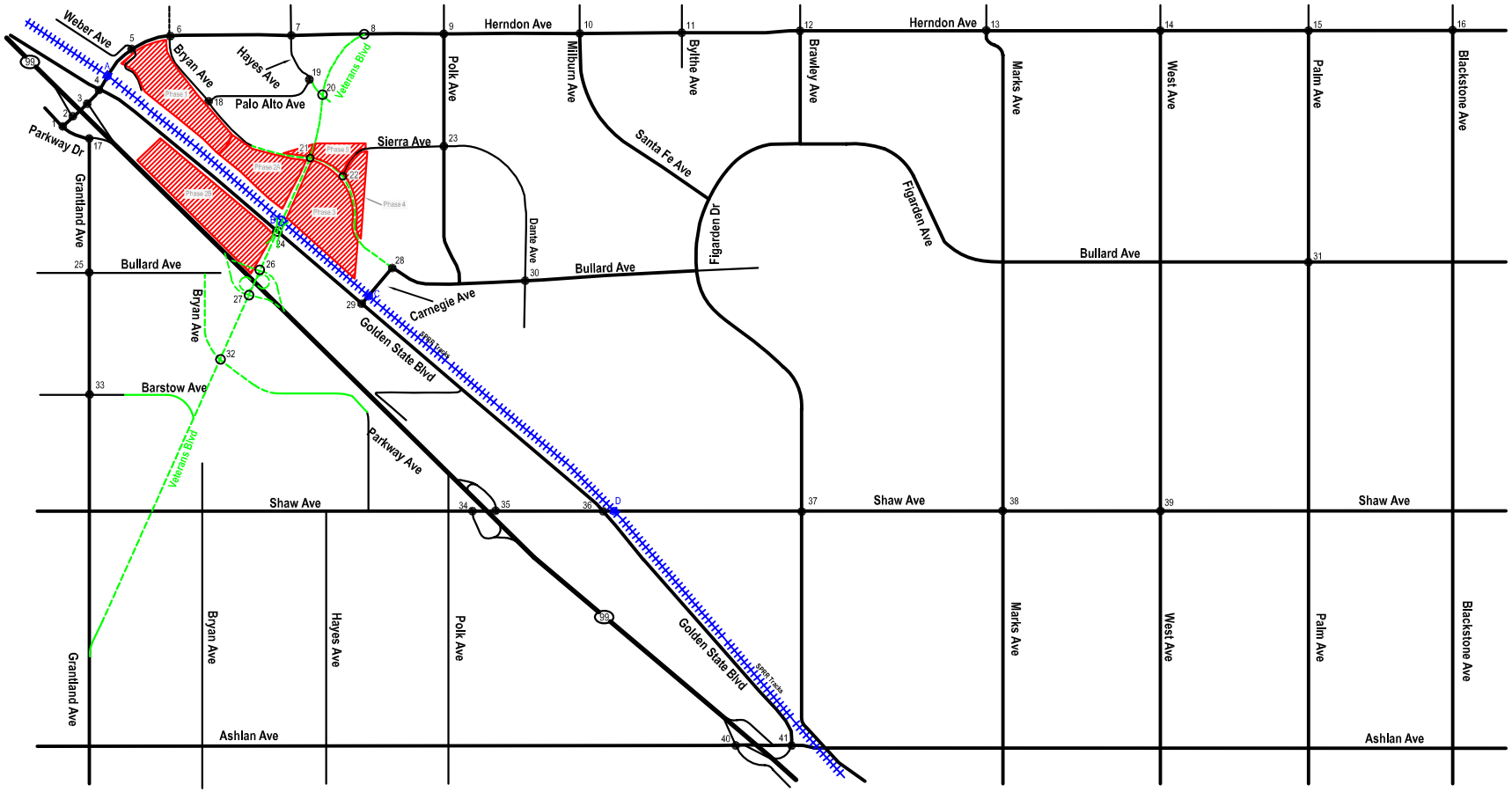
Figure 7-3A
Year 2010 Baseline Weekday AM and PM Peak Hour Traffic Volumes


Weber Ave
Bryan Ave
Hayes Ave
Palo Alto Ave
Veterans Blvd
Herndon Ave
Polk Ave
Milburn Ave
Bythe Ave
Brawley Ave
Marks Ave
West Ave
Palm Ave
Blackstone Ave
Parkway Dr
Grantland Ave
Sierra Ave
Santa Fe Ave
Figarden Dr
Figarden Ave
Dante Ave
Bullard Ave
Carnegie Ave
Golden State Blvd
Barstow Ave
Parkway Ave
Shaw Ave
Ashlan Ave
Phase 1
Phase 2
Phase 3
Phase 4
Phase 5
Phase 6
Phase 7
Phase 8
Phase 9
Phase 10
Phase 11
Phase 12
Phase 13
Phase 14
Phase 15
Phase 16
Phase 17
Phase 18
Phase 19
Phase 20
Phase

2010 Baseline Intersection Levels of Service

Year 2010 baseline traffic volumes were input into Synchro to evaluate levels of service. Tables 7-2A and 7-2B present the resulting LOS for the study intersections for the weekday peak hours and Saturday peak hour, respectively. The Saturday intersection LOS results are only for the intersections adjacent to Phase 1 of the Master Plan. According to the tables, the following study area intersections are forecast to operate with an unsatisfactory LOS (i.e. LOS E or F for City intersections, and LOS D, E, or F for Caltrans facilities) in the 2010 baseline condition in the weekday and Saturday, respectively:

Weekday LOS

- Parkway Drive/Herndon Avenue (LOS F in the a.m. and p.m. peak hours)
- SR 99 southbound ramps/Herndon Avenue (LOS F in the a.m. and p.m. peak hours)
- SR 99 northbound ramps/Herndon Avenue (LOS F in the a.m. and p.m. peak hours)
- Weber Avenue/Herndon Avenue (LOS F in the a.m. and p.m. peak hours)
- Bryan Avenue/Herndon Avenue (LOS E in the a.m. peak hour)
- Brawley Avenue/Herndon Avenue (LOS F in the a.m. and p.m. peak hours)
- Marks Avenue/Herndon Avenue (LOS E in the a.m. and p.m. peak hours)
- West Avenue/Herndon Avenue (LOS F in the p.m. peak hour)
- Palm Avenue/Herndon Avenue (LOS E in the a.m. peak hour and LOS F in the p.m. peak hour)
- Grantland Avenue/Parkway Drive (LOS F in the a.m. and p.m. peak hours)
- Carnegie Avenue/Bullard Avenue (LOS E in the a.m. peak hour and LOS F in the p.m. peak hour)
- Golden State Boulevard/Carnegie Avenue (LOS F in the a.m. and p.m. peak hours)
- Palm Avenue/Bullard Avenue (LOS E in the p.m. peak hour)
- SR 99 southbound ramps/Shaw Avenue (LOS E in the a.m. peak hour and LOS D in the p.m. peak hour)
- Golden State Boulevard/Shaw Avenue (LOS F in the p.m. peak hour)
- SR 99 northbound ramps/Ashlan Avenue (LOS D in the a.m. peak hour and LOS F in the p.m. peak hour)

Table 7-2A – Year 2010 Baseline AM and PM Peak Hour Level of Service Summary

		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	unsignalized	>50	F	>50	F
2 99 SB Ramps/Herndon	unsignalized	>50	F	>50	F
3 99 NB Ramps/Herndon	unsignalized	>50	F	>50	F
4 Golden State/Herndon	signal	26.8	C	28.5	C
5 Weber/Herndon	unsignalized	>50	F	>50	F
6 Bryan/Herndon	signal	65.5	E	45.9	D
7 Hayes/Herndon	signal	18.2	B	19.6	B
8 Veterans/Herndon	signal	--	--	--	--
9 Polk/Herndon	signal	23.7	C	29.2	C
10 Milburn/Herndon	signal	27.4	C	41.6	D
11 Blythe/Herndon	signal	14.0	B	18.7	B
12 Brawley/Herndon	signal	>80	F	>80	F
13 Marks/Herndon	signal	60.0	E	67.9	E
14 West/Herndon	signal	69.7	E	69.7	E
15 Palm/Herndon	signal	52.4	D	>80	F
16 Blackstone/Herndon	signal	29.1	C	37.1	D
17 Grantland/Parkway	unsignalized	>50	F	>50	F
18 Bryan/Palo Alto	unsignalized	11.2	B	8.7	A
19 Hayes/Palo Alto	unsignalized	12.3	B	8.6	A
20 Veterans/Hayes	unsignalized	--	--	--	--
21 Veterans/Bryan	unsignalized	--	--	--	--
22 Bryan/Sierra	unsignalized	--	--	--	--
23 Polk/Sierra	unsignalized	12.6	B	13.9	B
24 Golden State/Veterans	signal	--	--	--	--
25 Grantland/Bullard	unsignalized	29.6	D	23.7	C
26 99 NB Ramps/Veterans	signal	--	--	--	--
27 99 SB Ramps/Veterans	signal	--	--	--	--
28 Carnegie/Bullard	unsignalized	41.6	E	>50	F
29 Golden State/Carnegie	unsignalized	>50	F	>50	F
30 Dante/Bullard	unsignalized	12.1	B	12.6	B
31 Palm/Bullard	signal	42.3	D	62.8	E
32 Veterans/Bryan	signal	--	--	--	--
33 Grantland/Barstow	unsignalized	19.5	C	19.6	C
34 99 SB Ramps/Shaw	signal	66.0	E	38.5	D
35 99 NB Ramps/Shaw	signal	21.4	C	27.1	C
36 Golden State/Shaw	signal	51.0	D	>80	F
37 Brawley/Shaw	signal	23.9	C	53.3	D
38 Marks/Shaw	signal	30.7	C	48.2	D
39 West/Shaw	signal	26.4	C	31.8	C
40 99 SB Ramps/Ashlan	signal	25.7	C	24.5	C
41 99 NB Ramps/Ashlan	signal	35.6	D	>80	F

Saturday LOS

Table 7-2B – Year 2010 Saturday Peak Hour Level of Service Summary

Intersection	Saturday Peak Hour		
	Control	Delay (sec/veh)	LOS
5. Weber Avenue/Herndon Avenue	unsignalized	16.7	C
6. Bryan Avenue/Herndon Avenue	signal	51.7	D
7. Hayes Avenue/Herndon Avenue	signal	17.6	B
18. Bryan Avenue/Palo Alto Avenue	unsignalized	8.9	A
19. Hayes Avenue/Palo Alto Avenue	unsignalized	7.8	A

According to the table, all intersections adjacent to Phase 1 are forecast to operate with satisfactory LOS during the Saturday peak hour.

Signal Warrant Analysis

A peak hour traffic signal warrant was conducted for the unsignalized intersections that were forecast to operate with an unsatisfactory LOS in the 2010 baseline condition. The peak hour signal warrant analysis was performed based on the California MUTCD. Appendix D contains the signal warrant analysis worksheets. Based on the peak hour signal warrant analysis, all of the unsignalized intersections forecast to operate with unsatisfactory LOS, except Weber Avenue/Herndon Avenue, would meet the minimum volumes for the MUTCD peak hour warrant criteria.

Queuing Analysis

Tables 7-3A and 7-3B, respectively, present the results of the 2010 Baseline weekday a.m. and p.m. peak hour, and Saturday peak hour, queuing analysis based on the Synchro LOS analysis and the calculated 95th percentile queue lengths for each left- and/or right turn storage lane for each study area intersection. Based on the queuing analysis, the following intersections are forecast to have 95th percentile queues that exceed the storage lengths of one or more movements during the weekday and Saturday peak hours, respectively:

Weekday Queues

- SR 99 southbound ramps/Herndon Avenue (SBR)
- SR 99 northbound ramps/Herndon Avenue (NBL)
- Bryan Avenue/Herndon Avenue (NBL, SBL, and EBL)
- Milburn Avenue/Herndon Avenue (SBL and WBR)
- Brawley Avenue/Herndon Avenue (NBL, NBR, SBL, SBR, EBL, and WBL)
- Marks Avenue/Herndon Avenue (NBR, SBL, SBR, EBL, and EBR)
- West Avenue/Herndon Avenue (NBR and SBL)
- Palm Avenue/Herndon Avenue (NBL, SBR, EBL, and WBR)
- Blackstone Avenue/Herndon Avenue (SBR and WBR)
- Parkway Drive/Grantland Avenue (NBL and NBR)

Table 7-3A - 2010 Baseline Weekday Intersection Queuing Analysis Summary

Signalized Intersection		Storage & 95th Percentile Queue Lengths (ft)							
		NBL	NBR	SBL	SBR	EBL	EBR	WBL	WBR
2 99 SB Ramps/Herndon	Storage Length[1]	--	--	1,400	60	--	--	--	--
	AM Queue[1]	--	--	198	198	--	--	--	--
	PM Queue[1]	--	--	308	308	--	--	--	--
3 99 NB Ramps/Herndon	Storage Length[1]	1,400	--	--	--	--	--	--	--
	AM Queue[1]	>1400	--	--	--	--	--	--	--
	PM Queue[1]	>1400	--	--	--	--	--	--	--
4 Golden State/Herndon	Storage Length[1]	145	--	150	145	255	365	165	80
	AM Queue[1]	37	--	138	73	84	28	111	210
	PM Queue[1]	42	--	218	36	69	30	106	62
6 Bryan/Herndon	Storage Length[1]	150	150	250	250	165	165	165	165
	AM Queue[1]	468	62	295	204	479	79	74	152
	PM Queue[1]	125	9	366	112	467	48	4	100
7 Hayes/Herndon	Storage Length[1]	140	--	100	--	350	250	250	125
	AM Queue[1]	20	--	10	--	69	3	67	8
	PM Queue[1]	12	--	9	--	91	7	35	13
9 Polk/Herndon	Storage Length[1]	140	--	200	160	225	100	250	100
	AM Queue[1]	64	--	89	19	8	27	59	39
	PM Queue[1]	72	--	131	23	11	36	145	21
10 Milburn/Herndon	Storage Length[1]	185	50	260	150	100	80	80	480
	AM Queue[1]	59	40	192	86	120	41	41	53
	PM Queue[1]	87	42	288	121	150	13	40	369
11 Blythe/Herndon	Storage Length[1]	235	235	120	120	220	140	220	140
	AM Queue[1]	0	0	37	0	0	2	4	15
	PM Queue[1]	4	0	42	0	0	0	6	29
12 Brawley/Herndon	Storage Length[1]	105	75	80	80	290	--	310	--
	AM Queue[1]	295	362	155	36	112	--	585	--
	PM Queue[1]	483	197	43	35	112	--	700	--
13 Marks/Herndon	Storage Length[1]	245	125	160	160	145	50	280	190
	AM Queue[1]	115	311	202	61	160	48	208	75
	PM Queue[1]	169	189	236	355	385	74	243	170
14 West/Herndon	Storage Length[1]	175	65	185	350	260	200	275	140
	AM Queue[1]	68	369	195	36	51	70	245	41
	PM Queue[1]	106	595	182	145	103	70	227	137
15 Palm/Herndon	Storage Length[1]	145	280	250	230	245	190	210	145
	AM Queue[1]	122	119	117	779	487	42	171	333
	PM Queue[1]	172	63	267	1,428	604	34	163	156
16 Blackstone/Herndon	Storage Length[1]	250	110	240	90	250	160	250	100
	AM Queue[1]	65	47	120	110	114	40	64	79
	PM Queue[1]	129	37	143	393	140	130	112	103
17 Parkway/Grantland	Storage Length[1]	420	80	--	--	--	--	--	--
	AM Queue[1]	1,561	1,561	--	--	--	--	--	--
	PM Queue[1]	475	475	--	--	--	--	--	--
18 Bryan/Palo Alto	Storage Length[1]	--	--	180	--	--	--	730	150
	AM Queue[1]	--	--	22	--	--	--	54	54
	PM Queue[1]	--	--	3	--	--	--	6	6
25 Grantland/Bullard	Storage Length[1]	250	--	250	--	250	100	100	100
	AM Queue[1]	1	--	5	--	38	1	4	28
	PM Queue[1]	1	--	5	--	19	1	6	8
31 Palm/Bullard	Storage Length[1]	120	55	90	70	150	150	140	--
	AM Queue[1]	92	57	149	48	164	23	171	--
	PM Queue[1]	246	94	144	79	259	0	201	--
34 99 SB Ramps/Shaw	Storage Length[1]	1,330	50	--	--	--	200	110	--
	AM Queue[1]	96	82	--	--	--	209	799	--
	PM Queue[1]	132	85	--	--	--	101	670	--
35 99 NB Ramps/Shaw	Storage Length[1]	--	--	1,300	50	120	--	--	230
	AM Queue[1]	--	--	109	85	127	--	--	33
	PM Queue[1]	--	--	350	247	96	--	--	37
36 Golden State/Shaw	Storage Length[1]	140	140	165	165	180	180	190	190
	AM Queue[1]	34	371	305	23	59	30	461	43
	PM Queue[1]	81	1,076	392	26	115	51	719	152
37 Brawley/Shaw	Storage Length[1]	260	100	220	130	220	130	200	120
	AM Queue[1]	71	25	96	36	42	25	54	28
	PM Queue[1]	151	109	277	80	210	83	154	143
38 Marks/Shaw	Storage Length[1]	190	105	240	270	235	135	275	155
	AM Queue[1]	96	233	135	216	114	36	83	25
	PM Queue[1]	244	85	139	295	302	78	163	70
39 West/Shaw	Storage Length[1]	240	75	185	115	240	155	210	125
	AM Queue[1]	98	111	66	48	51	34	82	24
	PM Queue[1]	117	39	58	47	111	33	125	40
40 99 SB Ramps/Ashlan	Storage Length[1]	100	100	360	110	--	100	575	--
	AM Queue[1]	25	247	122	0	--	18	162	--
	PM Queue[1]	54	125	128	0	--	37	351	--
41 99 NB Ramps/Ashlan	Storage Length[1]	240	520	210	210	320	--	--	85
	AM Queue[1]	235	210	87	61	361	--	--	137
	PM Queue[1]	630	615	176	372	412	--	--	786

Notes:

[1] Storage length determined by field measurement and review of scaled aerial photography. AM & PM queue lengths determined in *Synchro*.

XXX-Denotes 95th percentile queue that would exceed the lane's storage capacity.

- Palm Avenue/Bullard Avenue (NBL, NBR, SBL, SBR, EBL, and WBL)
- SR 99 southbound ramps/Shaw Avenue (NBR, EBR, and WBL)
- SR 99 northbound ramps/Shaw Avenue (SBR and EBL)
- Golden State Boulevard/Shaw Avenue (NBR, SBL, and WBL)
- Brawley Avenue/Shaw Avenue (NBR, SBL, and WBR)
- Marks Avenue/Shaw Avenue (NBL, NBR, SBR, and EBL)
- West Avenue/Shaw Avenue (NBR)
- SR 99 southbound ramps/Ashlan Avenue (NBR)
- SR 99 northbound ramps/Ashlan Avenue (NBL, NBR, SBR, EBL, and WBR)

Saturday Queues

Table 7-3B – Year 2010 Baseline Saturday Intersection Queuing Analysis Summary

Signalized Intersection		Storage & 95th Percentile Queue Lengths (ft)							
		NBL	NBR	SBL	SBR	EBL	EBR	WBL	WBR
6. Bryan/Herndon	Storage Length[1]	150	65	250	250	165	165	165	165
	Peak Queue[1]	110	37	381	94	532	33	15	174
7. Hayes/Herndon	Storage Length[1]	140	--	100	--	350	250	250	125
	Peak Queue[1]	13	--	18	--	47	11	22	--

Note: [1] – Storage length determined by field measurement and review of scaled aerial photography. AM & PM queues determined in Synchro.

Based on the queuing analysis, the intersection of Bryan Avenue/Herndon Avenue is forecast to have 95th percentile queues on the southbound left turn lane and eastbound left turn lane that would exceed the storage lengths of those movements.

Year 2010 Baseline Roadway Level of Service Analysis

Table 7-4 presents the results of the roadway segment level of service analysis for the 2010 Baseline condition. According to the City guidelines, if a roadway segment varies between the total number of lanes, the lowest number of lanes is to be analyzed for the entire roadway segment. Based on the roadway segment analysis, the following roadway segments are operating with unsatisfactory LOS (LOS E or LOS F):

- Herndon Avenue: Parkway Drive to SR 99 southbound ramps (westbound both peak hours)
- Herndon Avenue: SR 99 southbound ramps to SR 99 northbound ramps (both directions a.m. peak hour and westbound p.m. peak hour)
- Herndon Avenue: SR 99 northbound ramps to Golden State Boulevard (both directions both peak hours)
- Herndon Avenue: Golden State Boulevard to Weber Avenue (westbound a.m. peak hour and eastbound p.m. peak hour)
- Herndon Avenue: Weber Avenue to Bryan Avenue (westbound a.m. peak hour and both directions p.m. peak hour)
- Herndon Avenue: Bryan Avenue to Hayes Avenue (eastbound p.m. peak hour)
- Herndon Avenue: Polk Avenue to Milburn Avenue (both directions p.m. peak hour)

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Table 7-4 - Year 2010 Baseline Roadway Segment Level of Service Summary

Roadway Segment	No. of Lanes	2010 Baseline AM Peak Hour EB/NB Volume	LOS[1]	WB/SB Volume	LOS[1]	PM Peak Hour EB/NB Volume	LOS[1]	WB/SB Volume	LOS[1]
Herndon Avenue									
Parkway to SR 99 SB Ramps	1	585	C	1,324	F	495	C	1,259	F
SR 99 SB Ramps to SR 99 NB Ramps	1	611	D	1,289	F	545	C	1,192	F
SR 99 NB Ramps to Golden State	1	1,258	F	1,253	F	1,436	F	1,107	F
Golden State to Weber	2	1,425	D	1,715	E	1,843	F	1,445	D
Weber to Bryan	2	1,561	D	1,964	F	1,935	F	1,721	E
Bryan to Hayes	2	1,324	C	1,635	D	1,734	E	1,501	D
Hayes to Veterans	2	1,224	C	1,388	D	1,448	D	1,355	C
Veterans to Polk	2	1,224	C	1,388	D	1,448	D	1,361	D
Polk to Milburn	2	1,610	D	1,414	D	1,763	E	1,777	E
Milburn to Blythe	3	1,828	C	1,331	C	1,774	C	1,904	C
Blythe to Brawley	2	1,903	C	1,388	C	1,869	C	2,038	C
Brawley to Marks	2	2,385	F	1,630	D	2,094	F	2,535	F
Marks to West	3	2,859	F	2,029	C	2,314	D	3,008	F
West to Palm	3	3,199	F	2,355	D	2,715	F	3,320	F
Palm to Blackstone	3	2,540	D	1,932	C	2,341	D	2,597	E
e/o Blackstone	3	2,295	D	1,930	C	2,117	D	2,003	C
Parkway Drive									
Herndon and Grantland	1	540	D	1,187	F	443	C	1,130	F
Bryan Avenue									
Herndon to Palo Alto	1	458	C	531	D	102	C	316	C
Palo Alto to Veterans	1	51	C	408	C	11	C	100	C
Veterans to Sierra	--	--	--	--	--	--	--	--	--
Sierra and Carnegie	1	223	C	188	C	130	C	52	C
Carnegie to Dante	2	662	C	253	C	398	C	760	C
Palo Alto Avenue									
Bryan to Hayes	1	331	C	399	C	145	C	79	C
Hayes Avenue									
Herndon to Palo Alto	1	216	C	297	C	117	C	138	C
Palo Alto to Veterans	1	227	C	153	C	72	C	104	C
Veterans Avenue									
Hayes to Herndon	--	--	--	--	--	--	--	--	--
Bryan to Hayes	--	--	--	--	--	--	--	--	--
Golden State to Bryan	--	--	--	--	--	--	--	--	--
SR 99 NB Ramps to GS	--	--	--	--	--	--	--	--	--
SR 99 SB Ramps to SR 99 NB Ramps	--	--	--	--	--	--	--	--	--
Bryan(2) to SR 99 SB Ramps	--	--	--	--	--	--	--	--	--
Sierra Avenue									
Bryan to Polk	1	228	C	176	C	98	C	156	C
Polk Avenue									
Herndon to Sierra	1	474	C	277	C	482	D	439	C
Golden State Boulevard									
Herndon to Veterans	1	341	C	795	E	428	C	717	D
Veterans to Carnegie	1	309	C	262	C	305	C	343	C
Carnegie to Shaw	1	498	D	622	D	905	F	517	D
Shaw to Ashlan	1	844	F	578	D	1,521	F	599	D
Shaw Avenue									
w/o SR 99 SB Ramps	1	1,383	F	911	F	1,083	F	1,590	F
SR 99 SB Ramps to SR 99 NB Ramps	1-2	1,163	F	1,417	D	1,147	F	1,996	F
SR 99 NB Ramps to Golden State	2	1,178	D	1,416	D	1,412	D	2,003	F
Golden State to Brawley	3	1,743	D	1,657	C	2,411	D	2,454	E
Brawley to Marks	3	1,780	D	1,527	C	2,281	D	2,369	D
Marks to West	3	2,095	D	1,423	C	1,880	D	1,993	D
e/o West	3	1,992	D	1,287	C	1,678	C	1,952	D
Grantland Avenue									
Parkway to Bullard	1	723	D	365	C	505	D	571	D
Bullard to Barstow	1	462	C	418	C	328	C	466	C
Palm Avenue									
Herndon to Bullard	2	1,172	D	1,211	D	1,234	D	1,101	C
Dante Avenue									
Polk to Bullard	1	187	C	176	C	168	C	168	C
Carnegie Avenue									
Golden State to Bullard	1	312	C	697	D	852	F	412	C
Ashlan Avenue									
SR 99 SB Ramps to SR 99 NB Ramps	2	2,030	F	1,009	C	1,691	E	1,886	F

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas*, for State Two-Way Arterials (Class II) & Non-State Roadways.

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact

- Herndon Avenue: Blythe Avenue to Brawley Avenue (both directions p.m. peak hour)
- Herndon Avenue: Brawley Avenue to Marks Avenue (eastbound a.m. peak hour and both directions p.m. peak hour)
- Herndon Avenue: Marks Avenue to West Avenue (eastbound a.m. peak hour and westbound p.m. peak hour)
- Herndon Avenue: West Avenue to Palm Avenue (eastbound a.m. peak hour and both directions p.m. peak hour)
- Herndon Avenue: Palm Avenue to Blackstone Avenue (westbound p.m. peak hour)
- Parkway Drive: Herndon Avenue to Grantland Avenue (southbound both peak hours)
- Golden State Boulevard: south of Herndon Avenue (southbound a.m. peak hour)
- Golden State Boulevard: Carnegie Avenue to Shaw Avenue (northbound p.m. peak hour)
- Golden State Boulevard: Shaw Avenue to Ashlan Avenue (northbound both peak hours)
- Shaw Avenue: west of SR 99 southbound ramps (both directions both peak hours)
- Shaw Avenue: SR 99 southbound ramps to SR 99 northbound ramps (both directions both peak hours)
- Shaw Avenue: SR 99 northbound ramps to Golden State Boulevard (westbound p.m. peak hour)
- Shaw Avenue: Golden State Boulevard to Brawley Avenue (westbound p.m. peak hour)
- Carnegie Avenue: Golden State Boulevard to Bullard Avenue (eastbound p.m. peak hour)
- Ashlan Avenue: SR 99 southbound ramps to SR 99 northbound ramps (eastbound a.m. peak hour and both directions p.m. peak hour)

Year 2010 Freeway Facilities Level of Service Analyses

Year 2010 freeway segment traffic volume forecasts were post-processed by DKS using the existing AADT obtained from the Caltrans, the 2010 ambient growth rate from the Fresno COG travel model, and the traffic generated by cumulative projects.

Mainline Levels of Service

Year 2010 freeway segment level of service, in terms of density, in the vicinity of the project site were evaluated by applying the Highway Capacity Manual (HCM) methodology for basic freeway segments. The HCS program was used to perform these calculations. Table 7-5 provides the 2010 baseline condition freeway level of service summary.

As this table indicates, all study segments of SR 99 will operate with unsatisfactory conditions (LOS D or worse) in the 2010 baseline condition p.m. peak hour in both directions. In the a.m. peak hour, only one segment is forecast to operate with unsatisfactory conditions (LOS D): Avenue 7 to Herndon Avenue in the southbound direction.

Table 7-5 – Year 2010 Baseline Freeway Segment Level of Service Summary

Freeway	From	To	Density	LOS
Northbound AM				
SR 99	Herndon Avenue	Avenue 7	22.2	C
	Veterans Boulevard	Herndon Avenue	20.6	C
	Shaw Avenue	Veterans Boulevard		
	Ashlan Avenue	Shaw Avenue	22.4	C
	Dakota Avenue	Ashlan Avenue	19.9	C
Southbound AM				
SR 99	Avenue 7	Herndon Avenue	27.4	D
	Herndon Avenue	Veterans Boulevard	23.6	C
	Veterans Boulevard	Shaw Avenue		
	Shaw Avenue	Ashlan Avenue	25.4	C
	Ashlan Avenue	Dakota Avenue	22.0	C
Northbound PM				
SR 99	Herndon Avenue	Avenue 7	37.7	E
	Veterans Boulevard	Herndon Avenue	31.2	D
	Shaw Avenue	Veterans Boulevard		
	Ashlan Avenue	Shaw Avenue	32.8	D
	Dakota Avenue	Ashlan Avenue	28.0	D
Southbound PM				
SR 99	Avenue 7	Herndon Avenue	30.9	D
	Herndon Avenue	Veterans Boulevard	27.9	D
	Veterans Boulevard	Shaw Avenue		
	Shaw Avenue	Ashlan Avenue	31.7	D
	Ashlan Avenue	Dakota Avenue	26.9	D

Ramp Weaving Analysis

As previously described, the methodology shown in Figure 504.7A from the 2006 Caltrans Highway Design Manual (2006 HDM) was used to determine the freeway weaving LOS. The freeway weaving segments on SR 99 that were analyzed include the segment from Shaw Avenue to Herndon Avenue. Year 2010 baseline peak hour on- and off-ramp traffic volumes and mainline volumes were analyzed using Figure 504.7A from the Caltrans HDM. Results from this analysis are shown in Table 7-6. Detailed calculations shown on the Leisch nomographs are provided in Appendix F.

Table 7-6 – Year 2010 Baseline Freeway Weaving Level of Service Summary

Weaving Section	Distance	# of Lanes	LOS AM	LOS PM
State Route 99 Northbound				
- Shaw Avenue to Herndon Avenue	1.8 miles	2	D	F
State Route 99 Southbound				
- Herndon Avenue to Shaw Avenue	1.8 miles	2	D	E

As shown in the table, the following weaving sections are forecast to operate at an unsatisfactory LOS (LOS D or worse) in the 2010 baseline scenario:

- SR 99 northbound: Shaw Avenue to Herndon Avenue (LOS D in the a.m. peak hour and LOS F in the p.m. peak hour)
- SR 99 southbound: Herndon Avenue to Shaw Avenue (LOS D in the a.m. peak hour and LOS F in the p.m. peak hour)

At-Grade Railroad Crossing Analysis

Using the HCM "Back of Queue" queuing methodology to analyze the vehicular queuing, Table 7-6 presents the at-grade railroad crossing analysis summary for the 2010 baseline condition. The HCM calculation sheets are provided in Appendix H.

Table 7-7 - Year 2010 Baseline Condition At-Grade Railroad Crossing Analysis Summary

Crossing Location	Peak Hour [1]	Rail Crossing Time (seconds) [2]	Vehicular Queue (feet) [3]		Impact to Adjacent Major Intersection [4]			
			e/o tracks	w/o tracks	e/o tracks		w/o tracks	
Herndon Avenue	AM	205	2,130	1,623	Yes	1,705 ft to Bryan Ave	Yes	725 ft to SR 99 NB ramps
	PM	156	1,257	1,928	No		Yes	
Carnegie Avenue	AM	243	1,176	544	Yes	720 ft to Bullard Ave	Yes	75 ft to Golden State Blvd
	PM	110	301	790	No		Yes	
Shaw Avenue	AM	300	3,061	3,354	Yes	1,560 ft to Blythe Ave	Yes	2,600 ft to SR 99 NB ramps
	PM	235	5,653	5,382	Yes		Yes	

[1] - Based on observed train crossings in 2007 within the AM and PM peak commute hours.

[2] - Based on time that train crossing gate arms go down, to time gate arms go up.

[3] - Vehicle queue determined using *Highway Capacity Manual* (HCM) "Back of Queue Equation".

[4] – Impact based on whether vehicular queue would extend to an adjacent major intersection. For Herndon and Shaw Avenues the major intersection west of tracks will be the northbound ramp intersections with SR 99, rather than the closely spaced intersections with Golden State Blvd/Herndon Ave (125 ft) and Golden State Blvd/Shaw Ave (50 ft).

According to the table, at the Herndon Avenue crossing is forecast to have vehicular queues extending from the crossing, west toward the SR 99 northbound off-ramp, and east toward Bryan Avenue in one or both peak hours. Similarly, the Carnegie Avenue crossing would have queues extending from the crossing, west to Golden State Boulevard, and east to Bullard Avenue in one or both peak hours. And also, the Shaw Avenue crossing would have queues extending from the crossing, west to SR 99 northbound ramps, and east to Blythe Avenue in both peak hours.

Year 2012 Baseline Condition

The proposed project's Phase 2 (2A and 2B) "opening year" was determined to be 2012 in which Phases 1 and 2 (2A and 2B) would be completely constructed and fully occupied. Similar to Phase 1, year 2012 traffic volumes were calculated using a manual "build-up" method of base existing (2007) traffic volumes, plus application of a 2012 ambient growth rate determined from the Fresno COG travel model, and the addition of traffic from a list of cumulative projects that would generate traffic in the project study area.

Future Street Network and Intersection Geometrics

As previously shown in Figure 7-2, Future Study Area Roadway Network Improvements, the following two network improvements are planned for the study area by 2012:

- SR 99 widening (six lanes)
- Extend Veterans Boulevard from Herndon Avenue to Bryan Avenue from its existing segment from Hayes Avenue to Wathen Avenue (local street)
- Extend Bryan Avenue from its terminus at Cresta Avenue southward to connect with Bullard Avenue, north of Carnegie Avenue.

Existing geometrics and traffic control, plus the improvements listed in the 2010 baseline condition, plus the improvements listed above have been assumed for the 2012 baseline scenario.

Year 2012 Baseline Traffic Volumes

Year 2012 traffic volumes were calculated using a manual "build-up" method of base existing (2007) traffic volumes, plus application of a 2012 ambient growth rate determined from the Fresno COG travel model, and the addition of traffic from a list of cumulative (approved and/or pending) projects that would generate traffic in the project study area. Figure 7-4 illustrates the 2012 baseline weekday a.m. and p.m. peak hour traffic volumes.

Year 2012 Baseline Intersection Levels of Service

Year 2012 baseline traffic volumes were input into Synchro to evaluate levels of service. Table 7-8 presents the resulting LOS for the study intersections. According to the table, the following study area intersections are forecast to operate with an unsatisfactory LOS (i.e. LOS E or F for City intersections, and LOS D, E, or F for Caltrans facilities) in the 2012 baseline condition:

- Parkway Drive/Herndon Avenue (LOS F in the a.m. and p.m. peak hours)
- SR 99 southbound off-ramp/Herndon Avenue (LOS F in the a.m. and p.m. peak hours)
- SR 99 northbound off-ramp/Herndon Avenue (LOS F in the a.m. and p.m. peak hours)
- Brawley Avenue/Herndon Avenue (LOS E in the p.m. peak hour)
- West Avenue/Herndon Avenue (LOS F in the a.m. and p.m. peak hours)
- Palm Avenue/Herndon Avenue (LOS E in the a.m. peak hour and LOS F in the p.m. peak hour)
- Grantland Avenue/Parkway Drive (LOS F in the a.m. and p.m. peak hours)
- Grantland Avenue/Bullard Avenue (LOS E in the a.m. peak hour)
- Carnegie Avenue/Bullard Avenue (LOS F in the a.m. and p.m. peak hours)

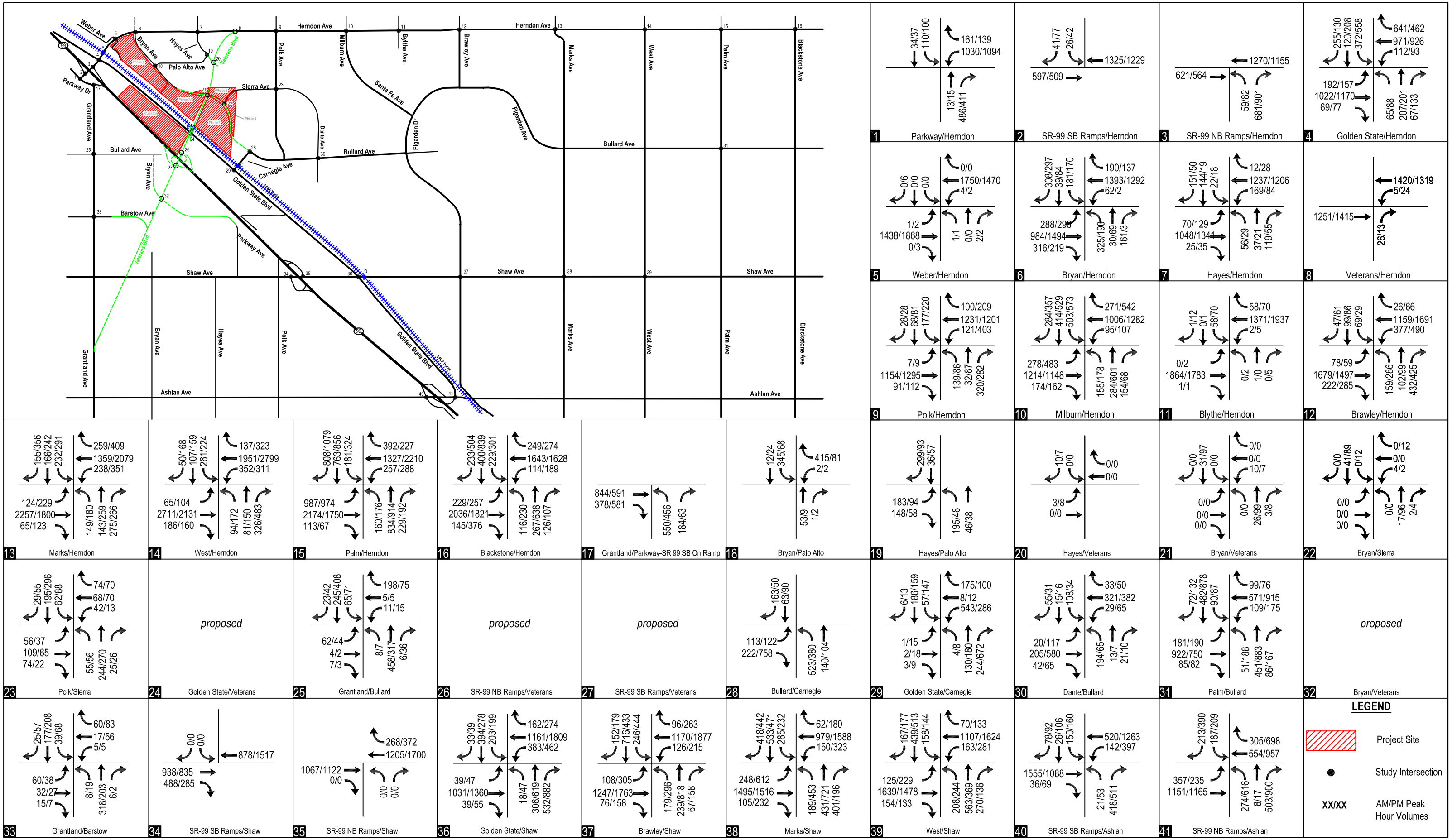

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Figure 7-4
Year 2012 Baseline Weekday AM & PM Peak Hour Traffic Volumes

Table 7-8 – Year 2012 Baseline Intersection Level of Service Summary

		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	unsignalized	>50	F	>50	F
2 99 SB Ramps/Herndon	unsignalized	>50	F	>50	F
3 99 NB Ramps/Herndon	unsignalized	>50	F	>50	F
4 Golden State/Herndon	signal	26.8	C	28.7	C
5 Weber/Herndon	unsignalized	16.4	C	17.9	C
6 Bryan/Herndon	signal	51.1	D	31.3	C
7 Hayes/Herndon	signal	22.2	C	24.3	C
8 Veterans/Herndon	signal	--	A	--	A
9 Polk/Herndon	signal	21.2	C	24.9	C
10 Milburn/Herndon	signal	28.8	C	42.6	D
11 Blythe/Herndon	signal	8.5	A	14.6	B
12 Brawley/Herndon	signal	45.5	D	58.2	E
13 Marks/Herndon	signal	36.3	D	45.5	D
14 West/Herndon	signal	>80	F	>80	F
15 Palm/Herndon	signal	58.7	E	>80	F
16 Blackstone/Herndon	signal	32.2	C	41.2	D
17 Grantland/Parkway	unsignalized	>50	F	>50	F
18 Bryan/Palo Alto	unsignalized	11.1	B	8.7	A
19 Hayes/Palo Alto	unsignalized	17.1	C	8.1	A
20 Veterans/Hayes	signal	--	A	--	A
21 Veterans/Bryan	signal	--	A	--	A
22 Bryan/Sierra	unsignalized	8.8	A	8.8	A
23 Polk/Sierra	unsignalized	13.1	B	14.1	B
24 Golden State/Veterans	signal	--	--	--	--
25 Grantland/Bullard	unsignalized	40.8	E	27.4	D
26 99 NB Ramps/Veterans	signal	--	--	--	--
27 99 SB Ramps/Veterans	signal	--	--	--	--
28 Carnegie/Bullard	unsignalized	>50	F	>50	F
29 Golden State/Carnegie	unsignalized	>50	F	>50	F
30 Dante/Bullard	unsignalized	13.9	B	16.8	C
31 Palm/Bullard	signal	28.1	C	50.9	D
32 Veterans/Bryan	signal	--	--	--	--
33 Grantland/Barstow	unsignalized	20.5	C	21.5	C
34 99 SB Ramps/Shaw	signal	56.0	E	31.0	C
35 99 NB Ramps/Shaw	signal	17.3	B	22.4	C
36 Golden State/Shaw	signal	51.9	D	>80	F
37 Brawley/Shaw	signal	25.3	C	55.4	E
38 Marks/Shaw	signal	30.3	C	54.5	D
39 West/Shaw	signal	24.8	C	32.6	C
40 99 SB Ramps/Ashlan	signal	57.8	E	46.3	D
41 99 NB Ramps/Ashlan	signal	37.4	D	>80	F

- Golden State Boulevard/Carnegie Avenue (LOS F in the a.m. and p.m. peak hours)
- SR 99 southbound ramps/Shaw Avenue (LOS E in the a.m. peak hour)
- Golden State Boulevard/Shaw Avenue (LOS F in the p.m. peak hour)
- Brawley Avenue/Shaw Avenue (LOS E in the p.m. peak hour)
- SR 99 southbound ramps/Ashlan Avenue (LOS E in the a.m. peak hour and LOS D in the p.m. peak hour)
- SR 99 northbound ramps/Ashlan Avenue (LOS D in the a.m. peak hour and LOS F in the p.m. peak hour)

Signal Warrant Analysis

A peak hour traffic signal warrant was conducted for the unsignalized intersections that were forecast to operate with an unsatisfactory LOS in the year 2012 baseline condition. The peak hour signal warrant analysis was performed based on the MUTCD. Appendix D contains the signal warrant analysis worksheets. Based on the peak hour signal warrant analysis, all unsignalized intersections would meet the minimum volumes for the MUTCD peak hour warrant criteria.

Queuing Analysis

Table 7-9 presents the results of the 2012 Baseline weekday a.m. and p.m. peak hour queuing analysis based on the Synchro LOS analysis and the calculated 95th percentile queue lengths for each left- and/or right turn storage lane for each study area intersection. Based on the queuing analysis, the following intersections are forecast to have 95th percentile queues that exceed the storage lengths of one or more movements during the weekday peak hours:

- SR 99 southbound ramps/Herndon Avenue (SBR in both peak hours)
- SR 99 northbound ramps/Herndon Avenue (NBL in both peak hours)
- Golden State Boulevard/Herndon Avenue (WBR in a.m. peak hour)
- Bryan Avenue/Herndon Avenue (NBL and EBL in both peak hours)
- Milburn Avenue/Herndon Avenue (SBL, EBL, and WBR in p.m. peak hour; and SBR in both peak hours)
- Brawley Avenue/Herndon Avenue (NBL, NBR, and WBL in both peak hours; SBL in a.m. peak hour; and EBR in p.m. peak hour)
- Marks Avenue/Herndon Avenue (NBR in a.m. peak hour; SBL, SBR, EBL, and EBR in p.m. peak hour)
- West Avenue/Herndon Avenue (NBR and SBL in both peak hours; and WBR in p.m. peak hour)
- Palm Avenue/Herndon Avenue (NBL and SBL in p.m. peak hour; and SBR, EBL, and WBR in both peak hours)
- Blackstone Avenue/Herndon Avenue (SBR in both peak hours; and WBR in p.m. peak hour)
- Parkway Drive/Grantland Avenue (NBL and NBR in both peak hours)
- Palm Avenue/Bullard Avenue (NBL and SBR in p.m. peak hour; NBR, SBL, and EBL in both peak hours; and WBL in a.m. peak hour)
- SR 99 southbound ramps/Shaw Avenue (WBL in both peak hours; and EBR in a.m. peak hour)

Table 7-9 - 2012 Baseline Intersection Queuing Analysis Summary

Signalized Intersection		Storage & 95th Percentile Queue Lengths (ft)							
		NBL	NBR	SBL	SBR	EBL	EBR	WBL	WBR
2 99 SB Ramps/Herndon	Storage Length[1]	--	--	1,400	60	--	--	--	--
	AM Queue[1]	--	--	221	221	--	--	--	--
	PM Queue[1]	--	--	334	334	--	--	--	--
3 99 NB Ramps/Herndon	Storage Length[1]	1,400	--	--	--	--	--	--	--
	AM Queue[1]	>1400	--	--	--	--	--	--	--
	PM Queue[1]	>1400	--	--	--	--	--	--	--
4 Golden State/Herndon	Storage Length[1]	145	150	150	145	255	365	165	80
	AM Queue[1]	36	33	173	94	80	26	102	336
	PM Queue[1]	47	52	243	39	72	30	95	63
6 Bryan/Herndon	Storage Length[1]	150	150	250	250	165	165	165	165
	AM Queue[1]	389	50	217	120	358	56	77	76
	PM Queue[1]	190	7	199	72	348	53	8	56
7 Hayes/Herndon	Storage Length[1]	140	--	100	--	350	250	250	125
	AM Queue[1]	27	--	13	--	85	15	71	10
	PM Queue[1]	17	--	12	--	135	17	36	16
8 Veterans/Herndon	Storage Length[1]	--	250	--	--	--	--	250	--
	AM Queue[1]	--	12	--	--	--	--	17	--
	PM Queue[1]	--	14	--	--	--	--	19	--
9 Polk/Herndon	Storage Length[1]	140	--	200	160	225	100	250	100
	AM Queue[1]	65	--	75	16	7	28	54	33
	PM Queue[1]	41	--	109	19	9	34	175	48
10 Milburn/Herndon	Storage Length[1]	225	100	230	100	230	135	230	140
	AM Queue[1]	64	48	199	101	134	46	46	55
	PM Queue[1]	105	45	290	140	258	49	60	331
11 Blythe/Herndon	Storage Length[1]	235	235	120	120	220	140	220	140
	AM Queue[1]	0	0	25	0	0	2	0	9
	PM Queue[1]	3	0	28	13	3	2	0	10
12 Brawley/Herndon	Storage Length[1]	105	75	80	80	290	150	310	100
	AM Queue[1]	246	191	121	33	101	106	461	17
	PM Queue[1]	444	89	59	42	83	218	683	41
13 Marks/Herndon	Storage Length[1]	245	125	160	160	145	50	280	190
	AM Queue[1]	92	211	148	61	68	37	153	39
	PM Queue[1]	136	109	197	226	322	74	190	157
14 West/Herndon	Storage Length[1]	175	65	185	350	260	200	275	140
	AM Queue[1]	70	403	442	34	53	90	275	56
	PM Queue[1]	111	618	390	141	108	81	234	175
15 Palm/Herndon	Storage Length[1]	145	280	250	230	245	190	210	145
	AM Queue[1]	132	139	129	878	552	47	191	376
	PM Queue[1]	164	65	282	1,526	654	37	168	163
16 Blackstone/Herndon	Storage Length[1]	250	110	240	90	250	160	250	100
	AM Queue[1]	63	56	125	130	113	43	74	91
	PM Queue[1]	138	41	141	443	145	133	119	106
17 Grantland/Parkway	Storage Length[1]	420	80	--	--	--	--	--	--
	AM Queue[1]	1,630	1,630	--	--	--	--	--	--
	PM Queue[1]	571	571	--	--	--	--	--	--
18 Bryan/Palo Alto	Storage Length[1]	150	--	150	150	--	--	150	150
	AM Queue[1]	0	--	24	0	--	--	56	56
	PM Queue[1]	0	--	4	0	--	--	7	7
25 Grantland/Bullard	Storage Length[1]	250	--	250	--	250	100	100	100
	AM Queue[1]	1	--	5	--	50	1	4	30
	PM Queue[1]	1	--	5	--	23	0	7	8
31 Palm/Bullard	Storage Length[1]	120	55	90	70	150	0	140	--
	AM Queue[1]	83	60	158	51	172	24	178	--
	PM Queue[1]	263	96	152	82	254	0	21	--
34 99 SB Ramps/Shaw	Storage Length[1]	1,330	50	--	--	--	200	110	--
	AM Queue[1]	97	83	--	--	--	221	676	--
	PM Queue[1]	109	73	--	--	--	0	538	--
35 99 NB Ramps/Shaw	Storage Length[1]	--	--	1,300	50	120	--	--	230
	AM Queue[1]	--	--	131	84	143	--	--	35
	PM Queue[1]	--	--	304	227	101	--	--	36
36 Golden State/Shaw	Storage Length[1]	140	140	165	165	180	180	190	190
	AM Queue[1]	37	376	300	25	61	30	469	41
	PM Queue[1]	81	1,061	386	27	120	52	560	59
37 Brawley/Shaw	Storage Length[1]	260	100	220	130	220	130	200	120
	AM Queue[1]	77	25	114	37	44	26	57	29
	PM Queue[1]	173	129	307	94	101	5	171	174
38 Marks/Shaw	Storage Length[1]	190	105	240	270	235	135	275	155
	AM Queue[1]	89	269	139	272	116	36	69	26
	PM Queue[1]	274	112	158	331	345	96	177	89
39 West/Shaw	Storage Length[1]	240	75	185	115	240	155	210	125
	AM Queue[1]	113	130	80	60	26	23	95	24
	PM Queue[1]	125	42	64	55	126	40	137	48
40 99 SB Ramps/Ashlan	Storage Length[1]	100	100	360	110	--	100	575	--
	AM Queue[1]	36	423	257	0	--	29	241	--
	PM Queue[1]	72	305	248	0	--	51	481	--
41 99 NB Ramps/Ashlan	Storage Length[1]	240	520	210	210	320	--	--	85
	AM Queue[1]	248	228	91	61	380	--	--	148
	PM Queue[1]	674	652	188	421	320	--	--	806

Notes:
[1] Storage length determined by field measurement and review of scaled aerial photography. AM & PM queue lengths determined in *Synchro*.
XXX-Denotes 95th percentile queue that would exceed the lane's storage capacity.

- SR 99 northbound ramps/Shaw Avenue (SBR in both peak hours; and EBL in a.m. peak hour)
- Golden State Boulevard/Shaw Avenue (NBR, SBL, and WBL in both peak hours)
- Brawley Avenue/Shaw Avenue (SBL and WBR in p.m. peak hour)
- Marks Avenue/Shaw Avenue (NBL and EBL in p.m. peak hour; and NBR and SBR in both peak hours)
- SR 99 southbound ramps/Ashlan Avenue (NBR in both peak hours)
- SR 99 northbound ramps/Ashlan Avenue (NBL and WBR in both peak hours; NBR and SBR in p.m. peak hour; and EBL in a.m. peak hour)

Year 2012 Baseline Roadway Level of Service Analysis

Table 7-10 presents the results of the roadway segment level of service analysis for the 2012 Baseline condition. According to the City guidelines, if a roadway segment varies between the total number of lanes, the lowest number of lanes is to be analyzed for the entire roadway segment. Based on the roadway segment analysis, the following roadway segments are operating with unsatisfactory LOS (LOS E or LOS F):

- Herndon Avenue: Parkway Drive to SR 99 southbound ramps (westbound both peak hours)
- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (westbound both peak hours)
- Herndon Avenue: SR 99 northbound off-ramp to Golden State Boulevard (both directions both peak hours)
- Herndon Avenue: Blythe Avenue to Brawley Avenue (both directions p.m. peak hour)
- Herndon Avenue: Brawley Avenue to Marks Avenue (both directions p.m. peak hour)
- Herndon Avenue: Marks Avenue to West Avenue (eastbound a.m. peak hour; and westbound p.m. peak hour)
- Herndon Avenue: West Avenue to Palm Avenue (eastbound a.m. peak hour; and both directions p.m. peak hour)
- Herndon Avenue: Palm Avenue to Blackstone Avenue (eastbound a.m. peak hour, and westbound p.m. peak hour)
- Parkway Drive: Herndon Avenue to Grantland Avenue (southbound both peak hours)
- Golden State Boulevard: south of Herndon Avenue (southbound a.m. peak hour)
- Golden State Boulevard: Carnegie Avenue to Shaw Avenue (northbound p.m. peak hour)
- Golden State Boulevard: Shaw Avenue to Ashlan Avenue (northbound both peak hours)
- Shaw Avenue: west of SR 99 southbound ramps (both directions both peak hours)
- Shaw Avenue: SR 99 southbound ramps to SR 99 northbound ramps (eastbound both peak hours; westbound p.m. peak hour)
- Shaw Avenue: SR 99 northbound ramps to Golden State Boulevard (westbound p.m. peak hour)
- Shaw Avenue: Golden State Boulevard to Brawley Avenue (westbound p.m. peak hour)
- Shaw Avenue: Brawley Avenue to Marks Avenue (westbound p.m. peak hour)

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Table 7-10 - Year 2012 Baseline Roadway Segment Level of Service Summary

		2012 Baseline							
		AM Peak Hour				PM Peak Hour			
Roadway Segment	No. of Lanes	EB/NB Volume	LOS[1]	WB/SB Volume	LOS[1]	EB/NB Volume	LOS[1]	WB/SB Volume	LOS[1]
Herndon Avenue									
Parkway to SR 99 SB Ramps	1	597	D	1,366	F	511	C	1,306	F
SR 99 SB Ramps to SR 99 NB Ramps	1	623	D	1,329	F	564	C	1,237	F
SR 99 NB Ramps to Golden State	1	1,302	F	1,291	F	1,465	F	1,155	F
Golden State to Weber	3	1,461	C	1,751	C	1,873	C	1,481	C
Weber to Bryan	3	1,588	C	2,026	C	2,009	C	1,779	C
Bryan to Hayes	3	1,326	C	1,645	C	1,667	C	1,431	C
Hayes to Veterans	3	1,251	C	1,420	C	1,415	C	1,319	C
Veterans to Polk	3	1,277	C	1,425	C	1,428	C	1,343	C
Polk to Milburn	3	1,666	C	1,452	C	1,797	C	1,817	C
Milburn to Blythe	3	1,871	C	1,372	C	1,789	C	1,951	C
Blythe to Brawley	2	1,922	C	1,713	C	2,678	E	2,813	F
Brawley to Marks	3	2,446	D	1,663	C	2,704	E	2,740	F
Marks to West	3	2,962	F	2,095	C	2,395	D	3,139	F
West to Palm	3	3,298	F	2,440	D	2,838	F	3,465	F
Palm to Blackstone	3	2,584	E	1,992	C	2,454	D	2,725	F
e/o Blackstone	3	2,391	D	2,006	C	2,229	D	2,091	C
Parkway Drive									
Herndon and Grantland	1	550	D	1,222	F	456	C	1,172	F
Bryan Avenue									
Herndon to Palo Alto	1	516	D	545	D	262	C	440	C
Palo Alto to Veterans	1	54	C	427	C	99	C	105	C
Veterans to Sierra	1	29	C	41	C	108	C	101	C
Sierra and Carnegie	1	253	C	226	C	226	C	140	C
Carnegie to Dante	2	663	C	285	C	484	C	848	C
Palo Alto Avenue									
Bryan to Hayes	1	346	C	417	C	152	C	83	C
Hayes Avenue									
Herndon to Palo Alto	1	229	C	335	C	132	C	150	C
Palo Alto to Veterans	1	241	C	184	C	86	C	115	C
Veterans Avenue									
Hayes to Herndon	1	26	C	0	C	0	C	0	C
Bryan to Hayes	1	3	C	10	C	0	C	0	C
Golden State to Bryan	--	--	--	--	--	--	--	--	--
SR 99 NB Ramps to GS	--	--	--	--	--	--	--	--	--
SR 99 SB Ramps to SR 99 NB Ramps	--	--	--	--	--	--	--	--	--
Bryan(2) to SR 99 SB Ramps	--	--	--	--	--	--	--	--	--
Sierra Avenue									
Bryan to Polk	1	239	C	184	C	124	C	201	C
Polk Avenue									
Herndon to Sierra	1	491	D	286	C	455	C	439	C
Golden State Boulevard									
Herndon to Veterans	1	339	C	830	F	422	C	747	D
Veterans to Carnegie	1	306	C	249	C	295	C	319	C
Carnegie to Shaw	1	507	D	630	D	940	F	516	D
Shaw to Ashlan	1	856	F	595	D	1,548	F	607	D
Shaw Avenue									
w/o SR 99 SB Ramps	1	1,426	F	944	F	1,120	F	1,623	F
SR 99 SB Ramps to SR 99 NB Ramps	1-2	1,215	F	1,474	D	1,187	F	2,049	F
SR 99 NB Ramps to Golden State	2	1,230	D	1,473	D	1,462	D	2,072	F
Golden State to Brawley	3	1,766	D	1,706	C	2,441	D	2,545	E
Brawley to Marks	3	1,848	D	1,586	C	2,365	D	2,483	E
Marks to West	3	2,181	D	1,482	C	1,944	D	2,091	D
e/o West	3	2,067	D	1,340	C	1,758	D	2,038	D
Grantland Avenue									
Parkway to Bullard	1	734	D	378	C	519	D	581	D
Bullard to Barstow	1	472	C	450	C	360	C	486	D
Palm Avenue									
Herndon to Bullard	2	1,223	D	1,268	D	1,282	D	1,150	D
Dante Avenue									
Polk to Bullard	1	196	C	184	C	179	C	174	C
Carnegie Avenue									
Golden State to Bullard	1	335	C	726	D	880	F	430	C
Ashlan Avenue									
SR 99 SB Ramps to SR 99 NB Ramps	2	2,123	F	1,041	C	1,759	F	1,963	F

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* , for State Two-Way Arterials (Class II) & Non-State Roadways.

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact

- Carnegie Avenue: Golden State Boulevard to Bullard Avenue (eastbound p.m. peak hour)
- Ashlan Avenue: SR 99 southbound ramps to SR 99 northbound ramps (eastbound both peak hours; westbound p.m. peak hour)

Year 2012 Freeway Level of Service Analyses

Year 2012 freeway segment traffic volume forecasts were post-processed by DKS using the existing AADT obtained from the Caltrans, the 2012 ambient growth rate from the Fresno COG travel model, and the traffic generated by cumulative projects.

Mainline Levels of Service

Year 2012 freeway segment level of service, in terms of density, in the vicinity of the project site were evaluated by applying the HCM methodology for basic freeway segments. The HCS program was used to perform these calculations. Table 7-11 provides the 2012 baseline freeway level of service summary.

Table 7-11 – Year 2012 Freeway Segment Level of Service Summary

Freeway	From	To	Density	LOS
Northbound AM				
SR 99	Herndon Avenue	Avenue 7	15.0	B
	Veterans Boulevard	Herndon Avenue	14.1	B
	Shaw Avenue	Veterans Boulevard		
	Ashlan Avenue	Shaw Avenue	15.1	B
	Dakota Avenue	Ashlan Avenue	21.0	C
Southbound AM				
SR 99	Avenue 7	Herndon Avenue	18.9	C
	Herndon Avenue	Veterans Boulevard	16.1	B
	Veterans Boulevard	Shaw Avenue		
	Shaw Avenue	Ashlan Avenue	17.4	B
	Ashlan Avenue	Dakota Avenue	23.2	C
Northbound PM				
SR 99	Herndon Avenue	Avenue 7	23.1	C
	Veterans Boulevard	Herndon Avenue	20.2	C
	Shaw Avenue	Veterans Boulevard		
	Ashlan Avenue	Shaw Avenue	21.6	C
	Dakota Avenue	Ashlan Avenue	28.9	D
Southbound PM				
SR 99	Avenue 7	Herndon Avenue	20.2	C
	Herndon Avenue	Veterans Boulevard	18.9	C
	Veterans Boulevard	Shaw Avenue		
	Shaw Avenue	Ashlan Avenue	20.9	C
	Ashlan Avenue	Dakota Avenue	29.2	D

As this table illustrates, with the 2012 SR 99 widening improvements to six lanes in the study area, most of the freeway segments are forecast to operate with satisfactory LOS (LOS C or better). However, SR 99 between Dakota Avenue and Ashlan Avenue is forecast to operate at unsatisfactory LOS (LOS D) during the p.m. peak hour in the northbound and southbound directions.

Ramp Weaving Analysis

As previously described, the methodology shown in Figure 504.7A from the 2006 Caltrans Highway Design Manual (2006 HDM) was used to determine the freeway weaving LOS. The freeway weaving segments on SR 99 that were analyzed include the segment from Shaw Avenue to Herndon Avenue. Year 2012 baseline peak hour on- and off-ramp traffic volumes and mainline volumes were analyzed using Figure 504.7A from the Caltrans HDM. Results from this analysis are shown in Table 7-12. Detailed calculations shown on the Leisch nomographs are provided in Appendix F.

Table 7-12 – Year 2012 Baseline Freeway Weaving Level of Service Summary

			LOS	
Weaving Section	Distance	# of Lanes	AM	PM
State Route 99 Northbound				
- Shaw Avenue to Herndon Avenue	1.8 miles	2	D	F
State Route 99 Southbound				
- Herndon Avenue to Shaw Avenue	1.8 miles	2	D	E

As shown in the table, the following weaving sections are forecast to operate at an unsatisfactory LOS (LOS D or worse) in the 2012 baseline scenario:

- SR 99 northbound: Shaw Avenue to Herndon Avenue (LOS D in the a.m. peak hour and LOS F in the p.m. peak hour)
- SR 99 southbound: Herndon Avenue to Shaw Avenue (LOS D in the a.m. peak hour and LOS F in the p.m. peak hour)

At-Grade Railroad Crossing Analysis

Using the HCM "Back of Queue" queuing methodology to analyze the vehicular queuing, Table 7-13 presents the at-grade railroad crossing analysis summary for the 2012 baseline condition. The HCM calculation sheets are provided in Appendix H.

According to the table, the Herndon Avenue crossing is forecast to have vehicular queues extending from the crossing, west toward the SR 99 northbound off-ramp, and east toward Bryan Avenue in one or both peak hours. Similarly, the Carnegie Avenue crossing would have queues extending from the crossing, west to Golden State Boulevard, and east to Bullard Avenue in one or both peak hours. And also, the Shaw Avenue crossing would have queues extending from the crossing, west to SR 99 northbound ramps, and east to Blythe Avenue in both peak hours.

Table 7-13 – Year 2012 Baseline Condition At-Grade Railroad Crossing Analysis Summary

Crossing Location	Peak Hour [1]	Rail Crossing Time (seconds) [2]	Vehicular Queue (feet) [3]		Impact to Adjacent Major Intersection [4]			
			e/o tracks	w/o tracks	e/o tracks		w/o tracks	
Herndon Avenue	AM	205	2,038	1,560	Yes	1,705 ft to Bryan Ave	Yes	725 ft to SR 99 NB ramps
	PM	156	1,228	1,800	No		Yes	
Carnegie Avenue	AM	243	1,142	516	Yes	720 ft to Bullard Ave	Yes	75 ft to Golden State Blvd
	PM	110	290	758	No		Yes	
Shaw Avenue	AM	300	2,897	3,067	Yes	1,560 ft to Blythe Ave	Yes	2,600 ft to SR 99 NB ramps
	PM	235	5,309	4,775	Yes		Yes	

[1] - Based on observed train crossings in 2007 within the AM and PM peak commute hours.

[2] - Based on time that train crossing gate arms go down, to time gate arms go up.

[3] - Vehicle queue determined using *Highway Capacity Manual* (HCM) "Back of Queue Equation".

[4] – Impact based on whether vehicular queue would extend to an adjacent major intersection. For Herndon and Shaw Avenues the major intersection west of tracks will be the northbound ramp intersections with SR 99, rather than the closely spaced intersections with Golden State Blvd/Herndon Ave (125 ft) and Golden State Blvd/Shaw Ave (50 ft).

Year 2017 Baseline Condition

The proposed project's Phases 3 and 4 "opening year" was determined to be 2017 in which Phases 1, 2 (2A and 2B), 3, and 4 would be completely constructed and fully occupied. Per direction of the City Traffic Engineer, forecast traffic volumes for this phase were calculated directly (and post-processed) from Fresno COG's 2017 travel model. Direct use of the travel model for this horizon year versus the manual "build-up" method for 2010 and 2012 was preferred since year 2017 is 10 years beyond the existing base traffic volumes analyzed in the TIS. In addition, use of the travel model for 2017 forecasts indicates a better distribution of 2017 background traffic due to changes in the overall regional network and other major changes in land uses throughout the region.

Street Network and Intersection Geometrics

As previously shown in Figure 7-2, Future Study Area Roadway Network Improvements, the following network improvements were assumed to be planned for the study area by 2017:

- Herndon Avenue grade separation with UPRR tracks; and reconfiguration of Weber Avenue/Herndon Avenue intersection.
- Extension of Veterans Boulevard westward over SR 99 to West Fresno
- Construction of new Veterans Boulevard (partial cloverleaf) interchange at SR 99, including a grade separation with UPRR tracks
- Reconfiguration of Shaw Avenue ramps at SR 99 to a partial cloverleaf

According to the City and Caltrans, a partial cloverleaf interchange is planned for the future SR 99/Veterans Boulevard interchange and is currently going through the Caltrans PSR process which is being funded by the City of Fresno. The PSR is the first step in the Caltrans process for the planning, development, and construction of a new interchange on the State highway system. The next steps for the proposed freeway interchange would be receiving a Measure C funding allocation from the Fresno County Transportation Authority (FCTA), initiating the environmental review process, public hearing, selection of a Preferred Alternative through the Project Approval Report, acquiring right-of-way, preparing the final design and construction bid documents, utility relocation, bidding, and constructing the project.

According to the *Final 2006 Measure "C" Extension Expenditure Plan* (Council of Fresno County Governments – COG), the cost estimate for the construction of Veterans Boulevard (Herndon Avenue to Grantland Avenue) and its grade separation, or interchange, with SR 99 is approximately $60,000,000 (in 2004 dollars). Veterans Boulevard is one of 14 Urban Tier 1 projects to be funded over the next 18 years in the Measure C Extension Expenditure Plan that was approved by the voters in Fresno County. The FCTA and Fresno COG are considering whether to utilize any bonding to accelerate schedules for some of the Measure C Tier 1 Urban projects, or whether to utilize a "pay as you go" program. Under a "pay as you go" program, there would be $9,000,000 available this year for the Tier 1 Urban program. It should be noted that priorities have not been set for which projects will be constructed first.

For purposes of this TIS, Veterans Boulevard, from Herndon Avenue to Grantland Avenue, including its interchange/overpass with SR 99 and the UP railroad tracks, has been assumed to be in-place and fully operational by Phases 3 and 4 (2017 planned opening year) and Phase 5 (2019 planned opening year) of the Master Plan. Phases 3, 4, and 5 rely on an accelerated funding schedule (e.g., "pay as you go") for the Veterans Boulevard project as traffic generated by those phases would be heavily dependent on the adjacent future interchange at SR 99/Veterans Boulevard. Without the Veterans Boulevard project in full

operation for Phases 3, 4, and 5, significant unavoidable traffic impacts would occur in the project study area, including the SR 99 interchanges at Herndon Avenue and Shaw Avenue.

Existing geometrics and traffic control, plus the improvements listed in the 2010 and 2012 baseline conditions, plus the improvements listed above have been assumed for the 2017 baseline scenario.

Year 2017 Baseline Traffic Volumes

Figure 7-5 illustrates the 2017 baseline weekday a.m. and p.m. peak hour traffic volumes. Year 2017 traffic volumes were forecasted for this phase and calculated directly (and post-processed) from Fresno COG's 2017 travel model. Direct use of the travel model for this horizon year versus the manual "build-up" method for 2010 and 2012 was preferred since year 2017 is 10 years beyond the existing base traffic volumes analyzed in the TIS. Appendix J contains the travel model data from the Fresno COG.

Year 2017 Baseline Intersection Levels of Service

Year 2017 Baseline traffic volumes were input into Synchro to evaluate levels of service. Table 7-14 presents the resulting LOS for the study intersections. According to the table, the following study area intersections are forecast to operate with an unsatisfactory LOS (i.e. LOS E or F for City intersections, and LOS D, E, or F for Caltrans facilities) in the 2017 baseline condition:

- SR 99 southbound off-ramp/Herndon Avenue (LOS E in the p.m. peak hour)
- Brawley Avenue/Herndon Avenue (LOS E in the p.m. peak hour)
- Palm Avenue/Herndon Avenue (LOS F in the p.m. peak hour)
- Golden State Boulevard/Veterans Boulevard (LOS E in the p.m. peak hour)
- Carnegie Avenue/Bullard Avenue (LOS F in the a.m. and p.m. peak hour)
- Golden State Boulevard/Carnegie Avenue (LOS F in the a.m. and p.m. peak hours)
- Dante Avenue/Bullard Avenue (LOS F in the p.m. peak hour)
- Palm Avenue/Bullard Avenue (LOS E in the a.m. peak hour and LOS F in the p.m. peak hour)
- Golden State Boulevard/Shaw Avenue (LOS F in the a.m. and p.m. peak hours)
- Marks Avenue/Shaw Avenue (LOS E in the p.m. peak hour)
- SR 99 southbound ramps/Ashlan Avenue (LOS D in the a.m. peak hour LOS E in the p.m. peak hour)
- SR 99 northbound ramps/Ashlan Avenue (LOS D in the a.m. and p.m. peak hours)

Signal Warrant Analysis

A peak hour traffic signal warrant was conducted for the unsignalized intersections that were forecast to operate with an unsatisfactory LOS in the 2017 baseline condition. The peak hour signal warrant analysis was performed based on the MUTCD. Appendix D contains the signal warrant analysis worksheets. Based on the peak hour signal warrant analysis, all impacted unsignalized intersections would meet the minimum volumes for the MUTCD peak hour warrant criteria.

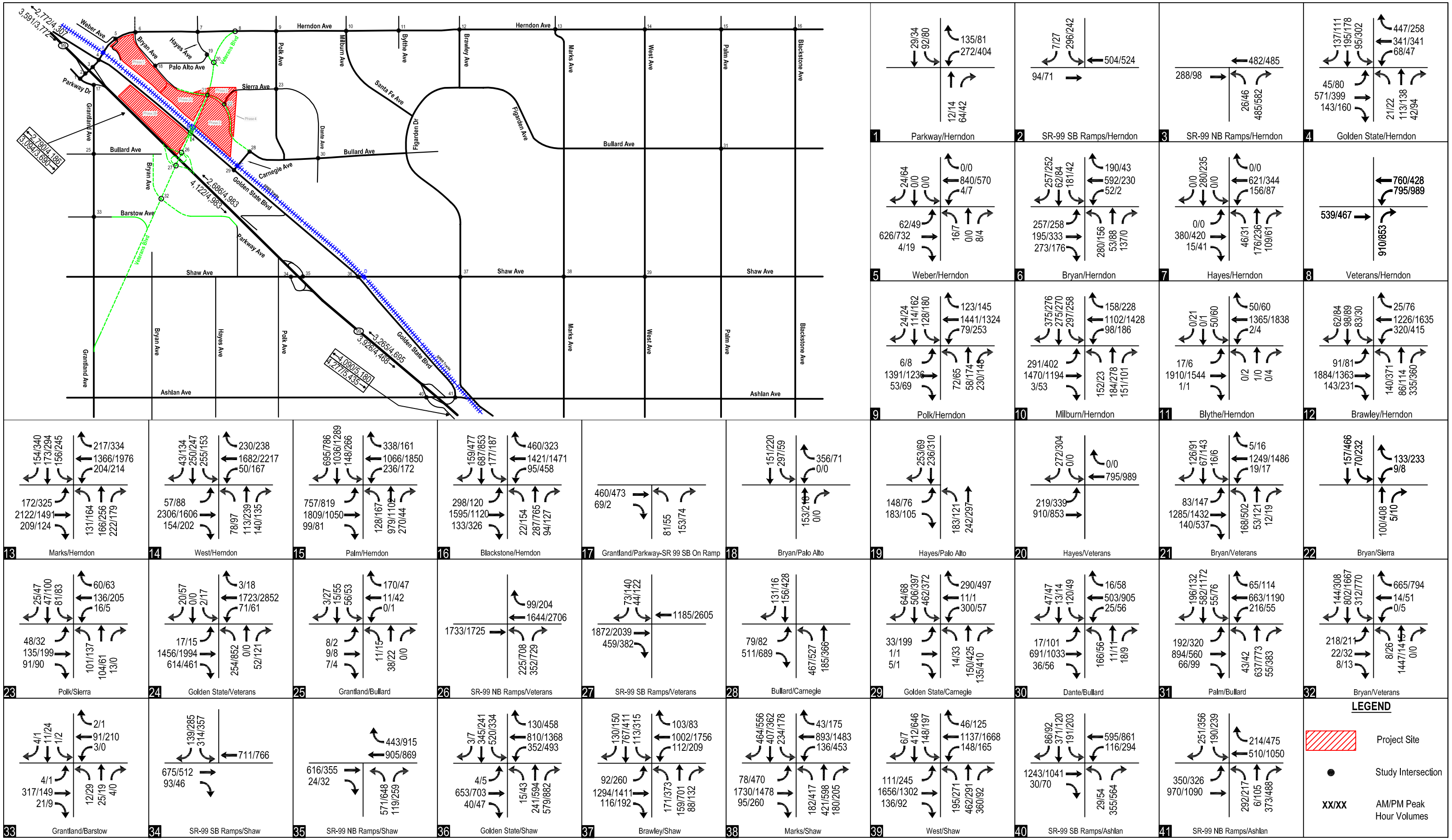

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Figure 7-5
Year 2017 Baseline Weekday AM & PM Peak Hour Traffic Volumes

Table 7-14 – Year 2017 Baseline Intersection Level of Service Summary

			AM Peak Hour		PM Peak Hour	
	Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	Parkway/Herndon	unsignalized	10.1	B	14.7	B
2	99 SB Ramps/Herndon	unsignalized	36.3	E	26.6	D
3	99 NB Ramps/Herndon	unsignalized	29.5	D	22.8	C
4	Golden State/Herndon	signal	15.9	B	18.7	B
5	Weber/Herndon	unsignalized	10.2	B	9.9	A
6	Bryan/Herndon	signal	31.8	C	36.6	D
7	Hayes/Herndon	signal	20.4	C	19.5	B
8	Veterans/Herndon	signal	6.1	A	6.4	A
9	Polk/Herndon	signal	18.7	B	22.0	C
10	Milburn/Herndon	signal	28.3	C	31.0	C
11	Blythe/Herndon	signal	14.2	B	15.9	B
12	Brawley/Herndon	signal	45.4	D	59.6	E
13	Marks/Herndon	signal	28.9	C	38.5	D
14	West/Herndon	signal	36.0	D	33.3	C
15	Palm/Herndon	signal	51.9	D	>80	F
16	Blackstone/Herndon	signal	25.3	C	32.3	C
17	Grantland/Parkway	unsignalized	13.6	B	12.6	B
18	Bryan/Palo Alto	unsignalized	11.3	B	9.4	A
19	Hayes/Palo Alto	unsignalized	19.0	C	16.4	C
20	Veterans/Hayes	signal	9.3	A	12.5	B
21	Veterans/Bryan	signal	14.9	B	24.6	C
22	Bryan/Sierra	signal	12.1	B	10.5	B
23	Polk/Sierra	unsignalized	11.0	B	13.6	B
24	Golden State/Veterans	signal	20.0	C	56.5	E
25	Grantland/Bullard	unsignalized	10.9	B	10.4	B
26	99 NB Ramps/Veterans	signal	8.2	A	14.6	B
27	99 SB Ramps/Veterans	signal	3.4	A	7.3	A
28	Carnegie/Bullard	unsignalized	>50	F	>50	F
29	Golden State/Carnegie	unsignalized	>50	F	>50	F
30	Dante/Bullard	unsignalized	29.6	D	>50	F
31	Palm/Bullard	signal	60.9	E	>80	F
32	Veterans/Bryan	signal	21.4	C	26.0	C
33	Grantland/Barstow	unsignalized	12.9	B	11.8	B
34	99 SB Ramps/Shaw	signal	11.1	B	10.5	B
35	99 NB Ramps/Shaw	signal	11.4	B	11.2	B
36	Golden State/Shaw	signal	>80	F	>80	F
37	Brawley/Shaw	signal	24.7	C	41.6	D
38	Marks/Shaw	signal	31.6	C	61.2	E
39	West/Shaw	signal	26.9	C	33.8	C
40	99 SB Ramps/Ashlan	signal	35.2	D	56.0	E
41	99 NB Ramps/Ashlan	signal	36.4	D	53.9	D

Queuing Analysis

Table 7-15 presents the results of the 2017 Baseline weekday a.m. and p.m. peak hour queuing analysis based on the Synchro LOS analysis and the calculated 95th percentile queue lengths for each left- and/or right turn storage lane for each study area intersection. Based on the queuing analysis, the following intersections are forecast to have 95th percentile queues that exceed the storage lengths of one or more movements during the weekday peak hours:

- Bryan Avenue/Herndon Avenue (NBL in a.m. peak hour; and EBL in both peak hours)
- Milburn Avenue/Herndon Avenue (SBR in a.m. peak hour)
- Brawley Avenue/Herndon Avenue (NBL and WBL in both peak hours; NBR and SBL in a.m. peak hour; EBR in p.m. peak hour)
- Marks Avenue/Herndon Avenue (SBR, EBL, and WBR in p.m. peak hour; and EBR in both peak hours)
- West Avenue/Herndon Avenue (SBL in both peak hours)
- Palm Avenue/Herndon Avenue (NBL in p.m. peak hour; SBR and EBL in both peak hours; and WBR in a.m. peak hour)
- Blackstone Avenue/Herndon Avenue (SBR and EBR in p.m. peak hour; and WBR in both peak hours)
- Golden State Boulevard/Veterans Boulevard (NBL in p.m. peak hour)
- Palm Avenue/Bullard Avenue (NBR in a.m. peak hour; SBL and EBL in both peak hours; and WBL in a.m. peak hour)
- Bryan Avenue (west)/Veterans Boulevard (SBL and WBR in both peak hours)
- Golden State Boulevard/Shaw Avenue (NBR, SBL, and WBL in both peak hours; WBR in p.m. peak hour)
- Marks Avenue/Shaw Avenue (NBL and EBL in p.m. peak hour; and SBR in both peak hours)
- West Avenue/Shaw Avenue (NBR in a.m. peak hour)
- SR 99 southbound ramps/Ashlan Avenue (SBR in both peak hours)
- SR 99 northbound ramps/Ashlan Avenue (NBL and WBR in p.m. peak hour; and EBL in both peak hours)

Table 7-15 - Year 2017 Baseline Intersection Queuing Analysis Summary

Signalized Intersection		Storage & 95th Percentile Queue Lengths (ft)							
		NBL	NBR	SBL	SBR	EBL	EBR	WBL	WBR
2 99 SB Ramps/Herndon	Storage Length[1]	--	--	1,400	60	--	--	--	--
	AM Queue[1]	--	--	162	1	--	--	--	--
	PM Queue[1]	--	--	108	5	--	--	--	--
3 99 NB Ramps/Herndon	Storage Length[1]	1,400	--	--	--	--	--	--	--
	AM Queue[1]	215	--	--	--	--	--	--	--
	PM Queue[1]	206	--	--	--	--	--	--	--
4 Golden State/Herndon	Storage Length[1]	310	--	330	200	330	200	330	200
	AM Queue[1]	13	--	39	40	21	35	56	55
	PM Queue[1]	13	--	109	34	31	39	43	48
6 Bryan/Herndon	Storage Length[1]	250	250	250	250	165	165	165	165
	AM Queue[1]	284	45	156	60	265	53	64	53
	PM Queue[1]	114	0	130	58	290	48	7	28
7 Hayes/Herndon	Storage Length[1]	140	--	100	--	350	250	250	150
	AM Queue[1]	23	--	24	--	48	12	56	0
	PM Queue[1]	17	--	23	--	24	21	36	0
8 Veterans/Herndon	Storage Length[1]	--	250	--	--	--	--	250	--
	AM Queue[1]	--	60	--	--	--	--	98	--
	PM Queue[1]	--	41	--	--	--	--	119	--
9 Polk/Herndon	Storage Length[1]	140	--	200	160	225	100	250	100
	AM Queue[1]	32	--	58	15	6	20	35	39
	PM Queue[1]	29	--	89	15	7	25	106	42
10 Milburn/Herndon	Storage Length[1]	225	100	230	100	230	135	230	140
	AM Queue[1]	69	40	132	175	129	5	44	40
	PM Queue[1]	18	38	134	56	187	24	82	72
11 Blythe/Herndon	Storage Length[1]	235	235	120	120	220	140	220	140
	AM Queue[1]	0	0	34	0	15	2	4	20
	PM Queue[1]	4	0	39	20	8	3	6	27
12 Brawley/Herndon	Storage Length[1]	105	75	80	80	290	150	310	100
	AM Queue[1]	223	136	127	37	112	71	415	18
	PM Queue[1]	539	73	60	48	145	153	587	53
13 Marks/Herndon	Storage Length[1]	245	125	160	160	145	50	280	190
	AM Queue[1]	88	123	110	57	87	97	126	92
	PM Queue[1]	70	44	147	215	186	66	64	209
14 West/Herndon	Storage Length[1]	175	65	185	350	260	200	275	140
	AM Queue[1]	52	96	353	28	41	54	38	75
	PM Queue[1]	56	60	217	69	35	89	85	76
15 Palm/Herndon	Storage Length[1]	145	280	250	230	245	190	210	145
	AM Queue[1]	98	115	92	477	374	41	153	306
	PM Queue[1]	168	30	200	918	593	32	111	122
16 Blackstone/Herndon	Storage Length[1]	250	110	240	90	250	160	250	100
	AM Queue[1]	16	33	93	41	135	32	46	159
	PM Queue[1]	93	41	82	351	67	170	212	128
17 Grantland/Parkway	Storage Length[1]	420	80	--	--	--	--	--	--
	AM Queue[1]	30	30	--	--	--	--	--	--
	PM Queue[1]	13	13	--	--	--	--	--	--
18 Bryan/Palo Alto	Storage Length[1]	150	150	150	150	--	--	150	150
	AM Queue[1]	0	0	22	0	--	--	49	49
	PM Queue[1]	0	0	4	0	--	--	7	7
20 Hayes/Veterans	Storage Length[1]	--	--	150	150	150	--	--	150
	AM Queue[1]	--	--	0	0	108	--	--	0
	PM Queue[1]	--	--	0	3	232	--	--	0
21 Bryan/Veterans	Storage Length[1]	150	150	150	150	150	150	150	150
	AM Queue[1]	154	11	22	39	89	31	26	6
	PM Queue[1]	597	16	20	49	243	250	37	19
22 Bryan/Sierra	Storage Length[1]	150	150	150	150	150	150	150	150
	AM Queue[1]	0	5	33	0	0	0	7	23
	PM Queue[1]	0	8	147	0	0	0	11	44
24 Golden State/Veterans	Storage Length[1]	310	--	300	--	380	250	320	0
	AM Queue[1]	170	--	7	--	26	65	103	0
	PM Queue[1]	774	--	41	--	37	180	142	0
25 Grantland/Bullard	Storage Length[1]	250	--	250	--	250	100	100	100
	AM Queue[1]	1	--	3	--	2	1	0	16
	PM Queue[1]	1	--	3	--	0	0	0	4
26 SR 99 NB Ramps/Veterans	Storage Length[1]	1,000	1,000	--	--	--	--	--	380
	AM Queue[1]	40	69	--	--	--	--	--	0
	PM Queue[1]	149	225	--	--	--	--	--	0
27 SR 99 SB Ramps/Veterans	Storage Length[1]	--	--	1,000	1,000	--	400	--	--
	AM Queue[1]	--	--	29	33	--	0	--	--
	PM Queue[1]	--	--	78	89	--	0	--	--
31 Palm/Bullard	Storage Length[1]	120	55	90	70	150	150	140	0
	AM Queue[1]	110	37	141	65	233	33	351	0
	PM Queue[1]	107	198	145	69	510	32	117	0
32 Bryan (West)/Veterans[2]	Storage Length[1]	150	150	150	150	150	150	150	150
	AM Queue[1]	19	0	329	7	87	10	0	219
	PM Queue[1]	45	0	389	23	100	15	15	303
34 99 SB Ramps/Shaw[2]	Storage Length[1]	--	--	1,000	1,000	--	150	--	--
	AM Queue[1]	--	--	104	33	--	0	--	--
	PM Queue[1]	--	--	122	82	--	0	--	--
35 99 NB Ramps/Shaw[2]	Storage Length[1]	1,430	1,000	--	--	--	150	--	150
	AM Queue[1]	278	22	--	--	--	0	--	0
	PM Queue[1]	326	30	--	--	--	0	--	0
36 Golden State/Shaw	Storage Length[1]	140	140	165	165	180	180	190	190
	AM Queue[1]	37	557	714	6	18	38	525	55
	PM Queue[1]	76	926	551	10	18	44	761	273
37 Brawley/Shaw	Storage Length[1]	260	100	220	130	220	130	200	120
	AM Queue[1]	84	28	49	33	22	8	47	30
	PM Queue[1]	188	70	178	50	159	69	67	22
38 Marks/Shaw	Storage Length[1]	190	105	240	270	235	135	275	155
	AM Queue[1]	105	80	118	354	41	37	84	20
	PM Queue[1]	232	66	108	444	247	128	248	72
39 West/Shaw	Storage Length[1]	240	75	185	115	240	155	210	125
	AM Queue[1]	105	229	86	9	51	36	86	19
	PM Queue[1]	144	37	87	11	136	30	75	51
40 99 SB Ramps/Ashlan	Storage Length[1]	100	100	360	110	--	100	575	--
	AM Queue[1]	47	254	244	0	--	24	168	--
	PM Queue[1]	72	395	275	0	--	47	356	--
41 99 NB Ramps/Ashlan	Storage Length[1]	240	520	210	210	320	--	--	85
	AM Queue[1]	178	151	80	60	379	--	--	75
	PM Queue[1]	283	346	174	108	443	--	--	412

Notes:
[1] Storage length determined by field measurement and review of scaled aerial photography. AM & PM queue lengths determined in *Synchro*.
[2] Intersection is not existing, storage lengths are based upon 95th Percentile Queue.
XXX-Denotes 95th percentile queue that would exceed the lane's storage capacity.

Year 2017 Baseline Roadway Level of Service Analysis

Table 7-16 presents the results of the roadway segment level of service analysis for the 2017 Baseline condition. According to the City guidelines, if a roadway segment varies between the total number of lanes, the lowest number of lanes is to be analyzed for the entire roadway segment. Based on the roadway segment analysis, the following roadway segments are operating with unsatisfactory LOS (LOS E or LOS F):

- Herndon Avenue: West Avenue to Palm Avenue (eastbound a.m. peak hour; and westbound p.m. peak hour)
- Veterans Boulevard: Golden State Boulevard to Bryan Avenue (southbound p.m. peak hour)
- Veterans Boulevard: SR 99 northbound ramps to Golden State Boulevard (both directions p.m. peak hour)
- Veterans Boulevard: SR 99 southbound ramps to SR 99 northbound ramps (both directions both peak hours)
- Veterans Boulevard: Bryan Avenue (west) to SR 99 southbound ramps (southbound p.m. peak hour)
- Sierra Avenue: Bryan Avenue to Polk Avenue (westbound p.m. peak hour)
- Golden State Boulevard: Herndon Avenue to Veterans Boulevard (southbound a.m. peak hour)
- Golden State Boulevard: Veterans Boulevard to Carnegie Avenue (southbound a.m. peak hour; both directions p.m. peak hour)
- Golden State Boulevard: Carnegie Avenue to Shaw Avenue (southbound a.m. peak hour; both directions p.m. peak hour)
- Golden State Boulevard: Shaw Avenue to Ashlan Avenue (northbound both peak hours)
- Shaw Avenue: west of SR 99 southbound ramps (both directions a.m. peak hour; westbound p.m. peak hour)
- Shaw Avenue: SR 99 southbound ramps to SR 99 northbound ramps (both directions both peak hours)
- Shaw Avenue: SR 99 northbound ramps to Golden State Boulevard (westbound p.m. peak hour)
- Shaw Avenue: Brawley Avenue to Marks Avenue (westbound p.m. peak hour)
- Carnegie Avenue: Golden State Boulevard to Bullard Avenue (eastbound p.m. peak hour)
- Ashlan Avenue: SR 99 southbound ramps to SR 99 northbound ramps (eastbound a.m. peak hour; both directions p.m. peak hour)

Table 7-16 - Year 2017 Baseline Roadway Segment Level of Service Summary

		2017 Baseline							
		AM Peak Hour				PM Peak Hour			
Roadway Segment	No. of Lanes	EB/NB Volume	LOS[1]	WB/SB Volume	LOS[1]	EB/NB Volume	LOS[1]	WB/SB Volume	LOS[1]
Herndon Avenue									
Parkway to SR 99 SB Ramps	1	156	C	511	C	122	C	551	C
SR 99 SB Ramps to SR 99 NB Ramps	1	390	C	508	C	313	C	531	C
SR 99 NB Ramps to Golden State	1	773	D	499	C	680	D	485	C
Golden State to Weber	3	708	C	880	C	800	C	646	C
Weber to Bryan	3	725	C	1,129	C	767	C	638	C
Bryan to Hayes	3	513	C	834	C	503	C	375	C
Hayes to Veterans	3	539	C	777	C	481	C	431	C
Veterans to Polk	3	1,450	C	1,555	C	1,320	C	1,417	C
Polk to Milburn	3	1,764	C	1,643	C	1,649	C	1,727	C
Milburn to Blythe	3	1,928	C	1,365	C	1,553	C	1,861	C
Blythe to Brawley	3	2,118	D	1,428	C	1,675	C	2,090	C
Brawley to Marks	3	2,503	D	1,651	C	1,940	C	2,480	D
Marks to West	3	2,517	D	1,803	C	1,915	C	2,524	D
West to Palm	3	2,701	E	1,962	C	1,950	C	2,803	F
Palm to Blackstone	3	2,227	D	1,640	C	1,566	C	2,183	D
e/o Blackstone	3	1,866	C	1,976	C	1,434	C	2,252	D
Parkway Drive									
Herndon and Grantland	1	81	C	529	D	56	C	475	C
Bryan Avenue									
Herndon to Palo Alto	1	509	D	525	D	289	C	397	C
Palo Alto to Veterans	1	153	C	507	D	284	C	291	C
Veterans to Sierra	1	233	C	227	C	642	D	698	D
Sierra and Carnegie	1	264	C	287	C	448	C	444	C
Carnegie to Dante	2	652	C	667	C	893	C	1,117	C
Palo Alto Avenue									
Bryan to Hayes	1	331	C	356	C	181	C	71	C
Hayes Avenue									
Herndon to Palo Alto	1	390	C	489	D	373	C	379	C
Palo Alto to Veterans	1	425	C	419	C	418	C	415	C
Veterans Avenue									
Hayes to Herndon	3	910	C	795	C	853	C	989	C
Bryan to Hayes	3	1,313	C	1,273	C	1,457	C	1,519	C
Golden State to Bryan	3	1,510	C	1,797	D	2,132	D	2,931	F
SR 99 NB Ramps to GS	3	2,087	D	1,997	D	2,470	E	3,761	F
SR 99 SB Ramps to SR 99 NB Ramps	3	1,916	D	1,869	D	2,161	D	3,414	F
Bryan(2) to SR 99 SB Ramps	3	2,331	D	1,258	C	2,421	D	2,745	F
Sierra Avenue									
Bryan to Polk	1	274	C	395	C	321	C	1,117	F
Polk Avenue									
Herndon to Sierra	1	360	C	290	C	387	C	376	C
Golden State Boulevard									
Herndon to Veterans	1	176	C	785	E	254	C	596	D
Veterans to Carnegie	1	473	C	1,032	F	1,121	F	837	F
Carnegie to Shaw	1	376	C	868	F	1,057	F	895	F
Shaw to Ashlan	1	835	F	515	D	1,519	F	746	D
Shaw Avenue									
w/o SR 99 SB Ramps	1	768	E	850	F	558	D	1,051	F
SR 99 SB Ramps to SR 99 NB Ramps	1-2	989	F	1,476	D	869	F	1,517	F
SR 99 NB Ramps to Golden State	2	735	C	1,348	D	755	C	1,784	F
Golden State to Brawley	3	1,752	D	1,303	C	1,919	D	2,319	D
Brawley to Marks	3	1,903	D	1,539	C	2,208	D	2,456	E
Marks to West	3	2,144	D	1,338	C	1,861	D	2,111	D
e/o West	3	2,164	D	1,331	C	1,591	C	1,958	D
Grantland Avenue									
Parkway to Bullard	1	234	C	74	C	129	C	135	C
Bullard to Barstow	1	49	C	192	C	37	C	106	C
Palm Avenue									
Herndon to Bullard	2	1,377	D	1,473	D	1,313	D	1,531	D
Dante Avenue									
Polk to Bullard	1	229	C	212	C	282	C	273	C
Carnegie Avenue									
Golden State to Bullard	1	598	D	601	D	783	E	555	D
Ashlan Avenue									
SR 99 SB Ramps to SR 99 NB Ramps	2	1,789	F	1,053	C	1,808	F	1,623	E

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* , for State Two-Way Arterials (Class II) & Non-State Roadways.

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact

Year 2017 Freeway Level of Service Analyses

Year 2017 freeway segment traffic volume forecasts were post-processed by DKS using the existing AADT obtained from the Caltrans Traffic and Vehicle Data Systems Unit webpage. The difference between the future model volume and the existing model volume was added to the existing count to calculate the future analysis volume.

Mainline Levels of Service

Year 2017 freeway segment level of service, in terms of density, in the vicinity of the project site were evaluated by applying the HCM methodology for basic freeway segments. The HCS program was used to perform these calculations. Table 7-17 provides the 2017 freeway segment level of service summary.

Table 7-17 – Year 2017 Freeway Segment Level of Service Summary

Freeway	From	To	Density	LOS
Northbound AM				
SR 99	Herndon Avenue	Avenue 7	16.8	B
	Veterans Boulevard	Herndon Avenue	17.6	B
	Shaw Avenue	Veterans Boulevard	16.9	B
	Ashlan Avenue	Shaw Avenue	20.1	C
	Dakota Avenue	Ashlan Avenue	25.8	C
Southbound AM				
SR 99	Avenue 7	Herndon Avenue	21.8	C
	Herndon Avenue	Veterans Boulevard	19.5	C
	Veterans Boulevard	Shaw Avenue	26.1	D
	Shaw Avenue	Ashlan Avenue	24.2	C
	Ashlan Avenue	Dakota Avenue	27.2	D
Northbound PM				
SR 99	Herndon Avenue	Avenue 7	26.5	D
	Veterans Boulevard	Herndon Avenue	26.5	D
	Shaw Avenue	Veterans Boulevard	33.3	D
	Ashlan Avenue	Shaw Avenue	30.0	D
	Dakota Avenue	Ashlan Avenue	35.5	E
Southbound PM				
SR 99	Avenue 7	Herndon Avenue	22.9	C
	Herndon Avenue	Veterans Boulevard	23.2	C
	Veterans Boulevard	Shaw Avenue	25.3	C
	Shaw Avenue	Ashlan Avenue	28.1	D
	Ashlan Avenue	Dakota Avenue	39.0	E

As shown in the table, the following SR 99 freeway segments are forecast to operate at unsatisfactory LOS (LOS D or worse):

- Herndon Avenue to Avenue 7 northbound (LOS D in the p.m. peak hour)
- Veterans Boulevard to Herndon Avenue northbound (LOS D in the p.m. peak hour)Shaw Avenue to Veterans Boulevard southbound (LOS D in the a.m. peak hour); northbound (LOS D in the p.m. peak hour)
- Ashlan Avenue to Shaw Avenue both directions (LOS D in the p.m. peak hour)

- Dakota Avenue to Ashlan Avenue southbound (LOS D in the a.m. peak hour); northbound (LOS E in the p.m. peak hour)

Ramp Weaving Analysis

As previously described, the methodology shown in Figure 504.7A from the 2006 Caltrans Highway Design Manual (2006 HDM) was used to determine the freeway weaving LOS. The freeway weaving sections on SR 99 that were analyzed include the segment from Shaw Avenue to (future) Veterans Boulevard and (future) Veterans Boulevard to Herndon Avenue. Year 2017 baseline peak hour on- and off-ramp traffic volumes and mainline volumes were analyzed using Figure 504.7A from the Caltrans HDM. Results from this analysis are shown in Table 7-18. Detailed calculation sheets shown on the Leisch nomographs are provided in Appendix F.

Table 7-18 – Year 2017 Baseline Freeway Weaving Level of Service Summary

			LOS	
Weaving Section	Distance	# of Lanes	AM	PM
SR 99 Northbound				
- Shaw Avenue to Veterans Boulevard	0.7 miles	3	B	E
- Veterans Boulevard to Herndon Avenue	0.5 miles	3	B	D
SR 99 Southbound				
- Herndon Avenue to Veterans Boulevard	0.5 miles	3	B	C
- Veterans Boulevard to Shaw Avenue	0.7 miles	3	D	E

As shown in the table, the following weaving sections are forecast to operate at an unsatisfactory LOS (LOS D or worse) in the 2017 baseline scenario:

- SR 99 northbound: Shaw Avenue to Veterans Avenue (LOS E in the p.m. peak hour)
- SR 99 northbound: Veterans Avenue to Herndon Avenue (LOS D in the p.m. peak hour)
- SR 99 southbound: Veterans Avenue to Shaw Avenue (LOS D in the a.m. peak hour and LOS E in the p.m. peak hour)

At-Grade Railroad Crossing Analysis

Using the HCM "Back of Queue" queuing methodology to analyze the vehicular queuing, Table 7-19 presents the at-grade railroad crossing analysis summary for the 2017 baseline condition. The HCM calculation sheets are provided in Appendix H. By 2017, according to the City, a grade separated underpass at Herndon Avenue would be constructed and would be in full operation by that date.

According to the table, the Carnegie Avenue crossing would have queues extending from the crossing, west to Golden State Boulevard, and east to Bullard Avenue in one or both peak hours. And also, the Shaw Avenue crossing would have queues extending from the crossing, west to SR 99 northbound ramps, and east to Blythe Avenue in both peak hours.

Table 7-19 – Year 2017 Baseline Condition At-Grade Railroad Crossing Analysis Summary

Crossing Location	Peak Hour [1]	Rail Crossing Time (seconds) [2]	Vehicular Queue (feet) [3]		Impact to Adjacent Major Intersection [4]			
			e/o tracks	w/o tracks	e/o tracks		w/o tracks	
Herndon Avenue	*Grade Separated Underpass Improvement*							
Carnegie Avenue	AM	243	1,014	1,198	Yes	720 ft to Bullard Ave	Yes	75 ft to Golden State Blvd
	PM	110	424	753	No		Yes	
Shaw Avenue	AM	300	2,039	3,386	Yes	1,560 ft to Blythe Ave	Yes	2,600 ft to SR 99 NB ramps
	PM	235	4,855	3,163	Yes		Yes	

[1] - Based on observed train crossings in 2007 within the AM and PM peak commute hours.

[2] - Based on time that train crossing gate arms go down, to time gate arms go up.

[3] - Vehicle queue determined using *Highway Capacity Manual* (HCM) "Back of Queue Equation".

[4] – Impact based on whether vehicular queue would extend to an adjacent major intersection. For Herndon and Shaw Avenues the major intersection west of tracks will be the northbound ramp intersections with SR 99, rather than the closely spaced intersections with Golden State Blvd/Herndon Ave (125 ft) and Golden State Blvd/Shaw Ave (50 ft).

Year 2019 Baseline Condition

The proposed project's Phase 5 "opening year" was determined to be 2019 in which Phases 1, 2 (2A and 2B), 3, 4, and 5 would be completely constructed and fully occupied. Per direction of the City Traffic Engineer, forecast traffic volumes for this phase were calculated directly (and post-processed) from Fresno COG's 2020 travel model, adjusted to 2019. Direct use of the travel model for this horizon year versus the manual "build-up" method was preferred since year 2019 is 12 years beyond the existing base traffic volumes analyzed in the TIS. In addition, use of the travel model for 2019 forecasts indicates a better distribution of 2019 background traffic due to changes in the overall regional network and other major changes in land uses throughout the region.

Street Network and Intersection Geometrics

As previously shown in Figure 7-2, Future Study Area Roadway Network Improvements, network improvements are planned for the study area by 2017, and no additional improvements are planned for 2019. Therefore, the existing geometrics and traffic control, plus the improvements listed in 2010, 2012, and 2017 have been assumed for the 2019 baseline scenario.

Year 2019 Baseline Traffic Volumes

The proposed project's final Phase 5 "opening year" was determined to be 2019. Similar to 2017, forecast traffic volumes for this phase were calculated directly (and post-processed) from Fresno COG's 2020 travel model, adjusted to 2019. Figure 7-6 illustrates the 2019 baseline condition weekday a.m. and p.m. peak hour traffic volumes.

Year 2019 Baseline Intersection Levels of Service

Year 2019 Baseline traffic volumes were input into Synchro to evaluate levels of service. Table 7-20 presents the resulting LOS for the study area intersections. According to the table, the following study area intersections are forecast to operate with an unsatisfactory LOS (i.e. LOS E or F for City intersections, and LOS D, E, or F for Caltrans facilities) in the 2017 baseline condition:

- SR 99 southbound off-ramp/Herndon Avenue (LOS E in the p.m. peak hour)
- Palm Avenue/Herndon Avenue (LOS E in the a.m. peak hour and LOS F in the p.m. peak hour)
- Golden State Boulevard/Veterans Boulevard (LOS F in the p.m. peak hour)
- Carnegie Avenue/Bullard Avenue (LOS F in the a.m. and p.m. peak hour)
- Golden State Boulevard/Carnegie Avenue (LOS F in the a.m. and p.m. peak hours)
- Dante Avenue/Bullard Avenue (LOS F in the a.m. and p.m. peak hours)
- Palm Avenue/Bullard Avenue (LOS E in the a.m. peak hour and LOS F in the p.m. peak hour)
- Golden State Boulevard/Shaw Avenue (LOS F in the a.m. and p.m. peak hours)
- Marks Avenue/Shaw Avenue (LOS E in the p.m. peak hour)
- SR 99 southbound ramps/Ashlan Avenue (LOS D in the a.m. peak hour LOS E in the p.m. peak hour)
- SR 99 northbound ramps/Ashlan Avenue (LOS D in the a.m. and p.m. peak hours)

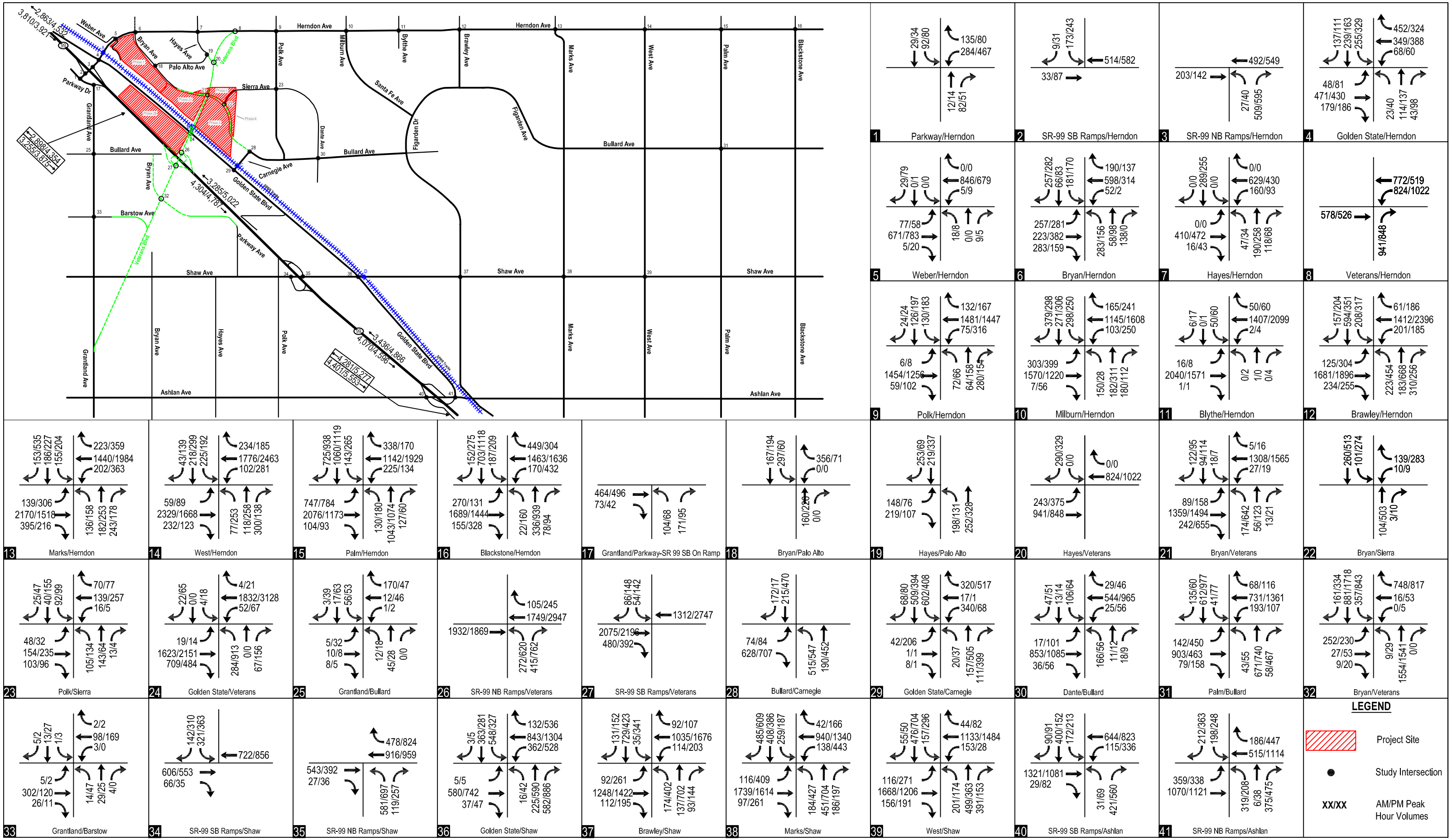

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Figure 7-6
Year 2019 Baseline Weekday AM and PM Peak Hour Traffic Volumes

Table 7-20 – Year 2019 Baseline Intersection Peak Hour Level of Service Summary

		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	unsignalized	10.4	B	19.5	C
2 99 SB Ramps/Herndon	unsignalized	18.3	C	36.9	E
3 99 NB Ramps/Herndon	unsignalized	23.0	C	29.5	D
4 Golden State/Herndon	signal	17.4	B	19.2	B
5 Weber/Herndon	unsignalized	10.4	B	10.0	B
6 Bryan/Herndon	signal	32.2	C	29.7	C
7 Hayes/Herndon	signal	20.4	C	19.9	B
8 Veterans/Herndon	signal	6.4	A	6.5	A
9 Polk/Herndon	signal	19.3	B	22.5	C
10 Milburn/Herndon	signal	28.0	C	32.6	C
11 Blythe/Herndon	signal	12.9	B	13.4	B
12 Brawley/Herndon	signal	54.4	D	55.0	D
13 Marks/Herndon	signal	29.3	C	51.8	D
14 West/Herndon	signal	40.8	D	40.1	D
15 Palm/Herndon	signal	62.3	E	>80	F
16 Blackstone/Herndon	signal	31.2	C	34.9	C
17 Grantland/Parkway	unsignalized	14.1	B	13.3	B
18 Bryan/Palo Alto	unsignalized	12.4	B	10.1	B
19 Hayes/Palo Alto	unsignalized	21.6	C	19.9	C
20 Veterans/Hayes	signal	9.6	A	10.4	B
21 Veterans/Bryan	signal	15.3	B	29.2	C
22 Bryan/Sierra	signal	9.4	A	11.7	B
23 Polk/Sierra	unsignalized	13.4	B	19.7	C
24 Golden State/Veterans	signal	20.7	C	>50	F
25 Grantland/Bullard	unsignalized	10.5	B	11.9	B
26 99 NB Ramps/Veterans	signal	9.2	A	17.1	B
27 99 SB Ramps/Veterans	signal	4.5	A	8.7	A
28 Carnegie/Bullard	unsignalized	>50	F	>50	F
29 Golden State/Carnegie	unsignalized	>50	F	>50	F
30 Dante/Bullard	unsignalized	>50	F	>50	F
31 Palm/Bullard	signal	57.7	E	>80	F
32 Veterans/Bryan	signal	26.1	C	31.3	C
33 Grantland/Barstow	unsignalized	12.9	B	11.9	B
34 99 SB Ramps/Shaw	signal	11.1	B	11.0	B
35 99 NB Ramps/Shaw	signal	11.6	B	14.2	B
36 Golden State/Shaw	signal	>80	F	>80	F
37 Brawley/Shaw	signal	24.0	C	40.6	D
38 Marks/Shaw	signal	34.0	C	64.1	E
39 West/Shaw	signal	28.3	C	28.9	C
40 99 SB Ramps/Ashlan	signal	43.5	D	61.5	E
41 99 NB Ramps/Ashlan	signal	38.3	D	53.1	D

Signal Warrant Analysis

A peak hour traffic signal warrant was conducted for the unsignalized intersections that were forecast to operate with an unsatisfactory LOS in the 2019 baseline condition. The peak hour signal warrant analysis was performed based on the MUTCD. Appendix D contains the signal warrant analysis worksheets. Based on the peak hour signal warrant analysis, all unsignalized intersections would meet the minimum volumes for the MUTCD peak hour warrant criteria.

Queuing Analysis

Table 7-21 presents the results of the 2019 Baseline weekday a.m. and p.m. peak hour queuing analysis based on the Synchro LOS analysis and the calculated 95th percentile queue lengths for each left- and/or right turn storage lane for each study area intersection. Based on the queuing analysis, the following intersections are forecast to have 95th percentile queues that exceed the storage lengths of one or more movements during the weekday peak hours:

- Bryan Avenue/Herndon Avenue (NBL in a.m. peak hour; EBL in both peak hours)
- Milburn Avenue/Herndon Avenue (SBR in a.m. peak hour)
- Brawley Avenue/Herndon Avenue (NBL and WBL in both peak hours; NBR in p.m. peak hour; and SBL in a.m. peak hour)
- Marks Avenue/Herndon Avenue (SBR, EBL, and WBR in p.m. peak hour; and EBR in both peak hours)
- West Avenue/Herndon Avenue (SBL in both peak hours)
- Palm Avenue/Herndon Avenue (SBR and EBL in both peak hours; and WBR in a.m. peak hour)
- Blackstone Avenue/Herndon Avenue (SBR in p.m. peak hour; and WBR in a.m. peak hour)
- Hayes Avenue/Veterans Boulevard (EBL in p.m. peak hour)
- Bryan Avenue/Veterans Boulevard (EBR in p.m. peak hour)
- Golden State Boulevard/Veterans Boulevard (NBL in p.m. peak hour)
- Palm Avenue/Bullard Avenue (NBR, SBL, and EBL in p.m. peak hour; and WBL in a.m. peak hour)
- Bryan Avenue (west)/Veterans Boulevard (SBL and WBR in both peak hours)
- Golden State Boulevard/Shaw Avenue (NBL and SBR in a.m. peak hour; NBR, SBL, and WBR in p.m. peak hour; WBL in both peak hours)
- Marks Avenue/Shaw Avenue (NBL, EBL, EBR, and WBL in p.m. peak hour; and SBR in both peak hours)
- West Avenue/Shaw Avenue (NBR in a.m. peak hour)
- SR 99 southbound ramps/Ashlan Avenue (SBR in both peak hours)
- SR 99 northbound ramps/Ashlan Avenue (NBL and WBR in p.m. peak hour; and EBL in both peak hours)

Table 7-21 - 2019 Baseline Intersection Peak Hour Queuing Analysis Summary

Signalized Intersection		Storage & 95th Percentile Queue Lengths (ft)							
		NBL	NBR	SBL	SBR	EBL	EBR	WBL	WBR
2 99 SB Ramps/Herndon	Storage Length[1]	--	--	1,400	60	--	--	--	--
	AM Queue[1]	--	--	51	1	--	--	--	--
	PM Queue[1]	--	--	146	6	--	--	--	--
3 99 NB Ramps/Herndon	Storage Length[1]	1,400	--	--	--	--	--	--	--
	AM Queue[1]	181	--	--	--	--	--	--	--
	PM Queue[1]	259	--	--	--	--	--	--	--
4 Golden State/Herndon	Storage Length[1]	310	--	330	200	330	200	330	200
	AM Queue[1]	14	--	96	39	22	40	56	56
	PM Queue[1]	21	--	124	34	31	42	51	53
6 Bryan/Herndon	Storage Length[1]	250	250	250	250	165	165	165	165
	AM Queue[1]	279	45	156	60	277	55	64	53
	PM Queue[1]	130	1	143	63	286	41	8	48
7 Hayes/Herndon	Storage Length[1]	140	--	100	--	350	250	250	150
	AM Queue[1]	23	--	24	--	48	13	58	0
	PM Queue[1]	19	--	24	--	49	21	38	0
8 Veterans/Herndon	Storage Length[1]	--	250	--	--	--	--	250	--
	AM Queue[1]	--	70	--	--	--	--	105	--
	PM Queue[1]	--	51	--	--	--	--	136	--
9 Polk/Herndon	Storage Length[1]	140	--	200	160	225	100	250	100
	AM Queue[1]	32	--	59	15	6	21	33	41
	PM Queue[1]	32	--	88	16	8	31	131	50
10 Milburn/Herndon	Storage Length[1]	225	100	230	100	230	135	230	140
	AM Queue[1]	75	64	135	179	126	8	54	41
	PM Queue[1]	20	41	140	63	196	25	104	75
11 Blythe/Herndon	Storage Length[1]	235	235	120	120	220	140	220	140
	AM Queue[1]	0	0	34	0	14	2	4	20
	PM Queue[1]	4	0	39	18	10	2	6	29
12 Brawley/Herndon	Storage Length[1]	105	75	80	80	290	150	310	100
	AM Queue[1]	251	441	176	39	123	144	462	20
	PM Queue[1]	436	85	55	44	152	108	393	52
13 Marks/Herndon	Storage Length[1]	245	125	160	160	145	50	280	190
	AM Queue[1]	93	144	109	59	73	196	125	93
	PM Queue[1]	127	60	122	443	404	126	171	236
14 West/Herndon	Storage Length[1]	175	65	185	350	260	200	275	140
	AM Queue[1]	52	330	314	28	42	70	86	77
	PM Queue[1]	153	58	281	103	73	38	164	69
15 Palm/Herndon	Storage Length[1]	145	280	250	230	245	190	210	145
	AM Queue[1]	125	46	115	602	454	60	181	346
	PM Queue[1]	169	34	175	1,145	584	38	92	130
16 Blackstone/Herndon	Storage Length[1]	250	110	240	90	250	160	250	100
	AM Queue[1]	16	31	100	42	129	38	89	171
	PM Queue[1]	102	39	112	127	69	157	200	110
17 Grantland/Parkway	Storage Length[1]	420	80	--	--	--	--	--	--
	AM Queue[1]	36	36	--	--	--	--	--	--
	PM Queue[1]	18	18	--	--	--	--	--	--
18 Bryan/Palo Alto	Storage Length[1]	150	150	150	150	--	--	150	150
	AM Queue[1]	0	0	22	0	--	--	58	58
	PM Queue[1]	0	0	4	0	--	--	8	8
20 Hayes/Veterans	Storage Length[1]	--	--	150	150	150	--	--	150
	AM Queue[1]	--	--	0	0	113	--	--	0
	PM Queue[1]	--	--	0	118	202	--	--	0
21 Bryan/Veterans	Storage Length[1]	150	150	150	150	150	150	150	150
	AM Queue[1]	159	12	25	39	108	40	32	6
	PM Queue[1]	830	16	23	52	291	493	43	22
22 Bryan/Sierra	Storage Length[1]	150	150	150	150	150	150	150	150
	AM Queue[1]	0	4	45	0	0	0	8	24
	PM Queue[1]	0	9	157	0	0	0	13	52
24 Golden State/Veterans	Storage Length[1]	310	--	300	--	380	250	320	0
	AM Queue[1]	206	--	11	--	31	67	81	0
	PM Queue[1]	868	--	44	--	35	206	170	0
25 Grantland/Bullard	Storage Length[1]	250	--	250	--	250	100	100	100
	AM Queue[1]	1	--	3	--	1	1	0	16
	PM Queue[1]	1	--	3	--	5	1	0	4
26 SR 99 NB Ramps/Veterans	Storage Length[1]	1,000	1,000	--	--	--	--	--	380
	AM Queue[1]	56	96	--	--	--	--	--	0
	PM Queue[1]	154	280	--	--	--	--	--	0
27 SR 99 SB Ramps/Veterans	Storage Length[1]	--	--	1,000	1,000	--	400	--	--
	AM Queue[1]	--	--	38	44	--	0	--	--
	PM Queue[1]	--	--	97	103	--	0	--	--
31 Palm/Bullard	Storage Length[1]	120	55	90	70	150	150	140	0
	AM Queue[1]	101	36	95	52	171	34	316	0
	PM Queue[1]	141	180	170	43	701	39	148	0
32 Bryan (West)/Veterans[2]	Storage Length[1]	150	150	150	150	150	150	150	150
	AM Queue[1]	25	0	176	13	140	14	0	418
	PM Queue[1]	58	0	484	22	134	23	17	392
34 99 SB Ramps/Shaw[2]	Storage Length[1]	--	--	1,000	1,000	--	150	--	--
	AM Queue[1]	--	--	107	34	--	0	--	--
	PM Queue[1]	--	--	124	97	--	0	--	--
35 99 NB Ramps/Shaw[2]	Storage Length[1]	1,430	1,000	--	--	--	150	--	150
	AM Queue[1]	284	20	--	--	--	0	--	0
	PM Queue[1]	398	40	--	--	--	0	--	0
36 Golden State/Shaw	Storage Length[1]	140	140	165	165	180	180	190	190
	AM Queue[1]	743	6	38	553	18	34	550	74
	PM Queue[1]	75	922	548	9	18	44	801	298
37 Brawley/Shaw	Storage Length[1]	260	100	220	130	220	130	200	120
	AM Queue[1]	74	29	19	35	22	8	50	27
	PM Queue[1]	198	64	181	47	148	60	107	48
38 Marks/Shaw	Storage Length[1]	190	105	240	270	235	135	275	155
	AM Queue[1]	115	89	123	392	58	41	93	21
	PM Queue[1]	301	127	119	634	249	174	306	99
39 West/Shaw	Storage Length[1]	240	75	185	115	240	155	210	125
	AM Queue[1]	108	265	92	26	52	39	88	19
	PM Queue[1]	100	58	147	27	131	37	19	36
40 99 SB Ramps/Ashlan	Storage Length[1]	100	100	360	110	--	100	575	--
	AM Queue[1]	49	360	236	0	--	23	177	--
	PM Queue[1]	93	414	305	0	--	59	430	--
41 99 NB Ramps/Ashlan	Storage Length[1]	240	520	210	210	320	--	--	85
	AM Queue[1]	206	188	84	56	391	--	--	69
	PM Queue[1]	286	291	177	129	464	--	--	341

Notes:
[1] Storage length determined by field measurement and review of scaled aerial photography. AM & PM queue lengths determined in *Synchro*.
[2] Intersection is not existing, storage lengths are based upon 95th Percentile Queue.
XXX-Denotes 95th percentile queue that would exceed the lane's storage capacity.

Year 2019 Baseline Roadway Level of Service Analysis

Table 7-22 presents the results of the roadway segment level of service analysis for the 2019 Baseline condition. According to the City guidelines, if a roadway segment varies between the total number of lanes, the lowest number of lanes is to be analyzed for the entire roadway segment. Based on the roadway segment analysis, the following roadway segments are operating with unsatisfactory LOS (LOS E or LOS F):

- Herndon Avenue: Blythe Avenue to Brawley Avenue (westbound in the p.m. peak hour)
- Herndon Avenue: Brawley Avenue to Marks Avenue (eastbound in a.m. peak hour; and westbound in p.m. peak hour)
- Herndon Avenue: Marks Avenue to West Avenue (eastbound in a.m. peak hour; and westbound in p.m. peak hour)
- Herndon Avenue: West Avenue to Palm Avenue (eastbound in a.m. peak hour; and westbound in p.m. peak hour)
- Bryan Avenue: Veterans Boulevard to Sierra Avenue (both directions in p.m. peak hour)
- Veterans Boulevard: Golden State Boulevard to Bryan Avenue (westbound in p.m. peak hour)
- Veterans Boulevard: SR 99 northbound ramps to Golden State Boulevard (both directions in p.m. peak hour)
- Veterans Boulevard: SR 99 southbound ramps to SR 99 northbound ramps (both directions in both peak hours)
- Veterans Boulevard: Bryan Avenue (west) to SR 99 southbound ramps (northbound in both peak hours; and southbound in p.m. peak hour)
- Sierra Avenue: Bryan Avenue to Polk Avenue (westbound in p.m. peak hour)
- Golden State Boulevard: Herndon Avenue to Veterans Boulevard (southbound a.m. peak hour)
- Golden State Boulevard: Veterans Boulevard to Carnegie Avenue (northbound in p.m. peak hour; and southbound in both peak hours)
- Golden State Boulevard: Carnegie Avenue to Shaw Avenue (northbound in p.m. peak hour; and southbound in both peak hours)
- Golden State Boulevard: Shaw Avenue to Ashlan Avenue (northbound in both peak hours; and southbound in p.m. peak hour)
- Shaw Avenue: west of SR 99 southbound ramps (westbound in both peak hours)
- Shaw Avenue: SR 99 southbound ramps to SR 99 northbound ramps (both directions both peak hours)
- Shaw Avenue: SR 99 northbound ramps to Golden State Boulevard (westbound p.m. peak hour)
- Carnegie Avenue: Golden State Boulevard to Bullard Avenue (eastbound p.m. peak hour)
- Ashlan Avenue: SR 99 southbound ramps to SR 99 northbound ramps (eastbound a.m. peak hour; both directions p.m. peak hour)

Table 7-22 - Year 2019 Baseline Roadway Segment Level of Service Summary

		2019 Baseline							
		AM Peak Hour				PM Peak Hour			
Roadway Segment	No. of Lanes	EB/NB Volume	LOS[1]	WB/SB Volume	LOS[1]	EB/NB Volume	LOS[1]	WB/SB Volume	LOS[1]
Herndon Avenue									
Parkway to SR 99 SB Ramps	1	174	C	523	C	131	C	613	D
SR 99 SB Ramps to SR 99 NB Ramps	1	206	C	519	C	330	C	589	C
SR 99 NB Ramps to Golden State	1	712	D	509	C	737	D	549	C
Golden State to Weber	3	769	C	893	C	861	C	772	C
Weber to Bryan	3	763	C	1,138	C	822	C	752	C
Bryan to Hayes	3	542	C	840	C	552	C	464	C
Hayes to Veterans	3	578	C	789	C	540	C	523	C
Veterans to Polk	3	1,519	C	1,596	C	1,374	C	1,541	C
Polk to Milburn	3	1,880	C	1,688	C	1,675	C	1,934	C
Milburn to Blythe	3	2,057	C	1,413	C	1,582	C	2,118	D
Blythe to Brawley	3	2,090	C	1,792	C	2,455	D	3,054	F
Brawley to Marks	3	2,704	E	1,729	C	2,469	D	2,767	F
Marks to West	3	2,620	E	1,896	C	1,900	C	2,855	F
West to Palm	3	2,927	F	2,112	D	2,050	C	3,047	F
Palm to Blackstone	3	2,346	D	1,705	C	1,903	C	2,233	D
e/o Blackstone	3	1,954	C	2,082	C	1,747	C	2,372	D
Parkway Drive									
Herndon and Grantland	1	104	C	537	D	68	C	538	D
Bryan Avenue									
Herndon to Palo Alto	1	516	D	539	D	297	C	379	C
Palo Alto to Veterans	1	160	C	523	D	297	C	265	C
Veterans to Sierra	1	243	C	361	C	786	E	787	E
Sierra and Carnegie	1	264	C	387	C	536	D	487	D
Carnegie to Dante	2	705	C	843	C	999	C	1,177	D
Palo Alto Avenue									
Bryan to Hayes	1	367	C	356	C	183	C	71	C
Hayes Avenue									
Herndon to Palo Alto	1	400	C	472	C	404	C	406	C
Palo Alto to Veterans	1	450	C	438	C	459	C	444	C
Veterans Avenue									
Hayes to Herndon	3	941	C	824	C	848	C	1,022	C
Bryan to Hayes	3	1,390	C	1,340	C	1,522	C	1,601	C
Golden State to Bryan	3	1,694	C	1,888	D	2,325	D	3,216	F
SR 99 NB Ramps to GS	3	2,351	D	2,138	D	2,649	F	4,106	F
SR 99 SB Ramps to SR 99 NB Ramps	3	2,129	D	2,021	D	2,339	D	3,567	F
Bryan(2) to SR 99 SB Ramps	3	2,555	E	1,398	C	2,588	F	2,895	F
Sierra Avenue									
Bryan to Polk	1	305	C	506	D	363	C	1,309	F
Polk Avenue									
Herndon to Sierra	1	416	C	317	C	378	C	466	C
Golden State Boulevard									
Herndon to Veterans	1	180	C	870	F	275	C	673	D
Veterans to Carnegie	1	519	D	1,179	F	1,228	F	882	F
Carnegie to Shaw	1	362	C	914	F	1,131	F	912	F
Shaw to Ashlan	1	823	F	532	D	1,518	F	864	F
Shaw Avenue									
w/o SR 99 SB Ramps	1	672	D	864	F	588	D	1,166	F
SR 99 SB Ramps to SR 99 NB Ramps	1-2	927	F	1,497	F	916	F	1,656	F
SR 99 NB Ramps to Golden State	2	662	C	1,394	D	794	C	1,783	F
Golden State to Brawley	3	1,710	C	1,340	C	1,955	D	2,368	D
Brawley to Marks	3	1,952	D	1,609	C	2,284	D	2,376	D
Marks to West	3	2,184	D	1,389	C	1,998	D	1,949	D
e/o West	3	2,216	D	1,330	C	1,655	C	1,594	C
Grantland Avenue									
Parkway to Bullard	1	275	C	76	C	163	C	155	C
Bullard to Barstow	1	57	C	195	C	46	C	115	C
Palm Avenue									
Herndon to Bullard	2	1,300	D	1,502	D	1,314	D	1,382	D
Dante Avenue									
Polk to Bullard	1	259	C	225	C	338	C	339	C
Carnegie Avenue									
Golden State to Bullard	1	714	D	687	D	808	E	586	D
Ashlan Avenue									
SR 99 SB Ramps to SR 99 NB Ramps	2	1,914	F	1,046	C	1,854	F	1,685	E

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* , for State Two-Way Arterials (Class II) & Non-State Roadways.

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact

Year 2019 Freeway Segment Level of Service Analysis

Year 2019 freeway segment traffic volume forecasts were post-processed by DKS using the existing AADT obtained from the Caltrans Traffic and Vehicle Data Systems Unit webpage. The difference between the future model volume and the existing model volume was added to the existing count to calculate the future analysis volume.

Mainline Levels of Service

Year 2019 freeway segment level of service, in terms of density, in the vicinity of the project site were evaluated by applying the HCM methodology for basic freeway segments. The HCS program was used to perform these calculations. Table 7-23 provides the 2017 freeway segment level of service summary.

Table 7-23 – Year 2019 Freeway Segment Level of Service Summary

Freeway	From	To	Density	LOS
Northbound AM				
SR 99	Herndon Avenue	Avenue 7	17.3	B
	Veterans Boulevard	Herndon Avenue	18.2	C
	Shaw Avenue	Veterans Boulevard	20.7	C
	Ashlan Avenue	Shaw Avenue	21.1	C
	Dakota Avenue	Ashlan Avenue	27.2	D
Southbound AM				
SR 99	Avenue 7	Herndon Avenue	23.1	C
	Herndon Avenue	Veterans Boulevard	20.5	C
	Veterans Boulevard	Shaw Avenue	27.4	D
	Shaw Avenue	Ashlan Avenue	25.2	C
	Ashlan Avenue	Dakota Avenue	28.1	D
Northbound PM				
SR 99	Herndon Avenue	Avenue 7	28.2	D
	Veterans Boulevard	Herndon Avenue	27.7	D
	Shaw Avenue	Veterans Boulevard	33.7	D
	Ashlan Avenue	Shaw Avenue	31.6	D
	Dakota Avenue	Ashlan Avenue	36.7	E
Southbound PM				
SR 99	Avenue 7	Herndon Avenue	23.8	C
	Herndon Avenue	Veterans Boulevard	24.4	C
	Veterans Boulevard	Shaw Avenue	31.4	D
	Shaw Avenue	Ashlan Avenue	29.1	D
	Ashlan Avenue	Dakota Avenue	40.8	E

As shown in the table, the following SR 99 freeway segments are forecast to operate at unsatisfactory LOS (LOS D or worse):

- Herndon Avenue to Avenue 7 (both directions LOS D in the a.m. peak hour; and LOS E in the p.m. peak hour)
- Veterans Boulevard to Herndon Avenue northbound (LOS D in the p.m. peak hour)

- Shaw Avenue to Veterans Boulevard (southbound LOS D in the a.m. peak hour; and northbound and southbound LOS D in the p.m. peak hour)
- Ashlan Avenue to Shaw Avenue both directions (LOS D in the p.m. peak hour)
- Dakota Avenue to Ashlan Avenue (both directions LOS D in the a.m. peak hour; and both directions LOS E in the p.m. peak hour)

Ramp Weaving Analysis

As previously described, the methodology shown in Figure 504.7A from the 2006 Caltrans Highway Design Manual (2006 HDM) was used to determine the freeway weaving LOS. The freeway weaving sections on SR 99 that were analyzed include the segment from Shaw Avenue to (future) Veterans Boulevard and (future) Veterans Boulevard to Herndon Avenue. Year 2019 baseline peak hour on- and off-ramp traffic volumes and mainline volumes were analyzed using Figure 504.7A from the Caltrans HDM. Results from this analysis are shown in Table 7-24. Detailed calculation sheets shown on the Leisch nomographs are provided in Appendix F.

Table 7-24 – Year 2019 Baseline Freeway Weaving Level of Service Summary

			LOS	
Weaving Section	Distance	# of Lanes	AM	PM
SR 99 Northbound				
- Shaw Avenue to Veterans Boulevard	0.7 miles	3	C	E
- Veterans Boulevard to Herndon Avenue	0.5 miles	3	B	E
SR 99 Southbound				
- Herndon Avenue to Veterans Boulevard	0.5 miles	3	B	C
- Veterans Boulevard to Shaw Avenue	0.7 miles	3	D	E

As shown in the table, the following weaving sections are forecast to operate at an unsatisfactory LOS (LOS D or worse) in the 2019 baseline scenario:

- SR 99 northbound: Shaw Avenue to Veterans Avenue (LOS E in the p.m. peak hour)
- SR 99 northbound: Veterans Avenue to Herndon Avenue (LOS E in the p.m. peak hour)
- SR 99 southbound: Veterans Avenue to Shaw Avenue (LOS D in the a.m. peak hour and LOS E in the p.m. peak hour)

At-Grade Railroad Crossing Analysis

Using the HCM "Back of Queue" queuing methodology to analyze the vehicular queuing, Table 7-25 presents the at-grade railroad crossing analysis summary for the 2019 baseline condition. The HCM calculation sheets are provided in Appendix H. By 2017, according to the City, a grade separated underpass at Herndon Avenue would be constructed and would be in full operation by that date.

According to the table and similar to 2017, the Carnegie Avenue crossing would have queues extending from the crossing, west to Golden State Boulevard, and east to Bullard Avenue in one or both peak hours.

And also, the Shaw Avenue crossing would have queues extending from the crossing, west to SR 99 northbound ramps, and east to Blythe Avenue in both peak hours.

Table 7-25 – Year 2019 Baseline Condition At-Grade Railroad Crossing Analysis Summary

Crossing Location	Peak Hour [1]	Rail Crossing Time (seconds) [2]	Vehicular Queue (feet) [3]		Impact to Adjacent Major Intersection [4]	
			e/o tracks	w/o tracks	e/o tracks	w/o tracks
Herndon Avenue	*Grade Separated Underpass Improvement*					
Carnegie Avenue	AM	243	1,142	1,484	Yes	Yes
	PM	110	448	784	No	Yes
Shaw Avenue	AM	300	2,149	3,239	Yes	Yes
	PM	235	5,127	3,286	Yes	Yes

[1] - Based on observed train crossings in 2007 within the AM and PM peak commute hours.

[2] - Based on time that train crossing gate arms go down, to time gate arms go up.

[3] - Vehicle queue determined using *Highway Capacity Manual* (HCM) "Back of Queue Equation".

[4] – Impact based on whether vehicular queue would extend to an adjacent major intersection. For Herndon and Shaw Avenues the major intersection west of tracks will be the northbound ramp intersections with SR 99, rather than the closely spaced intersections with Golden State Blvd/Herndon Ave (125 ft) and Golden State Blvd/Shaw Ave (50 ft).

Buildout Year 2025 Baseline Condition

The buildout 2025 baseline condition represents buildout of the City's General Plan in terms of land uses and buildout of the roadways in the City's Circulation Element. The baseline condition assumes the currently designated land uses on the site. As discussed in detail in Section 8.0 – Project Traffic Trip Generation, Distribution, and Assignment, the Master Plan site is currently designated with Light Industrial uses and Medium Density Residential uses as shown in the General Plan.

Based on ITE trip rates, the traffic generated by the Master Plan area, based on the currently designated General Plan land uses (Light Industrial and Medium Density Residential), is approximately 11,938 ADT, 1,584 a.m. peak hour trips (1,211 inbound and 373 outbound), and 1,565 p.m. peak hour trips (428 inbound and 1,137 outbound).

Street Network and Intersection Geometrics

Buildout year 2025 scenario includes all future roadway and intersection improvements on the City's General Plan Circulation Element as listed in the City's traffic impact fees for the Traffic Signal Mitigation Impact Fee (TSMI) and the Fresno Major Street Impact Fee (FMSI) which is a combination of the New Growth Area Major Street Impact Fee and the Citywide Regional Street Impact Fee. In addition, other 2025 improvements were determined based on known freeway mainline improvements on the State facilities noted in the Fresno COG travel model's 2025 network.

The following study intersections are listed in the City's TSMI Fee program:

- SR 99 northbound ramps/Herndon Avenue
- Golden State Boulevard/Herndon Avenue
- Bryan Avenue/Herndon Avenue
- Veterans Boulevard/Herndon Avenue
- Polk Avenue/Herndon Avenue
- Blythe Avenue/Herndon Avenue
- Brawley Avenue/Herndon Avenue
- Grantland Avenue/Parkway Drive
- Veterans Boulevard/Hayes Avenue
- Veterans Boulevard/Bryan Avenue
- Polk Avenue/Sierra Avenue
- Grantland Avenue/Bullard Avenue
- Carnegie Avenue/Bullard Avenue
- Dante Avenue/Bullard Avenue
- Veterans Boulevard/Bryan Avenue (west)
- Grantland Avenue/Barstow Avenue
- Golden State Boulevard/Shaw Avenue
- West Avenue/Shaw Avenue

In addition, as listed in the City's FMSI fee list, a grade-separation of Shaw Avenue with the UPRR tracks would be completed by 2025.

Buildout Year 2025 Baseline Traffic Volumes

Figure 7-7 illustrates the buildout year 2025 baseline weekday a.m. and p.m. peak hour traffic volumes. The buildout year 2025 traffic volumes for peak hour traffic were provided in the Fresno COG 2025 travel model, then post-processed per the prescribed post-processing methodology. The 2025 travel model takes the normal growth-year model and, for all the known approved projects at the time of model development, primarily other active GPAs, adds socioeconomic information on top of the normal growth projections.

Buildout Year 2025 Baseline Intersection Levels of Service

Buildout year 2025 baseline traffic volumes were input into the Synchro software to evaluate levels of service. Table 7-26 presents the resulting LOS for the study intersections. According to the table, the following study area intersections are forecast to operate with an unsatisfactory LOS (i.e. LOS E or F) in the 2025 baseline condition:

- Milburn Avenue/Herndon Avenue (LOS E in the p.m. peak hour)
- Palm Avenue/Herndon Avenue (LOS F in the p.m. peak hour)
- Hayes Avenue/Palo Alto Avenue (LOS E in the p.m. peak hour)
- Golden State Boulevard/Veterans Boulevard (LOS E in the p.m. peak hour)
- Golden State Boulevard/Carnegie Avenue (LOS E in the p.m. peak hour)
- Palm Avenue/Bullard Avenue (LOS F in the p.m. peak hour)
- SR 99 northbound ramps/Shaw Avenue (LOS F in the p.m. peak hour)
- Golden State Boulevard/Shaw Avenue (LOS E in the a.m. peak hour, and LOS F in the p.m. peak hour)
- Marks Avenue/Shaw Avenue (LOS F in the p.m. peak hour)
- SR 99 northbound ramps/Ashlan Avenue (LOS D in the a.m. and p.m. peak hours)

Signal Warrant Analysis

A peak hour traffic signal warrant was conducted for the unsignalized intersection of Hayes Avenue/Palo Alto Avenue that was forecast to operate with an unsatisfactory LOS in the year 2025 baseline condition. The peak hour signal warrant analysis was performed based on the MUTCD. Appendix D contains the signal warrant analysis worksheets. Based on the peak hour signal warrant analysis, this unsignalized intersection would meet the minimum volumes for the MUTCD peak hour warrant criteria.

Queuing Analysis

Table 7-27 presents the results of the Buildout 2025 Baseline weekday a.m. and p.m. peak hour queuing analysis based on the Synchro LOS analysis and the calculated 95th percentile queue lengths for each left- and/or right turn storage lane for each study area intersection. Based on the queuing analysis, the following intersections are forecast to have 95th percentile queues that exceed the storage lengths of one or more movements during the weekday peak hours:

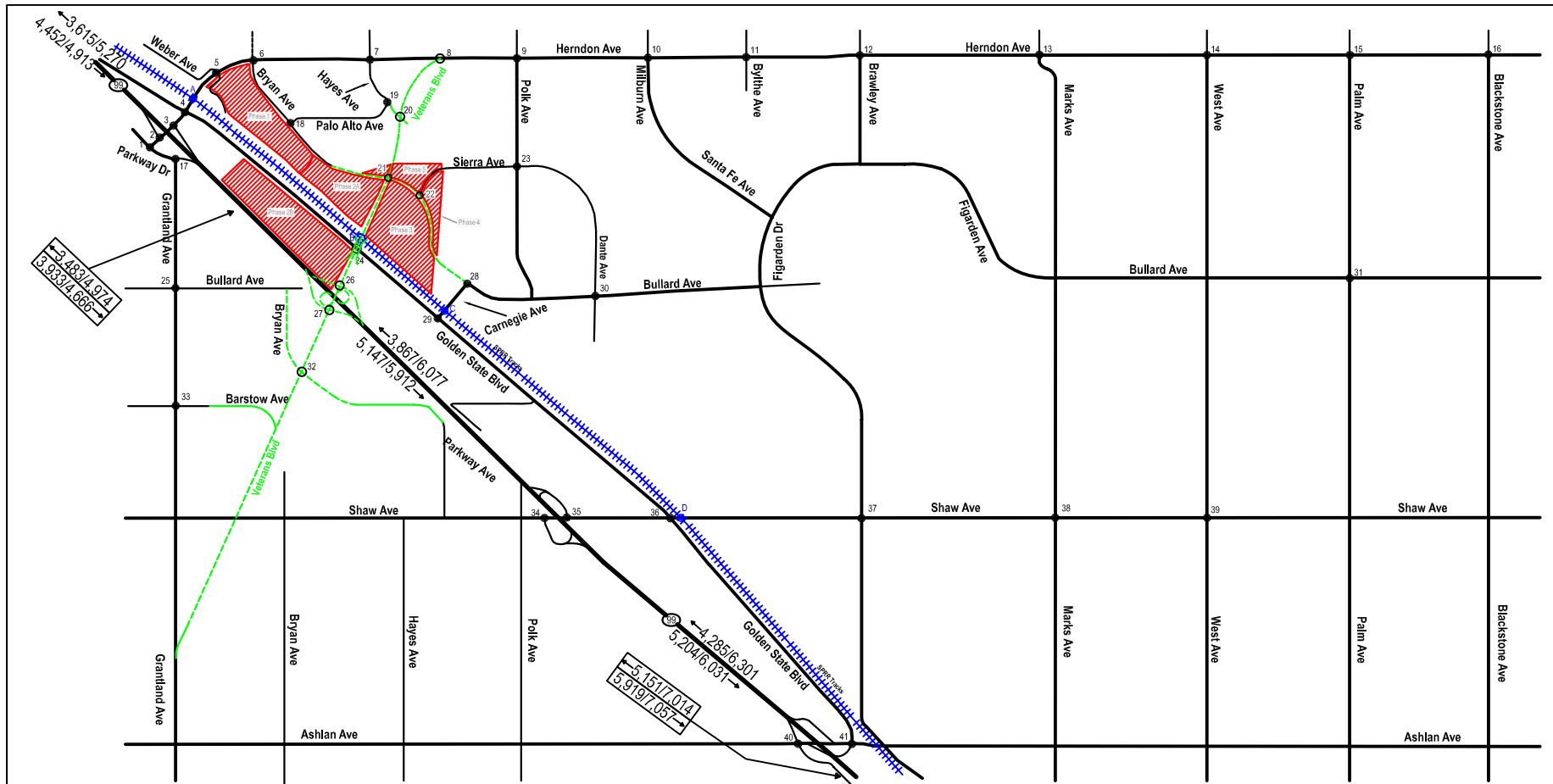
- Veterans Boulevard/Herndon Avenue (WBL in p.m. peak hour)

- Polk Avenue/Herndon Avenue (SBL, WBL, and WBR in p.m. peak hour)
- Milburn Avenue/Herndon Avenue (NBL, EBL, and WBR in p.m. peak hour; and SBR in both peak hours)
- Brawley Avenue/Herndon Avenue (NBL in p.m. peak hour; and NBR in both peak hours)
- Marks Avenue/Herndon Avenue (NBR in a.m. peak hour; and SBR, EBR, and WBR in p.m. peak hour)
- West Avenue/Herndon Avenue (NBR in a.m. peak hour)
- Palm Avenue/Herndon Avenue (SBR and EBL in both peak hours; and WBR in a.m. peak hour)
- Blackstone Avenue/Herndon Avenue (SBR in p.m. peak hour; and WBR in both peak hours)
- Golden State Boulevard/Veterans Boulevard (NBL in p.m. peak hour)
- Bullard Avenue/Carnegie Avenue (NBL in both peak hours)
- Golden State Boulevard/Carnegie Avenue (SBR in p.m. peak hour; and WBL in both peak hours)
- Palm Avenue/Bullard Avenue (NBL, SBR, and WBL in p.m. peak hour; and EBL in both peak hours)
- Bryan Avenue (west)/Veterans Boulevard (SBL in p.m. peak hour; and WBR in both peak hours)
- SR 99 northbound ramps/Shaw Avenue (NBL in p.m. peak hour)
- Golden State Boulevard/Shaw Avenue (NBR, SBL, and WBL in both peak hours; and WBR in p.m. peak hour)
- Brawley Avenue/Shaw Avenue (NBL and SBL in p.m. peak hour)
- Marks Avenue/Shaw Avenue (NBL, EBL, and WBL in p.m. peak hour; and SBR in both peak hours)
- West Avenue/Shaw Avenue (NBR in a.m. peak hour)
- SR 99 southbound ramps/Ashlan Avenue (NBR in both peak hours; and SBL in p.m. peak hour)
- SR 99 northbound ramps/Ashlan Avenue (NBL and EBL in both peak hours; and NBR and WBR in p.m. peak hour)

Buildout Year 2025 Baseline Roadway Level of Service Analysis

Table 7-28 presents the results of the roadway segment level of service analysis for the Buildout 2025 Baseline condition. According to the City guidelines, if a roadway segment varies between the total number of lanes, the lowest number of lanes is to be analyzed for the entire roadway segment. Based on the roadway segment analysis, the following roadway segments are forecast to operate with unsatisfactory LOS (LOS E or LOS F):

- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (westbound p.m. peak hour)
- Herndon Avenue: Polk Avenue to Milburn Avenue (westbound p.m. peak hour)
- Herndon Avenue: Blythe Avenue to Brawley Avenue (eastbound a.m. peak hour, and westbound p.m. peak hour)
- Herndon Avenue: Brawley Avenue to Marks Avenue (eastbound a.m. peak hour, and westbound p.m. peak hour)



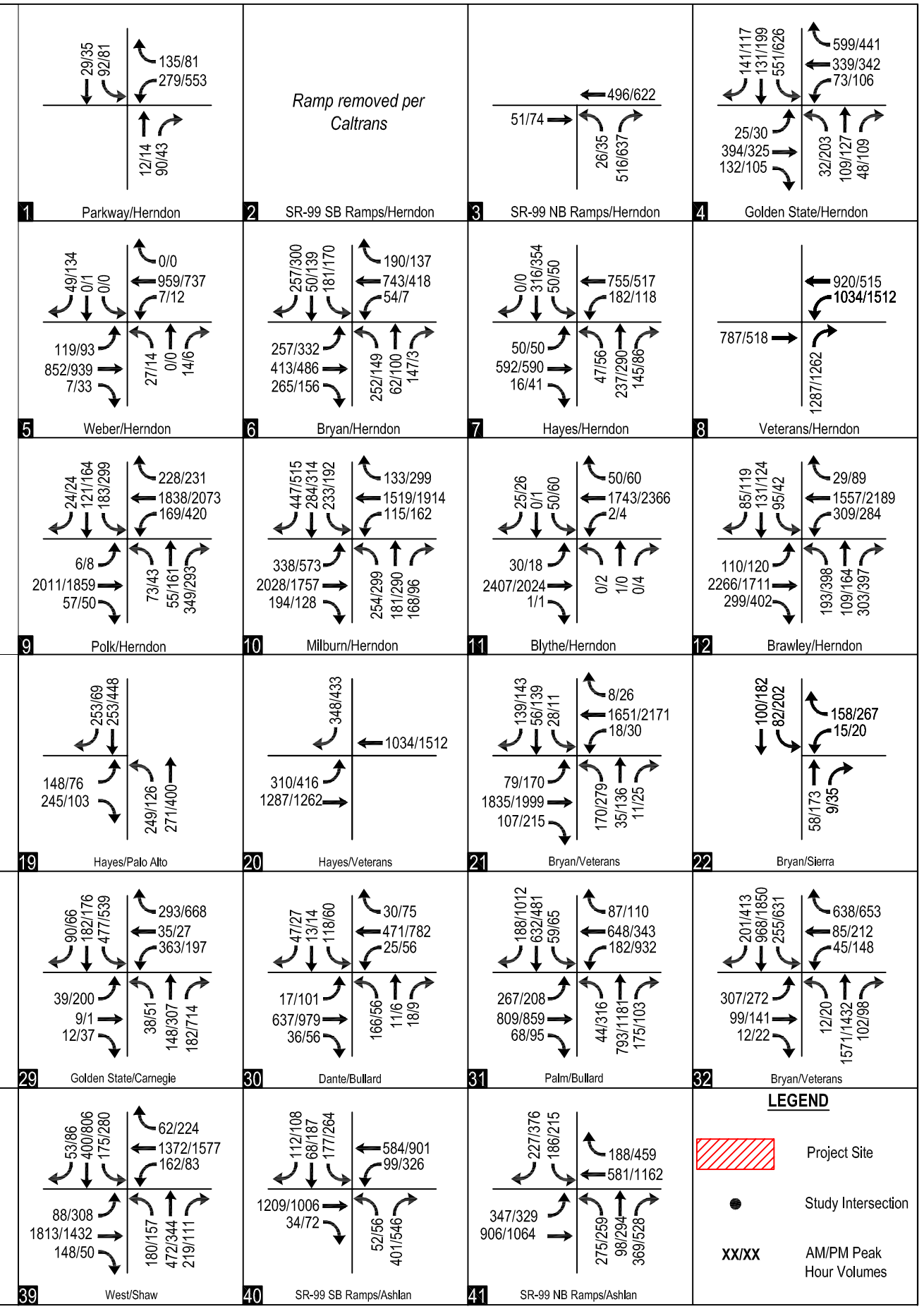


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Figure 7-7
Buildout Year 2025 AM and PM Peak Hour Traffic Volumes

Table 7-26 – Year 2025 Baseline Intersection Peak Hour Level of Service Summary

		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	signal	3.6	A	10.4	B
2 99 SB Ramps/Herndon	unsignalized	--	--	--	--
3 99 NB Ramps/Herndon	signal	10.2	B	9.2	A
4 Golden State/Herndon	signal	20.8	C	35.2	D
5 Weber/Herndon	unsignalized	11.6	B	10.5	B
6 Bryan/Herndon	signal	27.0	C	44.2	D
7 Hayes/Herndon	signal	20.8	C	20.7	C
8 Veterans/Herndon	signal	8.4	A	6.2	A
9 Polk/Herndon	signal	31.3	C	50.2	D
10 Milburn/Herndon	signal	39.4	D	60.5	E
11 Blythe/Herndon	signal	14.2	B	14.9	B
12 Brawley/Herndon	signal	37.9	D	41.0	D
13 Marks/Herndon	signal	43.3	D	48.5	D
14 West/Herndon	signal	35.4	D	31.9	C
15 Palm/Herndon	signal	48.6	D	>80	F
16 Blackstone/Herndon	signal	30.2	C	42.3	D
17 Grantland/Parkway	signal	6.2	A	5.4	A
18 Bryan/Palo Alto	unsignalized	11.1	B	9.4	A
19 Hayes/Palo Alto	unsignalized	34.5	D	46.0	E
20 Veterans/Hayes	signal	10.8	B	13.3	B
21 Veterans/Bryan	signal	15.6	B	27.2	C
22 Bryan/Sierra	unsignalized	15.1	B	11.5	B
23 Polk/Sierra	signal	6.7	A	6.8	A
24 Golden State/Veterans	signal	21.0	C	74.7	E
25 Grantland/Bullard	signal	8.8	A	9.7	A
26 99 NB Ramps/Veterans	signal	10.3	B	27.6	C
27 99 SB Ramps/Veterans	signal	4.4	A	9.4	A
28 Carnegie/Bullard	signal	16.7	B	12.4	B
29 Golden State/Carnegie	signal	30.4	C	64.6	E
30 Dante/Bullard	signal	6.6	A	10.1	B
31 Palm/Bullard	signal	32.2	C	>80	F
32 Veterans/Bryan	signal	24.6	C	35.4	D
33 Grantland/Barstow	signal	6.4	A	6.3	A
34 99 SB Ramps/Shaw	signal	11.8	B	18.7	B
35 99 NB Ramps/Shaw	signal	32.9	C	>80	F
36 Golden State/Shaw	signal	61.6	E	>80	F
37 Brawley/Shaw	signal	38.3	D	45.0	D
38 Marks/Shaw	signal	45.1	D	>80	F
39 West/Shaw	signal	27.2	C	33.7	C
40 99 SB Ramps/Ashlan	signal	25.4	C	32.4	C
41 99 NB Ramps/Ashlan	signal	38.1	D	36.6	D

Table 7-27 - Buildout Year 2025 Baseline Intersection Queuing Analysis Summary

Signalized Intersection		Storage & 95th Percentile Queue Lengths (ft)							
		NBL	NBR	SBL	SBR	EBL	EBR	WBL	WBR
1 Parkway/Herndon	Storage Length[1]	--	150	150	--	--	--	250	250
	AM Queue[1]	--	17	34	--	--	--	9	1
	PM Queue[1]	--	14	34	--	--	--	69	15
3 SR-99 NB Ramps/Herndon	Storage Length[1]	250	250	--	--	--	--	--	--
	AM Queue[1]	16	27	--	--	--	--	--	--
	PM Queue[1]	24	32	--	--	--	--	--	--
4 Golden State/Herndon	Storage Length[1]	310	--	330	200	330	200	330	200
	AM Queue[1]	19	--	214	38	15	37	63	69
	PM Queue[1]	78	--	235	36	19	36	94	117
6 Bryan/Herndon	Storage Length[1]	250	250	250	150	250	150	250	150
	AM Queue[1]	82	35	72	80	132	53	30	48
	PM Queue[1]	52	5	68	59	178	48	8	42
7 Hayes/Herndon	Storage Length[1]	140	--	100	--	250	100	250	125
	AM Queue[1]	23	--	0	--	0	13	78	0
	PM Queue[1]	27	--	0	--	0	20	52	0
8 Veterans/Herndon	Storage Length[1]	--	250	--	--	--	--	250	--
	AM Queue[1]	--	173	--	--	--	--	158	--
	PM Queue[1]	--	141	--	--	--	--	275	--
9 Polk/Herndon	Storage Length[1]	140	--	200	160	225	100	250	100
	AM Queue[1]	41	--	115	19	8	20	105	76
	PM Queue[1]	37	--	220	20	11	31	283	120
10 Milburn/Herndon	Storage Length[1]	225	100	230	100	230	135	230	140
	AM Queue[1]	155	99	110	371	172	73	86	58
	PM Queue[1]	232	47	122	538	384	65	106	184
11 Blythe/Herndon	Storage Length[1]	235	235	120	120	220	140	220	140
	AM Queue[1]	0	0	38	0	25	3	4	22
	PM Queue[1]	4	0	43	24	18	3	7	30
12 Brawley/Herndon	Storage Length[1]	250	150	250	150	290	150	310	100
	AM Queue[1]	129	226	69	40	61	97	186	17
	PM Queue[1]	230	295	30	67	91	134	155	44
13 Marks/Herndon	Storage Length[1]	245	125	250	160	250	50	280	190
	AM Queue[1]	162	154	105	100	84	55	155	106
	PM Queue[1]	170	101	139	515	217	138	140	236
14 West/Herndon	Storage Length[1]	250	65	250	350	260	200	275	140
	AM Queue[1]	52	122	127	29	38	40	43	51
	PM Queue[1]	64	52	94	86	72	29	111	63
15 Palm/Herndon	Storage Length[1]	250	280	250	230	245	190	250	145
	AM Queue[1]	134	84	106	474	530	68	121	354
	PM Queue[1]	226	34	210	788	553	46	71	129
16 Blackstone/Herndon	Storage Length[1]	250	110	240	90	250	160	250	100
	AM Queue[1]	0	53	144	31	159	36	84	148
	PM Queue[1]	102	57	172	288	78	156	236	123
17 Grantland/Parkway	Storage Length[1]	420	80	--	--	--	150	--	--
	AM Queue[1]	3	38	--	--	--	12	--	--
	PM Queue[1]	9	17	--	--	--	12	--	--
18 Bryan/Palo Alto	Storage Length[1]	--	--	180	--	--	--	--	150
	AM Queue[1]	--	--	21	--	--	--	--	48
	PM Queue[1]	--	--	4	--	--	--	--	7
20 Hayes/Veterans	Storage Length[1]	--	--	250	150	250	--	--	150
	AM Queue[1]	--	--	0	14	172	--	--	0
	PM Queue[1]	--	--	0	0	225	--	--	231
21 Bryan/Veterans	Storage Length[1]	250	150	250	150	250	150	250	150
	AM Queue[1]	37	27	13	7	18	56	93	13
	PM Queue[1]	121	55	24	16	12	93	173	21
22 Bryan/Sierra	Storage Length[1]	150	150	150	150	150	150	150	150
	AM Queue[1]	0	6	37	0	0	0	10	25
	PM Queue[1]	0	17	96	0	0	0	16	42
23 Polk/Sierra	Storage Length[1]	150	150	150	60	150	0	135	135
	AM Queue[1]	27	7	28	0	15	--	7	11
	PM Queue[1]	48	7	34	11	16	--	3	17
24 Golden State/Veterans	Storage Length[1]	310	--	300	--	380	250	320	0
	AM Queue[1]	216	--	6	--	44	50	128	--
	PM Queue[1]	695	--	23	--	51	168	65	--
25 Grantland/Bullard	Storage Length[1]	250	--	250	--	250	100	100	100
	AM Queue[1]	4	--	14	--	16	3	1	13
	PM Queue[1]	3	--	11	--	7	2	2	8
26 SR 99 NB Ramps/Veterans	Storage Length[1]	1,000	1,000	--	--	--	--	--	380
	AM Queue[1]	54	121	--	--	--	--	--	0
	PM Queue[1]	192	424	--	--	--	--	--	0
27 SR 99 SB Ramps/Veterans	Storage Length[1]	--	--	1,000	1,000	--	400	--	--
	AM Queue[1]	--	--	20	49	--	0	--	--
	PM Queue[1]	--	--	31	117	--	0	--	--
28 Bullard/Carnegie	Storage Length[1]	225	--	--	150	250	615	--	--
	AM Queue[1]	379	--	--	42	64	38	--	--
	PM Queue[1]	623	--	--	40	129	32	--	--
29 Golden State/Carnegie	Storage Length[1]	150	150	150	--	--	--	600	150
	AM Queue[1]	6	60	507	--	--	--	175	61
	PM Queue[1]	73	383	602	--	--	--	131	373
30 Dante/Bullard	Storage Length[1]	130	85	145	145	250	150	220	150
	AM Queue[1]	58	8	43	13	9	10	13	9
	PM Queue[1]	29	7	30	11	58	13	36	15
31 Palm/Bullard	Storage Length[1]	190	105	240	270	235	--	275	--
	AM Queue[1]	66	44	92	46	256	--	190	--
	PM Queue[1]	585	57	165	1,081	246	--	1,446	--
32 Bryan (West)/Veterans[2]	Storage Length[1]	250	150	250	150	250	150	250	150
	AM Queue[1]	25	32	137	21	128	14	62	264
	PM Queue[1]	37	54	331	76	119	21	149	217
33 Grantland/Barstow	Storage Length[1]	--	100	--	100	--	--	--	--
	AM Queue[1]	--	3	--	4	--	--	--	--
	PM Queue[1]	--	0	--	6	--	--	--	--
34 99 SB Ramps/Shaw[2]	Storage Length[1]	--	--	1,000	1,000	--	150	--	--
	AM Queue[1]	--	--	243	102	--	0	--	--
	PM Queue[1]	--	--	403	342	--	0	--	--
35 99 NB Ramps/Shaw[2]	Storage Length[1]	1,430	1,000	--	--	--	150	0	150
	AM Queue[1]	660	58	--	--	--	0	--	0
	PM Queue[1]	1,145	217	--	--	--	0	--	0
36 Golden State/Shaw	Storage Length[1]	140	140	165	165	180	180	190	190
	AM Queue[1]	20	751	178	5	8	42	239	39
	PM Queue[1]	45	1,114	195	12	1	52	320	202
37 Brawley/Shaw	Storage Length[1]	260	100	220	130	220	130	200	120
	AM Queue[1]	97	28	11	47	46	51	64	17
	PM Queue[1]	303	83	269	125	115	10	61	13
38 Marks/Shaw	Storage Length[1]	190	105	240	270	235	135	275	155
	AM Queue[1]	137	117	112	430	114	43	117	23
	PM Queue[1]	341	85	114	827	295	79	313	119
39 West/Shaw	Storage Length[1]	240	75	185	115	240	155	210	125
	AM Queue[1]	104	102	100	27	45	42	91	23
	PM Queue[1]	111	44	127	48	173	23	50	93
40 99 SB Ramps/Ashlan	Storage Length[1]	100	100	360	110	--	100	575	--
	AM Queue[1]	70	313	232	0	--	26	150	--
	PM Queue[1]	79	395	392	0	--	52	412	--
41 99 NB Ramps/Ashlan	Storage Length[1]	240	520	210	210	320	--	--	85
	AM Queue[1]	247	227	90	63	364	--	--	98
	PM Queue[1]	388	627	159	188	449	--	--	359

Notes:
[1] Storage length determined by field measurement and review of scaled aerial photography. AM & PM queue lengths determined in *Synchro* .
[2] Intersection is not existing, storage lengths were based upon 95th Percentile Queue.
XXX-Denotes 95th percentile queue that would exceed the lane's storage capacity.

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Table 7-28 - Buildout Year 2025 Baseline Roadway Segment Level of Service Summary

		2025 Baseline							
		AM Peak Hour				PM Peak Hour			
Roadway Segment	No. of Lanes	EB/NB Volume	LOS[1]	WB/SB Volume	LOS[1]	EB/NB Volume	LOS[1]	WB/SB Volume	LOS[1]
Herndon Avenue									
Parkway to SR 99 SB Ramps	1	182	C	518	C	124	C	700	D
SR 99 SB Ramps to SR 99 NB Ramps	1	295	C	508	C	348	C	657	D
SR 99 NB Ramps to Golden State	1	807	D	498	C	775	D	622	D
Golden State to Weber	3	993	C	1,035	C	1,065	C	889	C
Weber to Bryan	3	935	C	1,252	C	974	C	867	C
Bryan to Hayes	3	741	C	987	C	659	C	573	C
Hayes to Veterans	3	787	C	937	C	676	C	635	C
Veterans to Polk	3	2,074	C	1,954	C	1,924	C	2,143	D
Polk to Milburn	3	2,560	D	2,235	D	2,458	D	2,728	F
Milburn to Blythe	3	2,438	D	1,768	C	2,045	C	2,394	D
Blythe to Brawley	3	2,675	E	1,835	C	2,233	D	2,706	E
Brawley to Marks	3	2,833	F	1,964	C	2,333	D	2,850	F
Marks to West	3	2,962	F	2,029	C	2,213	D	2,769	F
West to Palm	3	3,087	F	2,186	D	2,349	D	3,043	F
Palm to Blackstone	3	2,366	D	1,672	C	2,304	D	2,291	D
e/o Blackstone	3	2,153	D	2,068	C	2,235	D	2,432	D
Parkway Drive									
Herndon and Grantland	2	102	C	528	C	57	C	625	C
Bryan Avenue									
Herndon to Palo Alto	2	483	C	505	C	307	C	432	C
Palo Alto to Veterans	2	127	C	489	C	332	C	335	C
Veterans to Sierra	2	216	C	182	C	440	C	384	C
Sierra and Carnegie	2	226	C	229	C	241	C	176	C
Carnegie to Dante	2	703	C	649	C	881	C	1,225	D
Palo Alto Avenue									
Bryan to Hayes	1	393	C	356	C	179	C	71	C
Hayes Avenue									
Herndon to Palo Alto	1	429	C	506	D	476	C	517	D
Palo Alto to Veterans	1	520	D	498	D	526	D	551	D
Veterans Avenue									
Hayes to Herndon	3	1,287	C	1,034	C	1,262	C	1,512	C
Bryan to Hayes	3	1,874	D	1,677	C	2,035	D	2,227	D
Golden State to Bryan	3	2,022	D	2,224	D	2,389	D	3,314	F
SR 99 NB Ramps to GS	3	2,428	D	2,429	D	2,739	F	4,134	F
SR 99 SB Ramps to SR 99 NB Ramps	3	2,174	D	2,296	D	2,041	D	3,825	F
Bryan(2) to SR 99 SB Ramps	3	2,516	E	1,423	C	2,356	D	2,894	F
Sierra Avenue									
Bryan to Polk	1	285	C	325	C	267	C	657	D
Polk Avenue									
Herndon to Sierra	1	477	C	406	C	497	D	445	C
Golden State Boulevard									
Herndon to Veterans	1	189	C	862	C	439	C	745	C
Veterans to Carnegie	1	480	C	749	C	1,175	D	781	C
Carnegie to Shaw	1	443	C	629	C	1,185	D	881	C
Shaw to Ashlan	1	982	C	593	C	1,740	F	773	C
Shaw Avenue									
w/o SR 99 SB Ramps	3	2,439	D	1,654	C	2,095	D	2,625	F
SR 99 SB Ramps to SR 99 NB Ramps	3	2,302	D	2,441	D	2,098	D	3,372	F
SR 99 NB Ramps to Golden State	3	1,844	D	2,028	D	1,634	C	3,115	F
Golden State to Brawley	3	2,605	F	1,653	C	2,697	F	3,248	F
Brawley to Marks	3	2,266	D	1,860	D	2,474	E	2,713	F
Marks to West	3	2,378	D	1,605	C	2,079	D	2,141	D
e/o West	3	2,207	D	1,596	C	1,823	D	1,884	D
Grantland Avenue									
Parkway to Bullard	2	294	C	82	C	160	C	142	C
Bullard to Barstow	2	55	C	201	C	30	C	85	C
Palm Avenue									
Herndon to Bullard	2	1,384	D	1,687	E	1,499	D	1,590	D
Dante Avenue									
Polk to Bullard	1	257	C	255	C	272	C	291	C
Carnegie Avenue									
Golden State to Bullard	2	668	C	695	C	1,266	D	892	C
Ashlan Avenue									
SR 99 SB Ramps to SR 99 NB Ramps	2	1,787	F	1,083	C	1,816	F	1,797	F

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* , for State Two-Way Arterials (Class II) & Non-State Roadways.

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact

- Herndon Avenue: Marks Avenue to West Avenue (eastbound a.m. peak hour, and westbound p.m. peak hour)
- Herndon Avenue: West Avenue to Palm Avenue (eastbound a.m. peak hour, and westbound p.m. peak hour)
- Veterans Boulevard: Golden State Boulevard to Bryan Avenue (southbound p.m. peak hour)Veterans Boulevard: SR 99 northbound ramps to Golden State Boulevard (both directions p.m. peak hour)
- Veterans Boulevard: SR 99 southbound ramps to SR 99 northbound ramps (both directions both peak hours)
- Veterans Boulevard: Bryan Avenue (west) to SR 99 southbound ramps (northbound a.m. peak hour, southbound p.m. peak hour)
- Golden State Boulevard: Shaw Avenue to Ashlan Avenue (northbound p.m. peak hour)
- Shaw Avenue: west of SR 99 southbound ramps (westbound p.m. peak hour)
- Shaw Avenue: SR 99 southbound ramps to SR 99 northbound ramps (both directions both peak hours)
- Shaw Avenue: SR 99 northbound ramps to Golden State Boulevard (westbound p.m. peak hour)
- Shaw Avenue: Golden State Boulevard to Brawley Avenue (eastbound both peak hours, and westbound p.m. peak hour)
- Shaw Avenue: Brawley Avenue to Marks Avenue (both directions p.m. peak hour)
- Palm Avenue: Herndon Avenue to Bullard Avenue (southbound a.m. peak hour)
- Carnegie Avenue: Golden State Boulevard to Bullard Avenue (LOS E in the p.m. peak hour)
- Ashlan Avenue: SR 99 southbound ramps to SR 99 northbound ramps (eastbound both peak hours, and westbound p.m. peak hour)

Buildout Year 2025 Freeway Facilities Level of Service Analyses

Buildout 2025 freeway segment traffic volume forecasts were post-processed by DKS using the existing AADT obtained from the Caltrans Traffic and Vehicle Data Systems Unit webpage. The difference between the future model volume and the existing model volume was added to the existing count to calculate the future analysis volume.

Mainline Levels of Service

Table 7-29 provides the 2025 freeway segment level of service summary. As this table indicates, in the a.m. peak hour, in the southbound direction, the segments of Avenue 7 to Herndon Avenue and Ashlan Avenue to Dakota Avenue are forecast to operate at LOS D. In the p.m. peak hour, in both directions, all freeway segments would operate at unsatisfactory levels of service (LOS D or worse).

Ramp Weaving Analysis

As previously described, the methodology shown in Figure 504.7A from the 2006 Caltrans Highway Design Manual (2006 HDM) was used to determine the freeway weaving LOS. The freeway weaving sections on SR 99 that were analyzed include the segment from Shaw Avenue to (future) Veterans Boulevard and

(future) Veterans Boulevard to Herndon Avenue. Buildout 2025 baseline peak hour on- and off-ramp traffic volumes and mainline volumes were analyzed using Figure 504.7A from the Caltrans HDM. Results from this analysis are shown in Table 7-30. Detailed calculation sheets shown on the Leisch nomographs are provided in Appendix F.

Table 7-29 – Buildout Year 2025 Freeway Segment Level of Service Summary

Freeway	From	To	Density	LOS
Northbound AM				
SR 99	Herndon Avenue	Avenue 7	21.9	C
	Veterans Boulevard	Herndon Avenue	21.9	C
	Shaw Avenue	Veterans Boulevard	17.8	B
	Ashlan Avenue	Shaw Avenue	19.3	C
	Dakota Avenue	Ashlan Avenue	23.8	C
Southbound AM				
SR 99	Avenue 7	Herndon Avenue	27.6	D
	Herndon Avenue	Veterans Boulevard	24.8	C
	Veterans Boulevard	Shaw Avenue	23.8	C
	Shaw Avenue	Ashlan Avenue	23.6	C
	Ashlan Avenue	Dakota Avenue	27.8	D
Northbound PM				
SR 99	Herndon Avenue	Avenue 7	35.7	E
	Veterans Boulevard	Herndon Avenue	33.2	D
	Shaw Avenue	Veterans Boulevard	28.8	D
	Ashlan Avenue	Shaw Avenue	29.8	D
	Dakota Avenue	Ashlan Avenue	36.0	E
Southbound PM				
SR 99	Avenue 7	Herndon Avenue	31.7	D
	Herndon Avenue	Veterans Boulevard	30.2	D
	Veterans Boulevard	Shaw Avenue	27.8	D
	Shaw Avenue	Ashlan Avenue	28.0	D
	Ashlan Avenue	Dakota Avenue	36.4	E

Table 7-30 – Buildout Year 2025 Baseline Freeway Weaving Level of Service Summary

Weaving Section	Distance	# of Lanes	LOS AM	LOS PM
SR 99 Northbound				
- Shaw Avenue to Veterans Boulevard	0.7 miles	3	D	F
- Veterans Boulevard to Herndon Avenue	0.5 miles	3	C	D
SR 99 Southbound				
- Herndon Avenue to Veterans Boulevard	0.5 miles	3	C	E
- Veterans Boulevard to Shaw Avenue	0.7 miles	3	E	F

As shown in the table, the following weaving sections are forecast to operate at an unsatisfactory LOS (LOS D or worse) in the buildout 2025 baseline scenario:

- SR 99 northbound: Shaw Avenue to Veterans Avenue (LOS D in the a.m. peak hour and LOS F in the p.m. peak hour)
- SR 99 northbound: Veterans Avenue to Herndon Avenue (LOS D in the p.m. peak hour)
- SR 99 southbound: Herndon Avenue to Veterans Avenue (LOS E in the p.m. peak hour)
- SR 99 southbound: Veterans Avenue to Shaw Avenue (LOS E in the a.m. peak hour and LOS F in the p.m. peak hour)

At-Grade Railroad Crossing Analysis

Using the HCM "Back of Queue" queuing methodology to analyze the vehicular queuing, Table 7-31 presents the at-grade railroad crossing analysis summary for the buildout 2025 baseline condition. The HCM calculation sheets are provided in Appendix H. By 2025, according to the City, grade separated underpasses would be constructed and would be in full operation at Herndon and Shaw Avenues. Therefore, according to the table, the Carnegie Avenue crossing would have queues extending from the crossing, west to Golden State Boulevard, and east to Bullard Avenue in one or both peak hours.

Table 7-31- Buildout 2025 Baseline Condition At-Grade Railroad Crossing Analysis Summary

Crossing Location	Peak Hour [1]	Rail Crossing Time (seconds) [2]	Vehicular Queue (feet) [3]		Impact to Adjacent Major Intersection [4]			
			e/o tracks	w/o tracks	e/o tracks		w/o tracks	
Herndon Avenue	*Grade Separated Underpass Improvement*							
Carnegie Avenue	AM PM	243 110	1,166 681	1,368 1,430	Yes No	720 ft to Bullard Ave	Yes Yes	75 ft to Golden State Blvd
Shaw Avenue	*Grade Separated Underpass Improvement*							

[1] - Based on observed train crossings in 2007 within the AM and PM peak commute hours.

[2] - Based on time that train crossing gate arms go down, to time gate arms go up.

[3] - Vehicle queue determined using *Highway Capacity Manual* (HCM) "Back of Queue Equation".

[4] – Impact based on whether vehicular queue would extend to an adjacent major intersection. For Herndon and Shaw Avenues the major intersection west of tracks will be the northbound ramp intersections with SR 99, rather than the closely spaced intersections with Golden State Blvd/Herndon Ave (125 ft) and Golden State Blvd/Shaw Ave (50 ft).

8.0 MASTER PLAN TRIP GENERATION, DISTRIBUTION, AND ASSIGNMENT

This section describes the trip generation, distribution, and assignment of the proposed project's Phases 1 through 5 traffic volumes on the study area transportation network facilities. In addition, this section discusses the trip generation estimates of the current General Plan designated land uses on the Master Plan site.

Master Plan Trip Generation

Weekday and Saturday daily and peak hour trip generation estimates for the proposed project, Phases 1 through 5, were developed using trip rates provided in the Institute of Transportation Engineers (ITE) *Trip Generation*, 7th Edition. Summaries of the trip generation rates and resulting vehicle trips for the proposed project are presented in Tables 8-1 and 8-2 for a typical weekday (Phases 1 through 5) and typical Saturday (Phase 1 only), respectively.

According to the tables, during the weekdays, Phase 1 would generate approximately 37,906 daily trips, 1,025 a.m. peak hour trips (582 inbound and 443 outbound), and 3,081 p.m. peak hour trips (1,492 inbound and 1,589 outbound). During a typical Saturday, Phase 1 would generate approximately 4,594 peak hour trips (2,363 inbound and 2,231 outbound).

For the entire project, Phases 1, 2, 3, 4, and 5 at their buildout, the proposed project would generate approximately 95,614 daily trips, 3,281 a.m. peak hour trips (2,254 inbound and 1,027 outbound), and 8,068 p.m. peak hour trips (3,573 inbound and 4,495 outbound) during a typical weekday.

It should be noted that the above trip generation estimates represent a conservative, but realistic, estimate of daily and peak hour trip generation based on the following characteristics: 1) a conservative pass-by percentage reduction was applied to the retail/commercial uses (in only the p.m. peak hour, consistent with pass-by data provided by the ITE); and 2) trip rates used for the "big box" retail uses ("anchor" and "major" retail/commercial pads) were taken from rates for stand-alone big box stores that were not part of an integrated center of retail uses that would normally capture trips for a variety of other retail uses. The following provides a discussion of these characteristics.

Pass-by Trips

Pass-by trip reductions for retail/commercial uses allow for a reduction of project trips at all off-site intersections as it assumes that existing and/or baseline (background) traffic, already traveling on the street network, would deviate from their pattern and create a pass-by trip to a retail use. For example, a driver that is already traveling from his office, back to his home (which is called the "primary" trip), may now decide to pass-by a retail use (e.g., to purchase goods, or obtain services, like banks or dry cleaners) now that this use is on his way home. At that point, his existing trip through the street network is now a pass-by trip to the retail use, and not a creation of a new trip on the street network by the retail use.

The ITE *Trip Generation Manual* provides various studies on pass-by trip making (as well as primary trip making, and diverted-link trip making) for a variety of retail uses. For the Phase 1 retail use, of the total 906,788 square feet of retail uses, only 438,939 square feet was assumed to be

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Table 8-1A - Proposed Phases 1-5 Weekday Trip Generation Estimates

Land Use	Size[1]	Daily	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
TRIP RATES								
- Shopping Center	per TSF	*ITE**		*ITE equation**			*ITE equation**	
- Office Park	per TSF	*ITE**		*ITE equation**			*ITE equation**	
- Multiplex Movie Theater	per seat	1.80 [2]		n/a		0.03	0.05	0.08
- Business Hotel	per room	7.27	0.34	0.24	0.58	0.37	0.25	0.62
- Business Park	per TSF	*ITE**		*ITE equation**			*ITE equation**	
- General Office	per TSF	*ITE**		*ITE equation**			*ITE equation**	
- Health/Fitness Center	per TSF	32.93	0.51	0.70	1.21	2.07	1.98	4.05
- Free-Standing Discount Superstore	per TSF	49.21	0.94	0.90	1.84	1.90	1.97	3.87
- Home Improvemnet Superstore	per TSF	29.80	0.65	0.55	1.20	1.15	1.30	2.45
- Free-Standing Discount Store	per TSF	56.02	0.57	0.27	0.84	2.53	2.53	5.06
TRIP GENERATION								
Phase 1 *2010 Opening Year*								
- Shopping Center	438.939 TSF	17,762	232	148	380	798	864	1,662
Pass-By Trip Reduction [3]	15.0%	-	-	-	-	-120	-130	-249
- Anchor 1 (Discount Superstore)	186.000 TSF	9,153	175	167	342	353	366	720
- Anchor 2 (Discount Store)	98.844 TSF	5,537	56	27	83	250	250	500
- Anchor 3 (Home Improvement Superstore)	183.005 TSF	5,454	119	101	220	210	238	448
Net Trip Generation Phase 1		37,906	582	443	1,025	1,492	1,589	3,081
Phase 2A *2012 Opening Year*								
- Shopping Center	17.000 TSF	2,146	33	21	54	93	101	194
Pass-By Trip Reduction [3]	15.0%	-	-	-	-	-14	-15	-29
- Office Park	252.000 TSF	3,035	419	52	471	58	354	411
- Health/Fitness Center	68.000 TSF	2,239	35	48	82	140	135	275
Net Trip Generation Phase 2A		7,421	487	121	607	277	574	852
Phase 2B *2012 Opening Year*								
- Multiplex Movie Theater	2,500 seats	4,500		n/a		72	128	200
- Business Hotel	132 rooms	960	45	31	77	49	33	82
- Major (Discount Store)	135.256 TSF	7,577	77	36	114	342	342	684
- Shopping Center	481.377 TSF	18,860	245	157	402	848	918	1,766
Pass-By Trip Reduction [3]	15.0%	-	-	-	-	-127	-138	-265
Net Trip Generation Phase 2B		31,897	368	224	592	1,184	1,284	2,468
Phase 3 *2017 Opening Year*								
- Business Hotel	120 rooms	872	41	29	70	45	30	74
- Business Park	370.000 TSF	4,725	433	82	516	116	387	503
- Shopping Center	68.500 TSF	5,311	76	49	125	234	254	488
Pass-By Trip Reduction [3]	15.0%	-	-	-	-	-35	-38	-73
Net Trip Generation Phase 3		10,908	550	160	710	359	633	992
Phase 4 *2017 Opening Year*								
- Shopping Center	83.000 TSF	6,016	85	55	140	266	288	554
Pass-By Trip Reduction [3]	15.0%	-	-	-	-	-40	-43	-83
Net Trip Generation Phase 4		6,016	85	55	140	226	245	471
Phase5 *2019 Opening Year*								
- General Office	113.000 TSF	1,466	182	25	207	35	170	205
Net Trip Generation Phase 5		1,466	182	25	207	35	170	205
NET TOTAL TRIP GENERATION (PHASES 1 - 5)		95,614	2,254	1,027	3,281	3,573	4,495	8,068

Note: Trip rates based on Institute of Transportation Engineers (ITE)*Trip Generation, 7th Edition*, 2003 and *Trip Generation Handbook*, 2003.

[1] TSF = Thousand Square Feet, DU = Dwelling Unit

[2] Daily trip rate not provided in ITE; trip rate derived from SANDAG trip rates (2002).

[3] Shopping Center Pass By Trip Reduction: *Trip Generation Handbook*, Table 5.5.

[4] Business Park Saturday Peak Hour rate calculated using the ratio between Weekday PM and Weekday Daily rates as applied to the given Saturday Daily rate.

* ITE Fitted Curve Equation is applied.

Table 8-1B - Proposed Phase 1 Saturday Trip Generation Estimates

Land Use	Size[1]	Saturday Midday In	Out	Total
TRIP RATES				
- Shopping Center	per TSF		*ITE equation**	
- Office Park	per TSF	0.10	0.04	0.14
- Multiplex Movie Theater	per seat	0.25	0.21	0.46
- Business Hotel	per room	0.34	0.42	0.76
- Business Park	per TSF		*ITE equation** [4]	
- General Office	per TSF		*ITE equation**	
- Health/Fitness Center	per TSF	1.30	1.30	2.60
- Free-Standing Discount Superstore	per TSF	2.56	2.45	5.01
- Home Improvemnet Superstore	per TSF	2.86	2.54	5.40
- Free-Standing Discount Store	per TSF	3.87	3.71	7.58
TRIP GENERATION				
Phase 1 *2010 Opening Year*				
- Shopping Center	438.939 TSF	1,155	1,109	2,264
Pass-By Trip Reduction [3]	15.0%	-173	-166	-340
- Anchor 1 (Discount Superstore)	186.000 TSF	476	456	932
- Anchor 2 (Discount Store)	98.844 TSF	382	367	749
- Anchor 3 (Home Improvement Superstore)	183.005 TSF	523	465	988
Net Trip Generation Phase 1		2,363	2,231	4,594
Phase 2A *2012 Opening Year*				
- Shopping Center	17.000 TSF	140	134	274
Pass-By Trip Reduction [3]	15.0%	-21	-20	-41
- Office Park	252.000 TSF	26	9	35
- Health/Fitness Center	68.000 TSF	88	88	177
Net Trip Generation Phase 2A		233	212	445
Phase 2B *2012 Opening Year*				
- Multiplex Movie Theater	2,500 seats	633	518	1,150
- Business Hotel	132 rooms	45	55	100
- Major (Discount Store)	135.256 TSF	523	502	1,025
- Shopping Center	481.377 TSF	1,226	1,178	2,404
Pass-By Trip Reduction [3]	15.0%	-184	-177	-361
Net Trip Generation Phase 2B		2,243	2,076	4,319
Phase 3 *2017 Opening Year*				
- Business Hotel	120 rooms	41	50	91
- Business Park	370.000 TSF	55	55	111
- Shopping Center	68.500 TSF	345	332	677
Pass-By Trip Reduction [3]	15.0%	-52	-50	-102
Net Trip Generation Phase 3		390	387	777
Phase 4 *2017 Opening Year*				
- Shopping Center	83.000 TSF	391	376	767
Pass-By Trip Reduction [3]	15.0%	-59	-56	-115
Net Trip Generation Phase 4		332	319	652
Phase5 *2019 Opening Year*				
- General Office	113.000 TSF	22	19	41
Net Trip Generation Phase 5		22	19	41
NET TOTAL TRIP GENERATION (PHASES 1 - 5)		5,583	5,244	10,827

Note: Trip rates based on Institute of Transportation Engineers (ITE)*Trip Generation,*

[1] TSF = Thousand Square Feet, DU = Dwelling Unit

[2] Daily trip rate not provided in ITE; trip rate derived from SANDAG trip rates (2002).

[3] Shopping Center Pass By Trip Reduction: *Trip Generation Handbook*, Table 5.5.

[4] Business Park Saturday Peak Hour rate calculated using the ratio between Weekday PM and Weekday Daily rates as applied to th

* ITE Fitted Curve Equation is applied.

classified as an integrated "shopping center" which would contain retail and service uses conducive to pass-by trip making. The other 467,849 square feet of retail uses are planned to be big box-type retail uses, and though part of the overall integrated shopping center, were assumed to generate traffic as a stand-alone retail use making those uses a primary destination with little to no pass-by trip making.

Pass-by trip reduction percentages were researched in ITE's *Trip Generation Manual* for the integrated shopping center in Phase 1. A group of shopping centers/malls were found and ranged from 370,000 square feet to 488,000 square feet, and had surveyed pass-by percentages ranging from 12 percent to 56 percent in the p.m. peak hour, which had an average pass-by trip making at 28 percent. Furthermore, per the Caltrans Guidelines for Traffic Impact Studies, a maximum of 15 percent was allowed for pass-by trips on retail uses before special justification was required. Therefore, though a 28 percent pass-by trip reduction could be applied to Phase 1 of the project based on empirical p.m. peak hour data collected by the ITE, a 15 percent pass-by was applied to the p.m. peak hour only to the non-anchor retail uses of Phase 1.

Similarly, based on the proposed square footages of the other retail uses in Phases 2 (2A and 2B), 3, and 4, where ITE pass-by percentages averaged between 31 percent and 54 percent in the p.m. peak hour, the same 15 percent pass-by percentage was applied to all integrated retail uses (and not any anchor or major retail uses) for the p.m. peak hour trip generation calculations.

Stand-Alone Big Box Retail Rates

Another conservative characteristic of the proposed project's trip generation estimates are the use of stand-alone, or freestanding, trip rates of large retail uses, for the anchor and major retail tenants in Phases 1 and 2B, even though those anchor and major retail uses are part of an overall integrated shopping center managed as one retail center. According to the land use descriptions in the ITE *Trip Generation*, 7th Edition publication:

> "*A shopping center is an integrated group of commercial establishments that is planned, developed, owned and managed as a unit…Shopping centers, including regional centers and super regional centers were surveyed for this land use (trip rates)…The centers ranged in size from 1,700 to 2.2 million square feet of gross leasable area…Many shopping centers, in addition to the integrated unit of shops in one building or enclosed around a mall, include outparcels (peripheral buildings or pads located on the perimeter of the center adjacent to the streets and major access points*…"

Comparison of the use of the ITE Shopping Center rates versus the ITE Free Standing Store (Discount Superstore, Home Improvement Superstore, Electronics Superstore, Toy/Children's Superstore, Baby Superstore, Book Superstore, and Discount Home Furnishings Superstore) indicates that use of the appropriate Shopping Center rate yields a significantly lower trip generation. However, for conservative purposes in the traffic analysis, the anchor and major retail uses proposed for the project were analyzed as stand-alone, freestanding, retail uses. In addition, no pass-by trip reductions were applied to these anchor and major retail uses further making the trip generation estimates as conservative as possible.

Trip Generation of Current General Plan Land Uses

As previously mentioned, the Master Plan site is currently designated as Light Industrial and Medium Residential in the 2025 General Plan. Based on a trip generation analysis utilizing ITE trip rates for Light Industrial and Residential Condominium/Townhouse, Table 8-3 presents the trip generation estimates of the current land uses designated on the Master Plan site.

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Table 8-2 - 2025 General Plan Site Designated Land Uses Trip Generation Estimates

Land Use	Size[1]	Daily	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
TRIP RATES								
- Light Industrial	per Acre	51.80	6.23	1.28	7.51	1.60	5.66	7.26
- Residential Condominium/Townhouse	per DU	5.86	0.07	0.37	0.44	0.35	0.17	0.52
TRIP GENERATION								
Phase 1								
- Light Industrial	77.800 Acre	4,030	485	99	584	124	441	565
Net Trip Generation Phase 1		4,030	485	99	584	124	441	565
Phase 2A								
- Light Industrial	17.175 Acre	890	107	22	129	27	97	125
- Residential Condominium/Townhouse	44 DU[2]	258	3	16	19	15	8	23
Net Trip Generation Phase 2A		1,147	110	38	148	43	105	148
Phase 2B								
- Light Industrial	72.500 Acre	3,756	452	93	544	116	411	526
Net Trip Generation Phase 2B		3,756	452	93	544	116	411	526
Phase 3								
- Light Industrial	22.560 Acre	1,169	141	29	169	36	128	164
- Residential Condominium/Townhouse	173 DU[2]	1,015	13	63	76	60	30	90
Net Trip Generation Phase 3		2,184	154	92	246	96	157	254
Phase 4								
- Residential Condominium/Townhouse	63 DU[2]	368	5	23	28	22	11	33
Net Trip Generation Phase 4		368	5	23	28	22	11	33
Phase5								
- Residential Condominium/Townhouse	77 DU[2]	453	6	28	34	27	13	40
Net Trip Generation Phase 5		453	6	28	34	27	13	40
NET TOTAL TRIP GENERATION (PHASES 1 - 5)		11,938	1,211	373	1,584	428	1,137	1,565

Note: Trip rates based on Institute of Transportation Engineers (ITE)*Trip Generation, 7th Edition*, 2003 and *Trip Generation Handbook*, 2003.

[1] TSF = Thousand Square Feet, DU = Dwelling Unit

[2] Project area acreage converted to dwelling units using average DU/acre for Medium Density Residential per General Plan range of 4.99 DU/acre to 10.37 DU/acre.

According to the table, the traffic generated by the Master Plan area, based on the currently designated General Plan land uses (Light Industrial and Medium Residential), is approximately 11,938 ADT, 1,584 a.m. peak hour trips (1,211 inbound and 373 outbound), and 1,565 peak hour trips (428 inbound and 1,137 outbound).

With the proposed General Plan Amendment, the Master Plan would replace the designated Light Industrial and Medium Residential uses with a mix of retail/commercial uses (power center, lifestyle, and neighborhood retail centers) and office/business park uses. Based on the Master Plan's total trip generation estimates discussed above, the entire 240 acre Master Plan area would generate approximately 95,614 ADT, 3,281 a.m. peak hour trips (2,254 inbound and 1,027 outbound), and 8,068 p.m. peak hour trips (3,573 inbound and 4,495 outbound).

Therefore, the additional net trips generated in the Master Plan area (i.e., the difference in trips between the proposed GPA and currently designated land uses) would be approximately 83,676 *more* ADT, 1,697 *more* a.m. peak hour trips, and 6,503 *more* p.m. peak hour trips.

Master Plan Trip Distribution and Assignment

Project trip distribution patterns were developed based on review of select zone plots for Phases 1 and 2 (2A and 2B) and manually adding the project trips to the 2010 and 2012 baseline traffic volumes. In general the select zone run uses the following factors to determine a TAZ's distribution and trip assignment: 1) location of jobs, recreation, retail/commercial, and other land uses within the City/County and adjacent cities and communities; and 2) transportation facility characteristics that impact travel demand (i.e. locations of urban arterials, freeways, and interchanges). For Phases 3, 4, and 5, the Fresno COG travel model was utilized to assign the project trips to the 2017 and 2019 street networks.

However, it should be noted that the distribution patterns determined from select zone model runs are best for the interpretation of zonal distribution at the regional level. Since traffic models are not developed to assess traffic at a micro-level (i.e., analysis of project driveways and other local streets and/or known "short-cuts"), some manual re-distribution of traffic based on sound traffic engineering judgment was required for the roadways and intersections adjacent to each phase of the Master Plan.

Figure 8-1A illustrates the generalized weekday trip distribution percentages throughout the study area based on review of select zone assignments, with some manual adjustments, in the Fresno COG travel model for Phases 1, 2, 3, 4, and 5. Figure 8-1B illustrates the Saturday trip distribution percentages for Phase 1.

Figures 8-2A and 8-2B illustrate the trip assignment for Phase 1 for the weekday and Saturday peak hours, respectively. Figures 8-3, 8-4, 8-5, 8-6, and 8-7 illustrate the trip assignments for Phases 2A, 2B, 3, 4, and 5, respectively, for the weekday a.m. and p.m. peak hours.

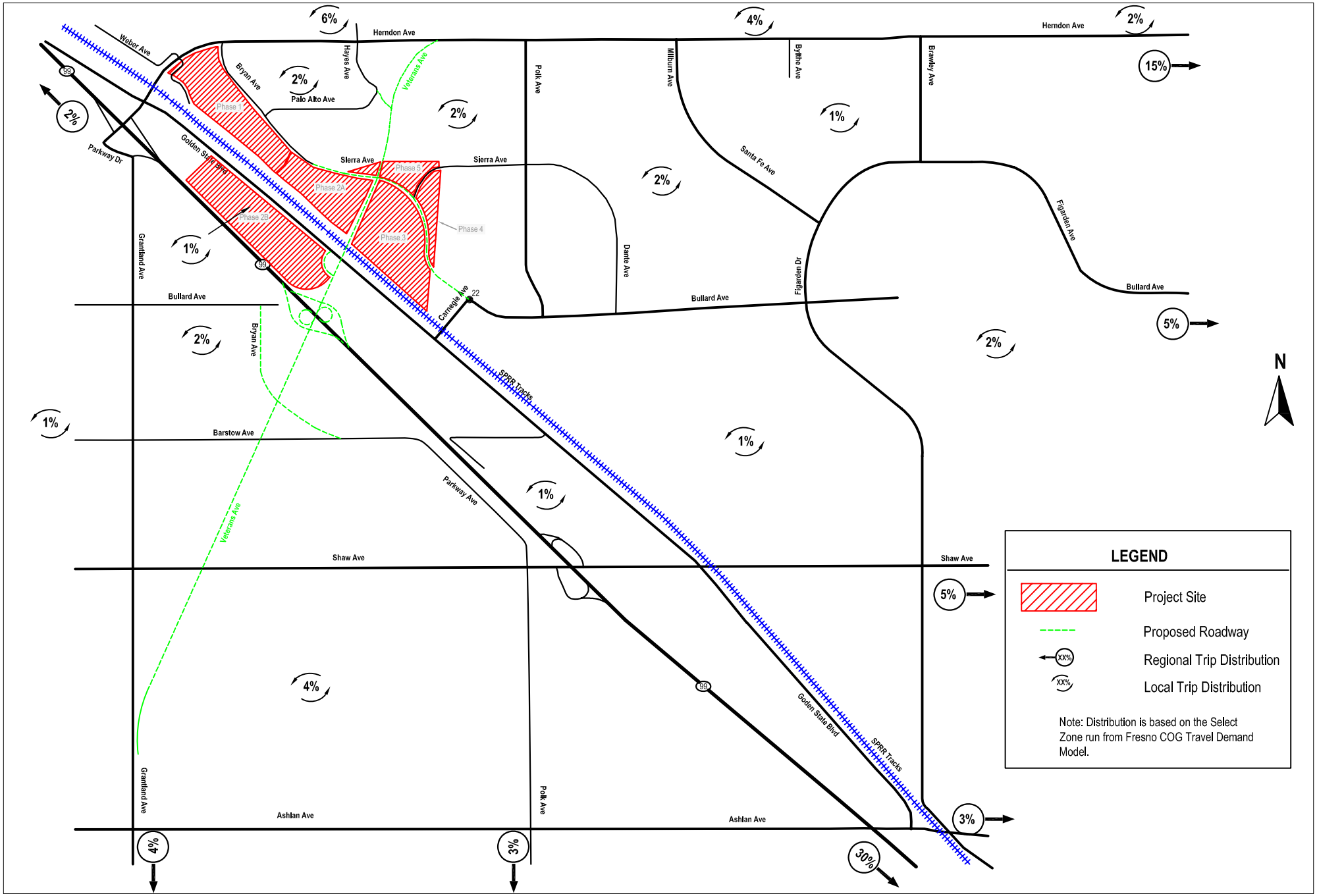

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Figure 8-1A
Project (Phases 1 through 5) Generalized Weekday Trip Distribution

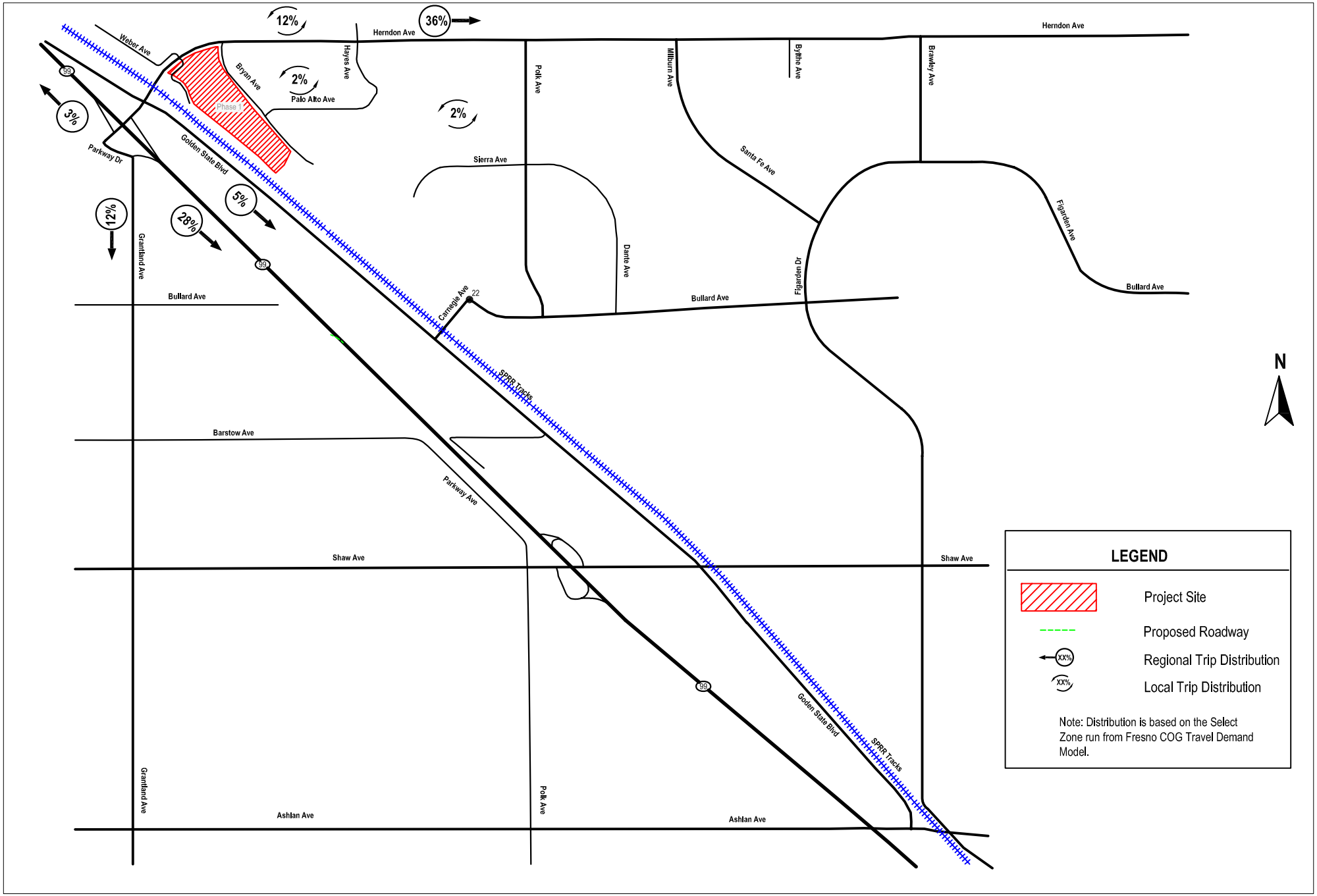

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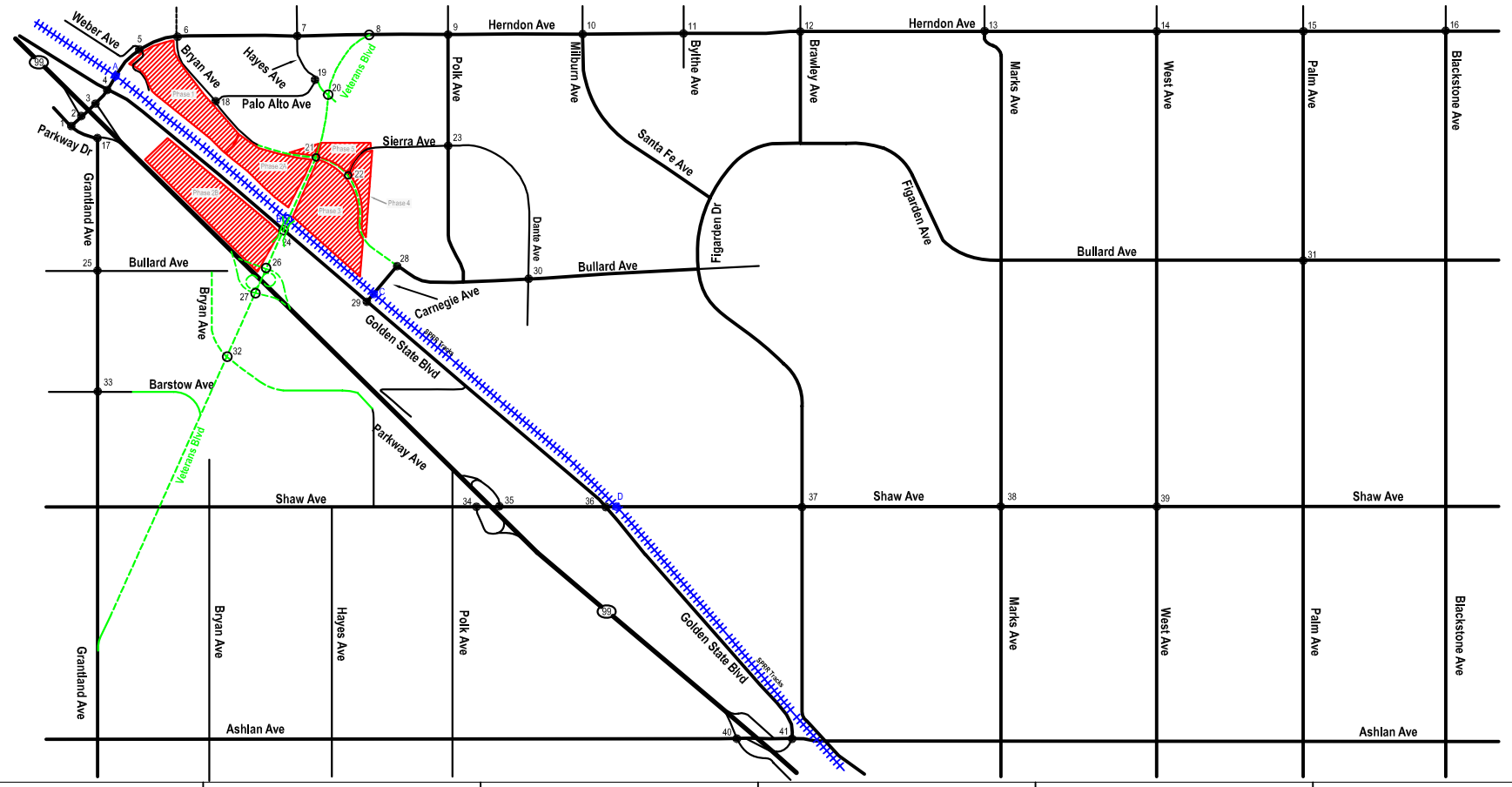
Figure 8-1B
Project (Phase 1) Generalized Saturday Trip Distribution



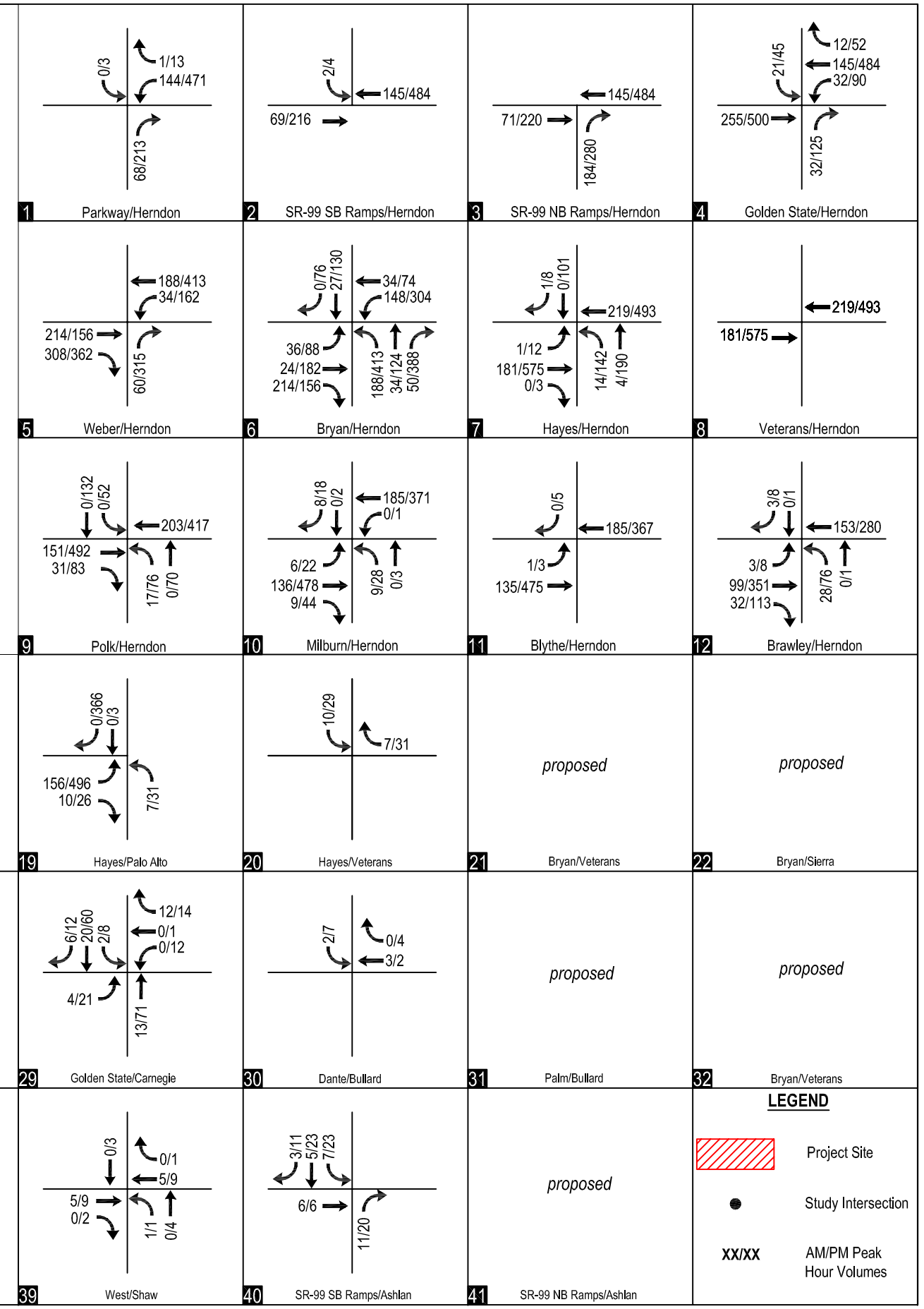


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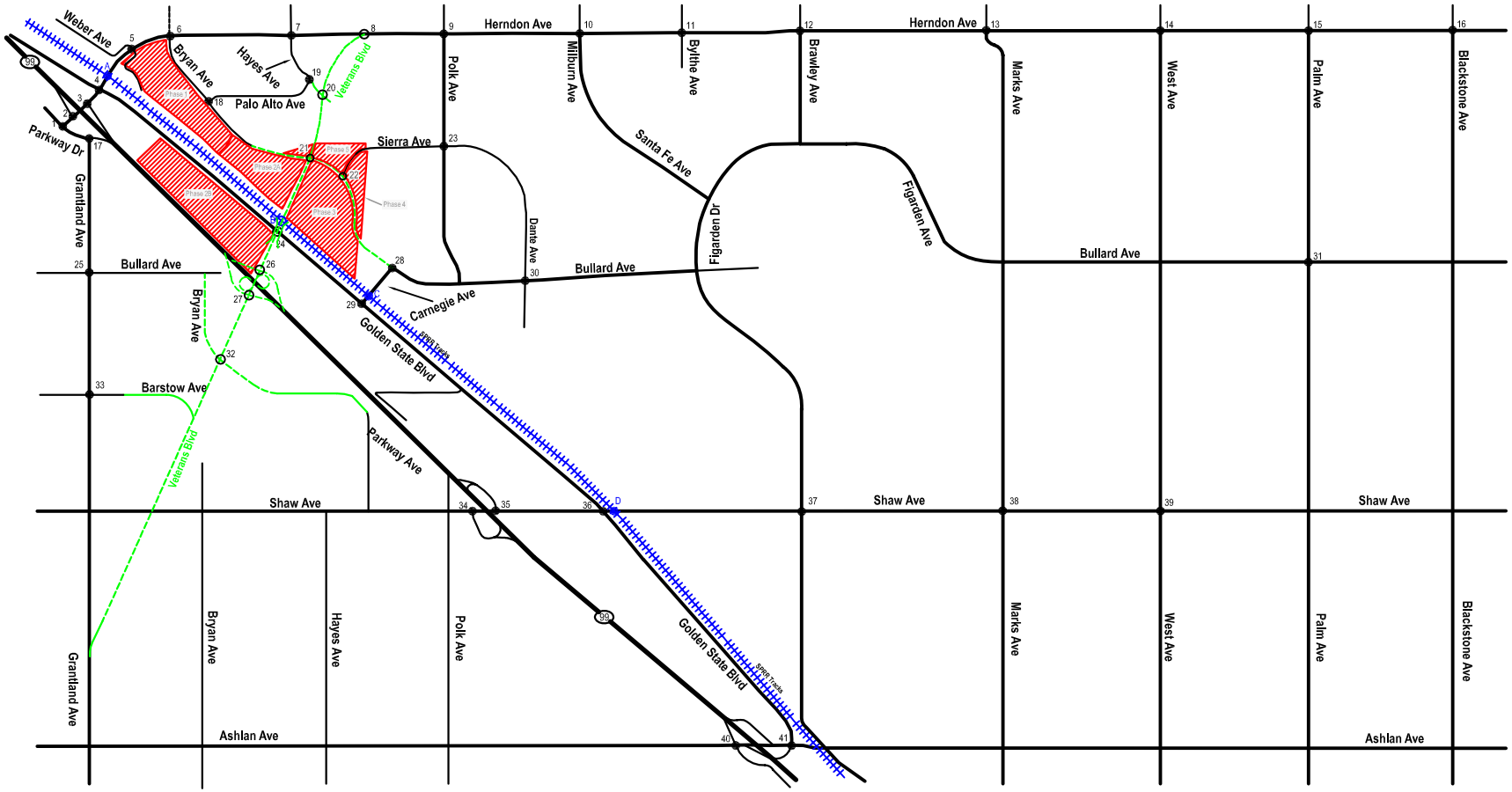
Figure 8-2A
Phase 1 Weekday AM and PM Peak Hour Trip Assignment


Weber Ave
Bryan Ave
Hayes Ave
Palo Alto Ave
Veterans Blvd
Herndon Ave
Polk Ave
Millburn Ave
Bythe Ave
Brawley Ave
Marks Ave
West Ave
Palm Ave
Blackstone Ave
Parkway Dr
Grantland Ave
Sierra Ave
Santa Fe Ave
Figarden Dr
Figarden Ave
Dante Ave
Bullard Ave
Carnegie Ave
Golden State Blvd
Barstow Ave
Parkway Ave
Shaw Ave
Ashlan Ave
Phase 1
Phase 2
Phase 3
Phase 4
Phase 5
Phase 6
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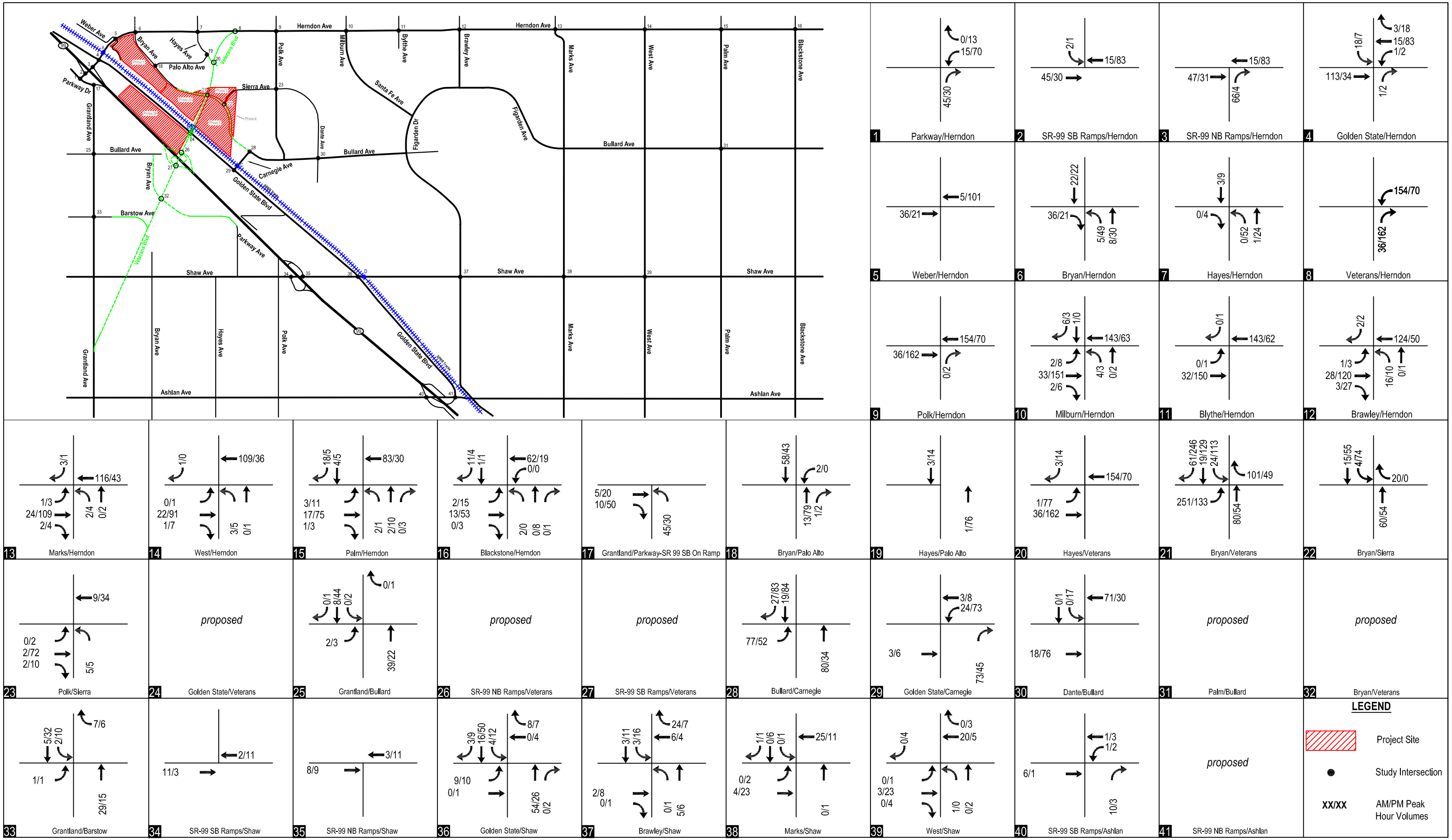

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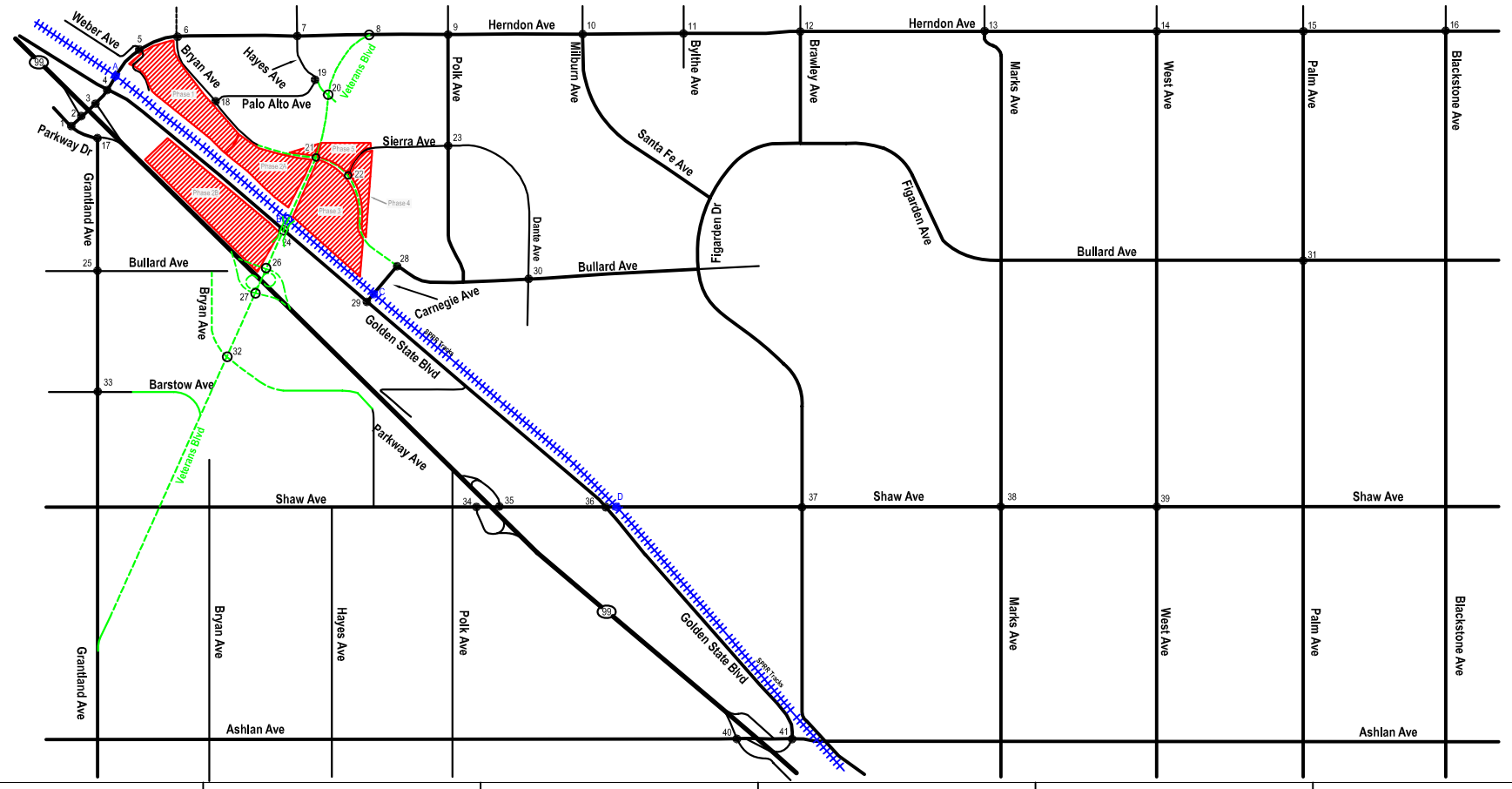
Figure 8-3
Phase 2A Weekday AM and PM Peak Hour Trip Assignment



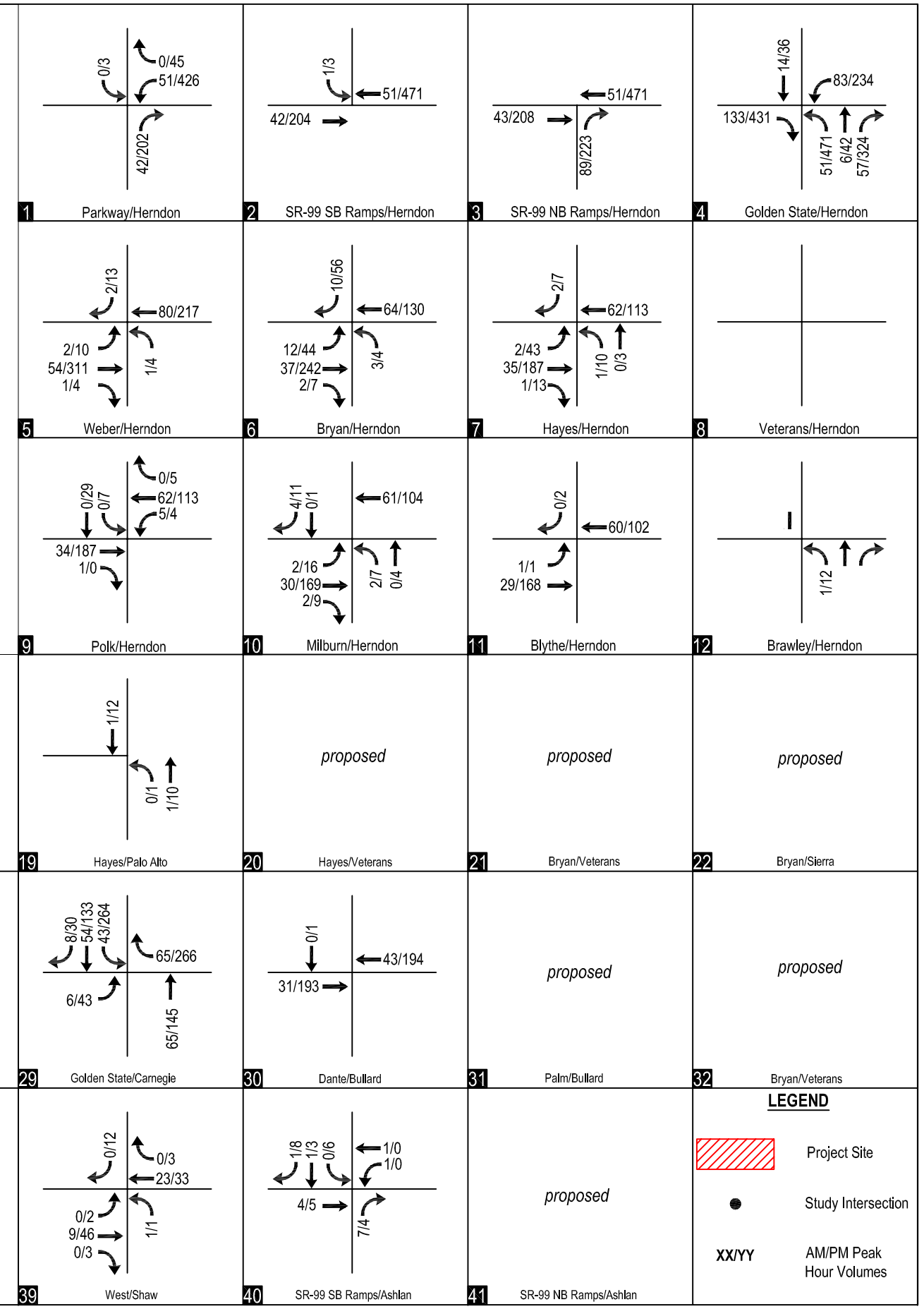


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Figure 8-4
Phase 2B Weekday AM and PM Peak Hour Trip Assignment

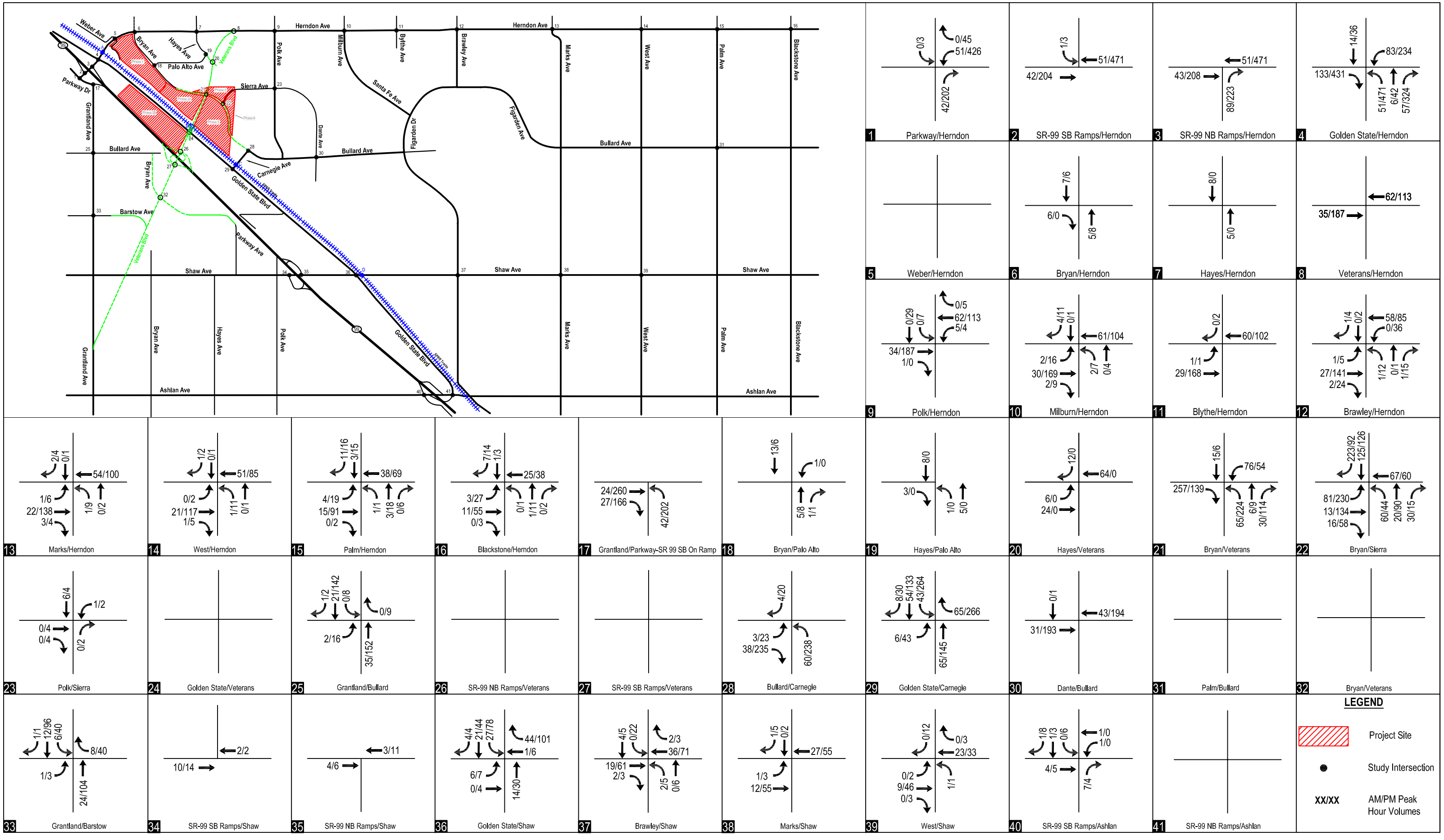

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Figure 8-5
Phase 3 Weekday AM and PM Peak Hour Trip Assignment

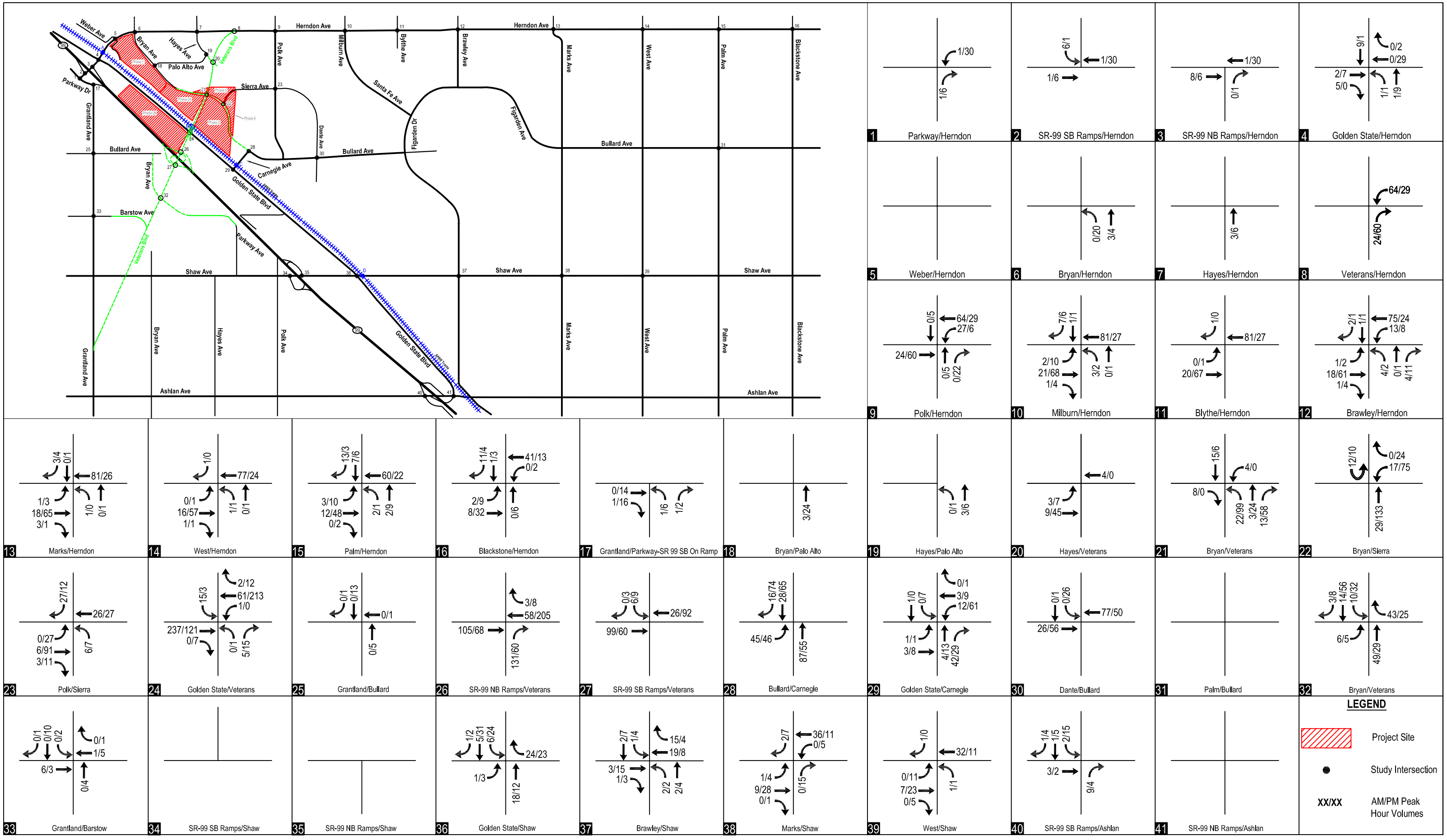

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Figure 8-6
Phase 4 Weekday AM and PM Peak Hour Trip Assignment

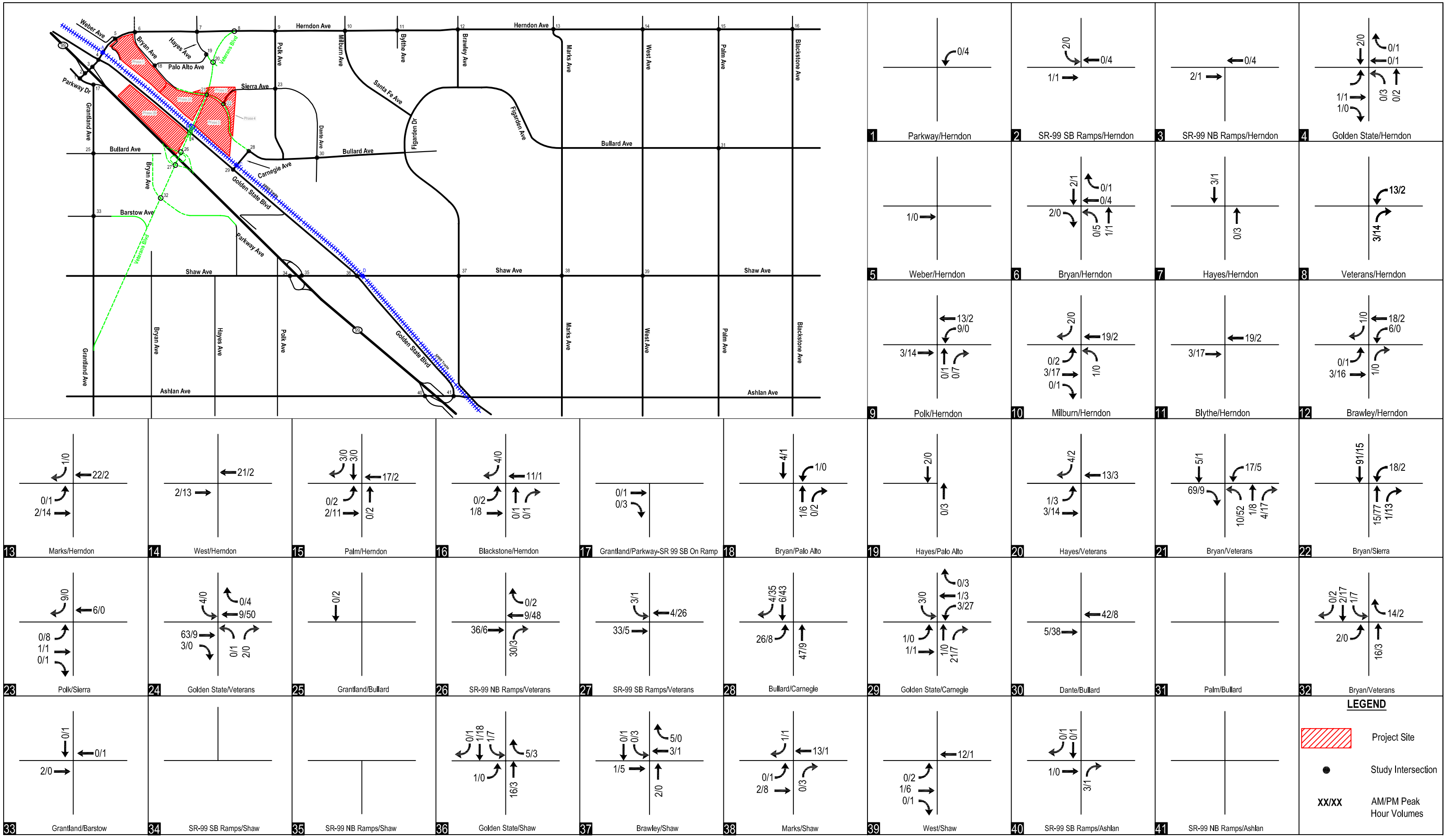

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Figure 8-7
Phase 5 Weekday AM and PM Peak Hour Trip Assignment

9.0 YEARS 2007 (EXISTING), 2010, 2012, 2017, 2019, and BUILDOUT 2025 PLUS PROJECT TRAFFIC ANALYSES

This section assesses the baseline and project-added traffic conditions under the different analysis scenarios described previously: Existing 2007 conditions; Phase 1 baseline year 2010; Phases 1 and 2 (2A and 2B) baseline year 2012; Phases 1, 2, 3, and 4 baseline year 2017; and Phases 1, 2, 3, 4, and 5 baseline year 2019; and buildout year 2025.

Existing plus Master Plan (Phases 1, 2, 3, 4, and 5)

In accordance with CEQA, an Existing plus Master Plan condition has been analyzed and results are discussed below.

Traffic Volumes and Geometrics

The Existing plus Master Plan (Phases 1, 2, 3, 4, and 5) weekday a.m. and p.m. peak hour traffic volumes were determined by adding the buildout project trip assignment of the Master Plan (Phases 1 – 5) to the existing 2007 traffic volumes. Figure 9-1 illustrates the resulting Existing plus Master Plan weekday peak hour traffic volumes.

The existing geometrics corresponding with the October 2007 traffic counts have been analyzed in this scenario. No future committed network improvements were assumed. However, in the Phase 1 site, the south leg of Weber Avenue at Weber Avenue/Herndon Avenue would be terminated, and access to the six existing single-family homes would be provided through the Phase 1 site at the new right turn in/out driveway on to Herndon Avenue.

Intersection Levels of Service

Table 9-1 presents the results of the Existing plus Master Plan intersection LOS for the weekday peak hours as calculated in Synchro. In addition, the table also compares the Existing plus Master Plan LOS with the Existing baseline LOS at those intersections that are forecast to operate, or continue to operate, with unsatisfactory LOS (i.e., LOS E or F).

According to the table and based on the City's significance criteria, the following study intersections would be significantly impacted by the addition of the proposed Master Plan (Phases 1 through 5) to existing (2007) traffic. Therefore, the proposed project would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or greater at LOS E or F) at the following study intersections:

- Parkway Drive/Herndon Avenue (additional delay ≥5 seconds to LOS F in a.m.; LOS E to F in p.m.)
- SR 99 southbound off-ramp/Herndon Avenue (LOS D to F in a.m.; LOS C to F in p.m.)
- SR 99 northbound off-ramp/Herndon Avenue (LOS E to F in a.m.; additional delay ≥5 seconds to LOS F in p.m.)
- Golden State Boulevard/Herndon Avenue (LOS C to F in both peak hours)
- Phase 1 secondary driveway (former Weber Avenue)/Herndon Avenue (LOS B to F in the p.m.)
- Bryan Avenue/Herndon Avenue (LOS B to F in p.m.)
- Polk Avenue/Herndon Avenue (LOS C to E in p.m.)

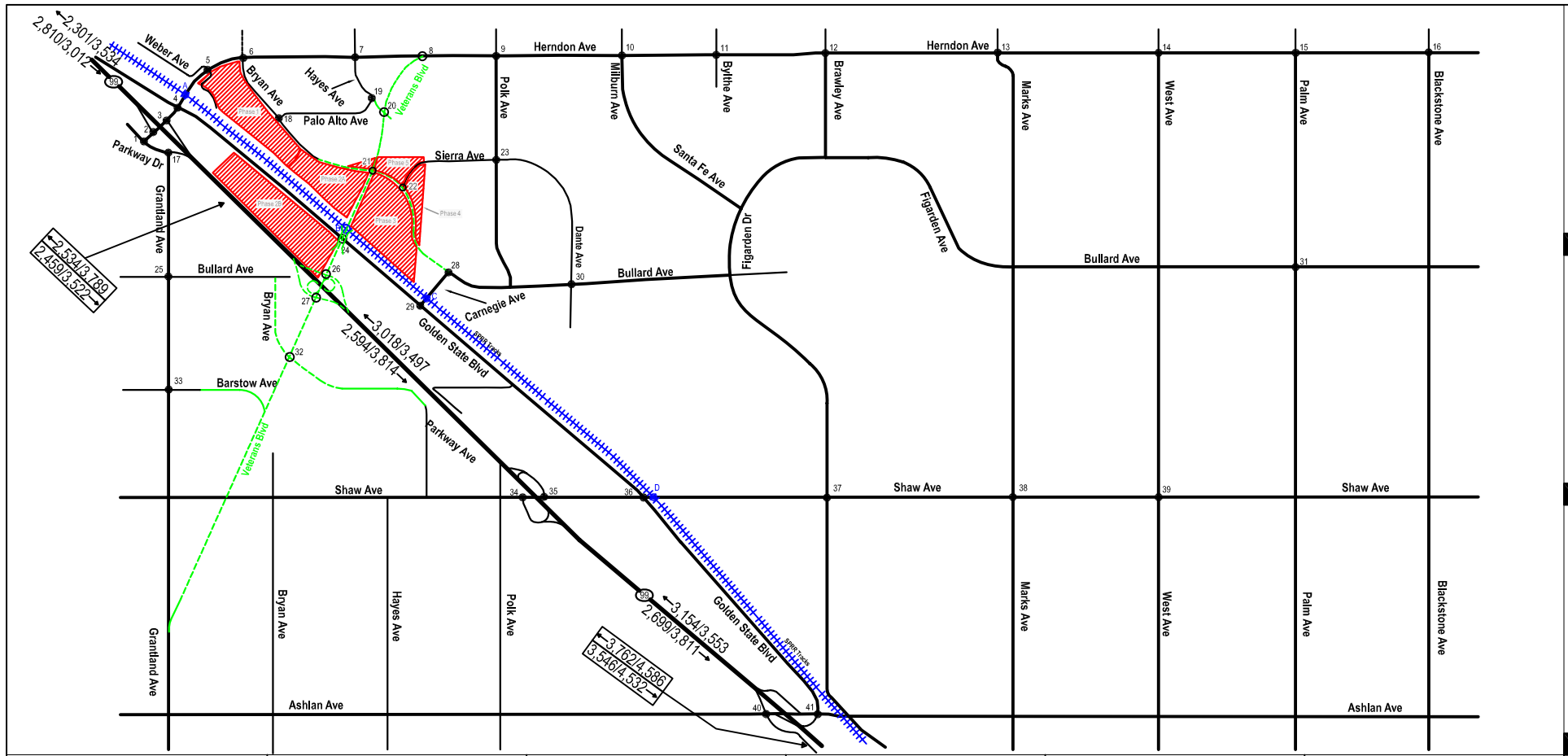
- Palm Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS F in p.m.)

- Grantland Avenue/Parkway Drive (LOS C to F in a.m.; LOS B to F in p.m.)
- Veterans Boulevard/Bryan Avenue (new intersection; LOS E in p.m.)
- Polk Avenue/Sierra Avenue (LOS B to F in p.m.)
- Carnegie Avenue/Bullard Avenue (LOS E to F in a.m.; additional delay ≥5 seconds to LOS F in p.m.)
- Golden State Boulevard/Carnegie Avenue (LOS E to F in a.m.; LOS C to F in p.m.)
- Dante Avenue/Bullard Avenue (LOS B to F in both peak hours)
- Palm Avenue/Bullard Avenue (LOS D to E in p.m.)
- Grantland Avenue/Barstow Avenue (LOS B to E in p.m.)
- SR 99 southbound ramps/Shaw Avenue (LOS C to D in p.m.)
- Brawley Avenue/Shaw Avenue (LOS D to E in p.m.)
- SR 99 northbound ramps/Ashlan Avenue (additional delay ≥5 seconds to LOS E in p.m.)

Queuing Analysis

Table 9-2 presents the results of the Existing plus Master Plan (Phases 1, 2, 3, 4, and 5) weekday a.m. and p.m. peak hour queuing analysis based on the Synchro LOS analysis and the calculated 95th percentile queue lengths for each left- and/or right turn storage lane for each study area intersection. Based on the queuing analysis, the addition of Master Plan traffic to the existing (2007) condition would create new significant queues and/or exacerbate significant baseline queues by more than one vehicle (or 25 feet) that would exceed a storage lane's capacity during the weekday peak hours:

- SR 99 southbound off-ramp/Herndon Avenue (SBL and SBR in p.m.)
- SR 99 northbound off-ramp/Herndon Avenue (NBL in both peak hours)
- Golden State Boulevard/Herndon Avenue (NBL and EBL in p.m.; NBR, SBL, and WBL in both peak hours)
- Bryan Avenue/Herndon Avenue (NBL and WBL in both peak hours; NBR in p.m.)
- Hayes Avenue/Herndon Avenue (WBL in a.m.)
- Milburn Avenue/Herndon Avenue (SBR and WBR in p.m.)
- Brawley Avenue/Herndon Avenue (NBL and WBL in p.m.)
- Marks Avenue/Herndon Avenue (SBR and EBR in p.m.)
- West Avenue/Herndon Avenue (NBR in a.m.; SBL in both peak hours)
- Palm Avenue/Herndon Avenue (NBL, SBR, and EBL in both peak hours; WBR in a.m.)
- Grantland Avenue/Parkway Drive (NBL in both peak hours)
- Bryan Avenue/Palo Alto Avenue (NBL and EBL in p.m.; SBL in a.m.)
- Bryan Avenue/Sierra Avenue (SBL and WBL in p.m.)
- Palm Avenue/Bullard Avenue (SBL and EBL in both peak hours)



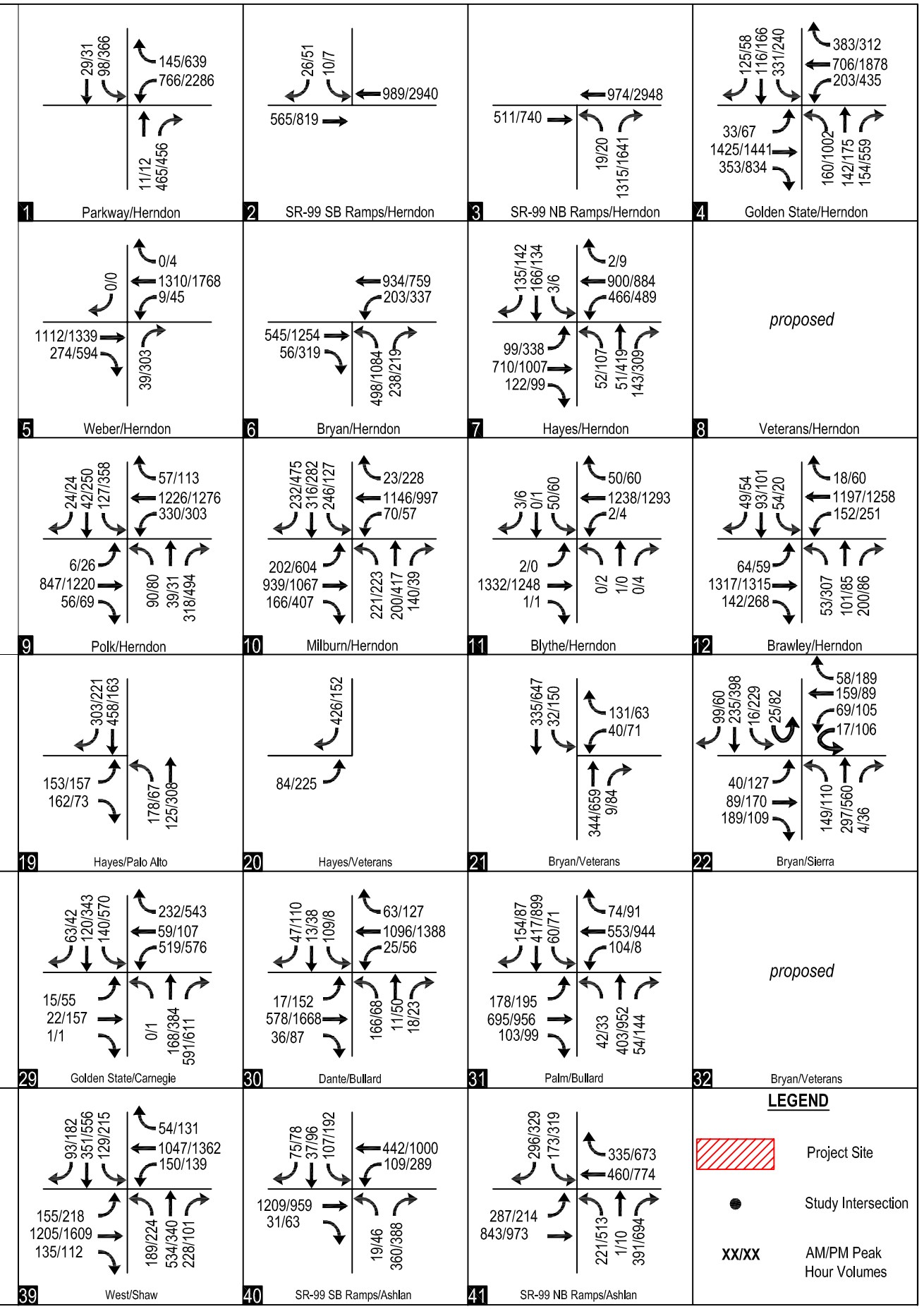


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Figure 9-1
Existing + Phases 1, 2, 3, 4 and 5 Weekday AM and PM Peak Hour Traffic Volumes

Table 9-1 - Existing plus Phases 1,2,3,4, & 5 Weekday AM and PM Peak Hour LOS Summary

		Existing				Existing + Project Phases 1-5			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	unsignalized	>50	F	47.0	E	>50	F	>50	F
2 99 SB Ramps/Herndon	unsignalized	25.4	D	17.1	C	>50	F	>50	F
3 99 NB Ramps/Herndon	unsignalized	42.8	E	>50	F	>50	F	>50	F
4 Golden State/Herndon	signal	29.4	C	34.1	C	>80	F	>80	F
5 Weber/Herndon	unsignalized	10.3	B	11.0	B	13.9	B	>50	F
6 Bryan/Herndon	signal	14.6	B	13.5	B	36.2	D	>80	F
7 Hayes/Herndon	signal	28.2	C	23.6	C	35.1	D	35.2	D
8 Veterans/Herndon	--	--	--	--	--	--	--	--	--
9 Polk/Herndon	signal	24.2	C	34.5	C	23.5	C	58.4	E
10 Milburn/Herndon	signal	32.6	C	24.4	C	27.4	C	28.9	C
11 Blythe/Herndon	signal	15.9	B	15.9	B	17.9	B	14.9	B
12 Brawley/Herndon	signal	30.1	C	40.6	D	23.9	C	48.4	D
13 Marks/Herndon	signal	68.7	E	36.6	D	39.3	D	40.5	D
14 West/Herndon	signal	48.5	D	52.6	D	39.5	D	33.5	C
15 Palm/Herndon	signal	43.1	D	>80	F	47.1	D	>80	F
16 Blackstone/Herndon	signal	24.4	C	29.5	C	27.1	C	32.2	C
17 Grantland/Parkway	unsignalized	19.0	C	11.9	B	>50	F	>50	F
18 Bryan/Palo Alto	signal	12.8	B	8.8	A	23.0	C	45.1	D
19 Hayes/Palo Alto	unsignalized	18.3	C	8.0	A	21.0	C	10.1	B
20 Veterans/Hayes	unsignalized	--	--	--	--	9.4	A	8.8	A
21 Veterans/Bryan	unsignalized	--	--	--	--	11.4	B	58.2	E
22 Bryan/Sierra	signal	--	--	--	--	15.0	B	26.4	C
23 Polk/Sierra	unsignalized	11.1	B	11.0	B	19.9	C	>50	F
24 Golden State/Veterans	--	--	--	--	--	--	--	--	--
25 Grantland/Bullard	unsignalized	17.4	C	14.4	B	19.9	C	28.3	D
26 99 NB Ramps/Veterans	--	--	--	--	--	--	--	--	--
27 99 SB Ramps/Veterans	--	--	--	--	--	--	--	--	--
28 Carnegie/Bullard	unsignalized	40.1	E	>50	F	>50	F	>50	F
29 Golden State/Carnegie	unsignalized	45.9	E	23.3	C	>50	F	>50	F
30 Dante/Bullard	unsignalized	10.9	B	10.6	B	>50	F	>50	F
31 Palm/Bullard	signal	37.7	D	43.9	D	30.6	C	59.7	E
32 Veterans/Bryan	--	--	--	--	--	--	--	--	--
33 Grantland/Barstow	unsignalized	12.1	B	10.3	B	10.4	B	41.0	E
34 99 SB Ramps/Shaw	signal	42.2	D	27.5	C	28.9	C	45.6	D
35 99 NB Ramps/Shaw	signal	17.2	B	18.7	B	15.2	B	17.9	B
36 Golden State/Shaw	signal	38.3	D	>80	F	28.4	C	66.8	E
37 Brawley/Shaw	signal	24.1	C	38.6	D	18.3	B	62.4	E
38 Marks/Shaw	signal	26.0	C	38.9	D	20.3	C	44.4	D
39 West/Shaw	signal	26.8	C	33.5	C	19.4	B	29.6	C
40 99 SB Ramps/Ashlan	signal	22.1	C	22.0	C	30.3	C	34.3	C
41 99 NB Ramps/Ashlan	signal	38.3	D	61.8	E	29.2	C	71.8	E

Notes:

XXX Denotes delay that exceeds thresholds

XXX Denotes significant project impact

- Palm Avenue/Bullard Avenue (SBL and EBL in both peak hours)
- SR 99 southbound ramps/Shaw Avenue (NBR in p.m.; WBL in both peak hours)
- SR 99 northbound ramps/Shaw Avenue (SBR in p.m.)
- Golden State Boulevard/Shaw Avenue (NBR and SBL in p.m.)
- Brawley Avenue/Shaw Avenue (SBL in p.m.)
- Marks Avenue/Shaw Avenue (SBR in both peak hours)
- SR 99 southbound ramps/Ashlan Avenue (NBR in a.m.)
- SR 99 northbound ramps/Ashlan Avenue (NBL and WBR in p.m.)

Roadway Level of Service Analysis

Table 9-3 presents the results of the Existing plus Master Plan (Phases 1, 2, 3, 4, and 5) roadway level of service analysis. In addition, the table provides a comparison of the Existing baseline and Existing plus Master Plan roadway levels of service. The addition of the Master Plan (Phases 1 through 5) trips to the following roadway segments would be considered a significant impact since the LOS changes from satisfactory conditions (LOS D or better) in existing baseline condition to unsatisfactory (i.e. LOS E or F) levels with the addition of project traffic:

- Herndon Avenue: Parkway Drive to SR 99 southbound off-ramp (LOS D to F westbound a.m.; LOS C to E eastbound, and LOS D to F westbound in p.m.)
- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (LOS D to F westbound a.m.; LOS C to E eastbound, and LOS C to F westbound in p.m.)
- Herndon Avenue: SR 99 northbound off-ramp to Golden State Boulevard (LOS D to F both directions in a.m.; LOS D to F eastbound, and LOS C to F westbound in p.m.)
- Herndon Avenue: Golden State Boulevard to Secondary Driveway, previously Weber Avenue (LOS C to F eastbound in a.m.; LOS C to F both directions in p.m.)
- Herndon Avenue: Polk Avenue to Milburn Avenue (LOS C to F eastbound in p.m.)
- Herndon Avenue: Brawley Avenue to Marks Avenue (LOS E to F westbound in p.m.)
- Herndon Avenue: West Avenue to Palm Avenue (LOS E to F westbound in p.m.)
- Parkway Drive: Herndon Avenue to Grantland Avenue (LOS D to F westbound in both peak hours)
- Bryan Avenue: Veterans Boulevard to Sierra Avenue (new roadway segment; LOS E southbound in p.m.)
- Bryan Avenue: Sierra Avenue to Carnegie Avenue (LOS C to E southbound in p.m.)
- Bryan Avenue: Carnegie Avenue to Dante Avenue (LOS C to F southbound in p.m.)
- Hayes Avenue: Herndon Avenue to Palo Alto Avenue (LOS C to E southbound in a.m.; LOS C to F northbound in p.m.)
- Hayes Avenue: Palo Alto Avenue to Veterans Boulevard (LOS C to F northbound in p.m.)
- Sierra Avenue: Bryan Avenue to Polk Avenue (LOS C to F westbound in a.m.; LOS C to F both directions in p.m.)

- Golden State Boulevard: Herndon Avenue to Veterans Boulevard (LOS C to F both directions in p.m.)
- Golden State Boulevard: Veterans Boulevard to Carnegie Avenue (LOS C to F both directions in p.m.)
- Golden State Boulevard: Carnegie Avenue to Shaw Avenue (LOS D to F northbound, and LOS C to F southbound in p.m.)
- Golden State Boulevard: Shaw Avenue to Ashlan Avenue (LOS D to F southbound in p.m.)
- Shaw Avenue: west of SR 99 southbound ramps (LOS D to F eastbound in p.m.)
- Shaw Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS D to E westbound in p.m.)
- Shaw Avenue: SR 99 northbound ramps to Golden State Boulevard (LOS D to E westbound in p.m.)
- Shaw Avenue: Brawley Avenue to Marks Avenue (LOS D to E eastbound in p.m.)
- Dante Avenue: Polk Avenue to Bullard Avenue (LOS C to F northbound p.m.)
- Carnegie Avenue: Golden State Boulevard to Bullard Avenue (LOS C to E eastbound, and LOS D to F westbound in a.m.; LOS D to F eastbound, and LOS C to F westbound in p.m.)

Freeway Level of Service Analyses

Existing plus Master Plan (Phases 1, 2, 3, 4, and 5) freeway segment traffic volume forecasts were post-processed by DKS using the existing AADT obtained from the Caltrans Traffic and Vehicle Data Systems Unit webpage. The difference between the future model volume and the existing model volume was added to the existing count to calculate the future analysis volume.

Mainline Levels of Service

Table 9-4 provides the Existing plus Master Plan freeway level of service summary. As this table indicates, in the Existing plus Master Plan (Phases 1 through 5) condition, addition of Phases 1 through 5 to the existing freeway segments would create significant impacts to the following freeway segments:

- SR 99 northbound in the a.m. peak hour: Herndon Avenue to Dakota Avenue
- SR 99 southbound in the a.m. peak hour: Avenue 7 to Herndon Avenue
- SR 99 southbound in the p.m. peak hour: Herndon Avenue to Shaw Avenue

Weaving Section Levels of Service

The SR 99 mainline and ramp entry and exit volumes for the Existing plus Master Plan scenario were analyzed using Figure 504.7A from the HDM. Results from this analysis are shown in Table 9-5. In addition, the table also shows a comparison with the existing baseline scenario, as well as indicates the LOS for mitigation measures (if needed). Detailed calculations on the Leisch nomographs are provided in Appendix F.

As shown in the table, addition of the Master Plan to SR 99 would create new significant impacts at the following weaving sections:

- SR 99 northbound: Shaw Avenue to Herndon Avenue (LOS C to E in a.m.; LOS D to F in p.m.)
- SR 99 southbound: Herndon Avenue to Shaw Avenue (LOS C to D in a.m.; LOS C to F in p.m.)

Table 9-2 - Existing plus Project Phases 1,2, 3, 4, & 5 Intersection Queuing Analysis Summary

Signalized Intersection		Storage & 95th Percentile Queue Lengths (ft)							
		NBL	NBR	SBL	SBR	EBL	EBR	WBL	WBR
2 99 SB Ramps/Herndon	Storage Length[1]	--	--	1,400	60	--	--	--	--
	AM Queue[1]	--	--	25	16	--	--	--	--
	PM Queue[1]	--	--	>1400	>1400	--	--	--	--
3 99 NB Ramps/Herndon	Storage Length[1]	1,400	--	--	--	--	--	--	--
	AM Queue[1]	>1400	--	--	--	--	--	--	--
	PM Queue[1]	>1400	--	--	--	--	--	--	--
4 Golden State/Herndon	Storage Length[1]	185	50	260	150	100	80	80	480
	AM Queue[1]	203	156	533	53	83	0	365	68
	PM Queue[1]	1,677	732	328	81	170	0	656	52
6 Bryan/Herndon	Storage Length[1]	1,710	65	--	--	--	165	165	--
	AM Queue[1]	322	38	--	--	--	78	184	--
	PM Queue[1]	1,479	100	--	--	--	95	578	--
7 Hayes/Herndon	Storage Length[1]	140	--	100	--	350	250	250	125
	AM Queue[1]	36	--	5	--	109	44	456	4
	PM Queue[1]	12	--	6	--	243	14	129	11
9 Polk/Herndon	Storage Length[1]	140	--	200	160	225	100	250	100
	AM Queue[1]	41	--	64	16	7	23	128	26
	PM Queue[1]	58	--	251	20	25	37	211	69
10 Milburn/Herndon	Storage Length[1]	225	100	230	100	230	135	230	140
	AM Queue[1]	100	34	114	67	75	36	31	12
	PM Queue[1]	122	23	58	213	157	2	23	183
11 Blythe/Herndon	Storage Length[1]	235	235	120	0	0	140	220	140
	AM Queue[1]	0	0	29	0	0	3	3	20
	PM Queue[1]	3	0	34	10	0	1	5	17
12 Brawley/Herndon	Storage Length[1]	105	75	80	80	290	0	310	--
	AM Queue[1]	53	63	53	26	39	0	172	--
	PM Queue[1]	403	38	30	31	82	0	346	--
13 Marks/Herndon	Storage Length[1]	245	125	160	160	145	50	280	190
	AM Queue[1]	70	151	127	48	59	31	139	82
	PM Queue[1]	82	88	134	214	121	80	272	156
14 West/Herndon	Storage Length[1]	175	65	185	350	260	200	275	140
	AM Queue[1]	48	230	276	27	39	44	89	50
	PM Queue[1]	85	76	223	85	67	35	188	77
15 Palm/Herndon	Storage Length[1]	145	280	250	230	245	190	210	145
	AM Queue[1]	232	46	99	490	339	35	171	204
	PM Queue[1]	397	31	213	963	485	43	81	125
16 Blackstone/Herndon	Storage Length[1]	250	110	240	90	250	160	250	100
	AM Queue[1]	26	61	105	38	112	32	46	58
	PM Queue[1]	67	30	125	87	32	110	76	64
17 Grantland/Parkway	Storage Length[1]	420	80	--	--	--	--	--	--
	AM Queue[1]	801	20	--	--	--	--	--	--
	PM Queue[1]	>420	12	--	--	--	--	--	--
18 Bryan/Palo Alto	Storage Length[1]	250	--	250	150	150	--	--	150
	AM Queue[1]	71	--	282	26	100	--	--	67
	PM Queue[1]	333	--	126	50	393	--	--	37
22 Bryan/Sierra	Storage Length[1]	150	150	150	150	150	150	150	150
	AM Queue[1]	82	6	40	21	32	43	65	17
	PM Queue[1]	93	23	300	18	105	39	228	36
25 Grantland/Bullard	Storage Length[1]	250	--	250	--	250	100	100	100
	AM Queue[1]	1	--	4	--	7	1	0	29
	PM Queue[1]	2	--	6	--	6	5	27	9
31 Palm/Bullard	Storage Length[1]	120	55	90	70	150	150	140	--
	AM Queue[1]	68	29	100	48	152	26	137	--
	PM Queue[1]	83	68	166	47	284	43	25	--
34 99 SB Ramps/Shaw	Storage Length[1]	1,330	50	--	--	--	200	110	--
	AM Queue[1]	87	70	--	--	--	113	483	--
	PM Queue[1]	185	281	--	--	--	49	565	--
35 99 NB Ramps/Shaw	Storage Length[1]	--	--	1,300	50	120	--	--	230
	AM Queue[1]	--	--	77	47	73	--	--	31
	PM Queue[1]	--	--	159	88	50	--	--	36
36 Golden State/Shaw	Storage Length[1]	140	140	165	165	180	180	190	190
	AM Queue[1]	24	89	179	9	55	21	214	38
	PM Queue[1]	79	683	479	27	27	39	160	71
37 Brawley/Shaw	Storage Length[1]	260	100	220	130	220	130	200	120
	AM Queue[1]	55	22	57	34	38	23	10	3
	PM Queue[1]	175	82	390	60	102	20	194	98
38 Marks/Shaw	Storage Length[1]	190	105	240	270	235	135	275	155
	AM Queue[1]	78	124	109	275	46	1	34	0
	PM Queue[1]	211	76	117	332	249	78	113	59
39 West/Shaw	Storage Length[1]	240	75	185	115	240	155	210	125
	AM Queue[1]	82	63	50	29	44	1	71	22
	PM Queue[1]	111	35	106	69	96	33	79	42
40 99 SB Ramps/Ashlan	Storage Length[1]	100	100	360	110	--	100	575	--
	AM Queue[1]	27	220	142	0	--	21	144	--
	PM Queue[1]	58	124	245	0	--	43	324	--
41 99 NB Ramps/Ashlan	Storage Length[1]	240	520	210	210	320	--	--	85
	AM Queue[1]	151	108	73	65	295	--	--	84
	PM Queue[1]	471	455	217	179	320	--	--	574

Notes:
[1] Storage length determined by field measurement and review of scaled aerial photography. AM & PM queue lengths determined in *Synchro*.
XXX-Denotes 95th percentile queue that would exceed the lane's storage capacity.

Table 9-3 - Existing plus Project Master Plan (Phases 1,2,3,4, & 5) Roadway Segment Level of Service Summary

		Existing plus Project Phases 1-5											
		AM Peak Hour						PM Peak Hour					
Roadway Segment	No. of Lanes	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]
Herndon Avenue													
Parkway to SR 99 SB Ramps	1	565	C		1,015	F	0.26	822	E	0.72	2,991	F	2.77
SR 99 SB Ramps to SR 99 NB Ramps	1	575	C		993	F		826	E		2,968	F	
SR 99 NB Ramps to Golden State	1	1,826	F	1.38	991	F	0.29	2,381	F	1.88	2,948	F	2.85
Golden State to Weber	2	1,910	F	0.62	1,320	C		2,244	F	0.64	2,625	F	1.04
Weber to Bryan	2	1,899	F	0.62	1,326	C		1,933	F	0.47	1,843	F	0.59
Bryan to Hayes	2	945	C		1,105	C		1,473	D		1,096	C	
Hayes to Veterans	2	908	C		1,368	D		1,322	C		1,382	D	
Veterans to Polk	2	909	C		1,359	C		1,321	C		1,382	D	
Polk to Milburn	2	1,307	C		1,613	D		2,078	F	0.53	1,695	D	
Milburn to Blythe	3	1,335	C		1,241	C		1,249	C		1,301	C	
Blythe to Brawley	2	1,523	C		1,299	C		1,642	C		1,619	C	
Brawley to Marks	2	1,794	E	0.05	1,399	D		1,550	D		1,919	F	0.10
Marks to West	3	2,228	D		1,785	C		1,700	C		2,507	D	
West to Palm	3	2,517	D		1,923	C		1,907	C		2,793	F	0.08
Palm to Blackstone	3	2,077	C		1,616	C		1,691	C		2,005	C	
e/o Blackstone	3	1,931	C		1,749	C		1,667	C		1,809	C	
Parkway Drive													
Herndon and Grantland	1	519	D		885	F	0.26	494	D		2,354	F	2.26
Bryan Avenue													
Herndon to Palo Alto	2	833	C		1,192	D		1,329	D		692	C	
Palo Alto to Veterans	2	995	C		787	C		774	C		590	C	
Veterans to Sierra	2	760	C		805	C		1,708	E	0.99	1,548	D	
Sierra and Carnegie	2	1,522	D		820	C		1,543	D		1,707	E	0.94
Carnegie to Dante	2	1,236	D		512	C		1,482	D		1,763	F	0.69
Palo Alto Avenue													
Bryan to Hayes	1	319	C		416	C		230	C		288	C	
Hayes Avenue													
Herndon to Palo Alto	1	278	C		761	E	0.61	867	F	0.96	754	D	
Palo Alto to Veterans	1	303	C		620	D		937	F	1.09	673	D	
Veterans Avenue													
Hayes to Herndon	--	--	--		--	--		--	--		--	--	
Bryan to Hayes	1	88	C		435	C		225	C		152	C	
Golden State to Bryan	--	--	--		--	--		--	--		--	--	
SR 99 NB Ramps to GS	--	--	--		--	--		--	--		--	--	
SR 99 SB Ramps to SR 99 NB Ramps	--	--	--		--	--		--	--		--	--	
Bryan(2) to SR 99 SB Ramps	--	--	--		--	--		--	--		--	--	
Sierra Avenue													
Bryan to Polk	1	375	C		1,865	F	2.11	1,140	F	1.30	2,753	F	3.24
Polk Avenue													
Herndon to Sierra	1	447	C		428	C		605	D		554	D	
Golden State Boulevard													
Herndon to Veterans	1	456	C		672	D		1,736	F	1.82	1,312	F	1.32
Veterans to Carnegie	1	415	C		323	C		982	F	0.99	955	F	0.92
Carnegie to Shaw	1	759	D		640	D		1,000	F	0.38	887	F	0.70
Shaw to Ashlan	1	742	D		615	D		1,219	F	-0.01	868	F	0.35
Shaw Avenue													
w/o SR 99 SB Ramps	1	966	F	0.08	753	D		959	F	0.27	1,060	F	0.00
SR 99 SB Ramps to SR 99 NB Ramps	1-2	1,007	F		1,175	D		1,355	F		1,626	E	
SR 99 NB Ramps to Golden State	2	1,021	C		1,165	D		1,307	D		1,714	E	0.15
Golden State to Brawley	3	1,332	C		1,415	C		2,289	D		2,260	D	
Brawley to Marks	3	1,419	C		1,590	C		2,556	E	0.28	2,312	D	
Marks to West	3	1,776	D		1,329	C		2,236	D		1,784	D	
e/o West	3	1,562	C		1,251	C		1,925	D		1,632	C	
Grantland Avenue													
Parkway to Bullard	1	631	D		192	C		505	D		638	D	
Bullard to Barstow	1	437	C		134	C		434	C		634	D	
Palm Avenue													
Herndon to Bullard	2	1,137	D		1,163	D		1,409	D		1,242	D	
Dante Avenue													
Polk to Bullard	1	198	C		372	C		824	F	0.85	528	D	
Carnegie Avenue													
Golden State to Bullard	1	790	E	0.67	812	F	0.32	1,396	F	0.90	1,279	F	1.24
Ashlan Avenue													
SR 99 SB Ramps to SR 99 NB Ramps	2	1,676	E		977	C		1,539	D		1,616	D	

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* , for State Two-Way Arterials (Class II) & Non-State Roadways.

[2] V/C based on LOS F capacities in the Florida Tables

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact (v/c ≥ 0.15 per the City of Fresno General Plan Transportation Policy B-3)

Table 9-4 – Existing plus Master Plan (Phases 1, 2, 3, 4, and 5) Freeway Segment Level of Service Summary

Freeway	From	To	Density	LOS
Northbound AM				
SR 99	Herndon Avenue	Avenue 7	21.4	C
	(future) Veterans Boulevard	Herndon Avenue	28.7	D
	Shaw Avenue	(future) Veterans Boulevard		
	Ashlan Avenue	Shaw Avenue	30.8	D
	Dakota Avenue	Ashlan Avenue	23.7	D
Southbound AM				
SR 99	Avenue 7	Herndon Avenue	26.3	D
	Herndon Avenue	(future) Veterans Boulevard	24.1	C
	(future) Veterans Boulevard	Shaw Avenue		
	Shaw Avenue	Ashlan Avenue	25.6	C
	Ashlan Avenue	Dakota Avenue	22.3	C
Northbound PM				
SR 99	Herndon Avenue	Avenue 7	36.7	E
	(future) Veterans Boulevard	Herndon Avenue	42.6	E
	Shaw Avenue	(future) Veterans Boulevard		
	Ashlan Avenue	Shaw Avenue	37.5	E
	Dakota Avenue	Ashlan Avenue	29.6	D
Southbound PM				
SR 99	Avenue 7	Herndon Avenue	28.6	D
	Herndon Avenue	(future) Veterans Boulevard	43.4	E
	(future) Veterans Boulevard	Shaw Avenue		
	Shaw Avenue	Ashlan Avenue	43.8	E
	Ashlan Avenue	Dakota Avenue	29.1	D

Table 9-5 – Existing plus Master Plan Freeway Weaving Level of Service Summary

	Existing (baseline)			Existing + Master Plan							
		LOS			LOS without Mitigation				LOS with Mitigation		
Segment	No. of Lanes	AM	PM	No. of Lanes	AM	Significant Impact	PM	Significant Impact	No. of Lanes	AM	PM
SR 99 northbound											
Shaw Ave to Herndon Ave	2	C	D	2	E	yes	F	no	3	C	D
SR 99 southbound											
Herndon Ave to Shaw Ave	2	C	C	2	D	yes	F	yes	4	B	C

At-Grade Railroad Crossing Analysis

Using the HCM "Back of Queue" queuing methodology to analyze the vehicular queuing, Table 9-6 presents the at-grade railroad crossing analysis summary for the existing plus Master Plan condition. The HCM calculation sheets are provided in Appendix H.

Table 9-6 – Existing plus Master Plan At-Grade Railroad Crossing Analysis Summary

Crossing Location	Peak Hour [1]	Rail Crossing Time (seconds) [2]	Vehicular Queue (feet) [3]		Impact to Adjacent Major Intersection [4]				Significant Project Impact?	
			e/o tracks	w/o tracks	e/o tracks		w/o tracks		e/o tracks	w/o tracks
Herndon Ave	AM	205	1,393	2,733	No	1,705 ft to Bryan Ave	Yes	725 ft to SR 99 NB ramps	No	Yes
	PM	156	4,598	2,956	Yes		Yes		Yes	No
Carnegie Ave	AM	243	1,367	1,585	Yes	720 ft to Bullard Ave	Yes	75 ft to Golden State Blvd	No	No
	PM	110	937	1,578	Yes		Yes		Yes	No
Shaw Ave	AM	300	1,971	2,136	Yes	1,560 ft to Blythe Ave	No	2,600 ft to SR 99 NB ramps	No	Yes
	PM	235	3,884	3,822	Yes		Yes		No	No

[1] - Based on observed train crossings in 2007 within the AM and PM peak commute hours.

[2] - Based on time that train crossing gate arms go down, to time gate arms go up.

[3] - Vehicle queue determined using *Highway Capacity Manual* (HCM) "Back of Queue Equation".

[4] – Impact based on whether vehicular queue would extend to an adjacent major intersection. For Herndon and Shaw Avenues the major intersection west of tracks will be the northbound ramp intersections with SR 99, rather than the closely spaced intersections with Golden State Blvd/Herndon Ave (125 ft) and Golden State Blvd/Shaw Ave (50 ft).

According to the table, addition of Master Plan traffic would cause new queuing impacts (i.e., new impacts to adjacent major intersections from the baseline condition) at the following crossings:

- Herndon Avenue crossing (SR 99 northbound off-ramp/Herndon Avenue in the a.m. peak hour; Bryan Avenue/Herndon Avenue in the p.m. peak hour)
- Carnegie Avenue crossing (Bullard Avenue/Carnegie Avenue in the p.m. peak hour)
- Shaw Avenue crossing (SR 99 northbound ramps/Shaw Avenue in the a.m. peak hour)

On-site Circulation, Access, and Parking Impacts

A detailed site plan has been developed for Phase 1 of the Master Plan. The site plan for Phase 1 provides details of: primary and secondary project access; internal roadway circulation, turn storage bay lengths, parking facilities, and location(s) of other planned transportation facilities such as bus turnouts and pedestrian sidewalks/circulation. A detailed analysis of Phase 1 on-site circulation, access, and parking impacts is provided in the Year 2010 plus Phase 1 project impacts section. For all other Phases (2 through 5), a detailed site plan and Focused Traffic Impact Study will be required at the time of their respective entitlement.

Mitigation Measures

Significant Impacts at Intersections

Based on the Existing plus Master Plan traffic analysis discussed above, the following study intersections would continue to operate with an unsatisfactory LOS in the weekday a.m. and/or p.m. peak hour with the addition of the proposed Master Plan traffic. Therefore, the proposed project would create a significant cumulative impact (LOS E to LOS F; or additional delay at LOS F) at these study intersections. The following are improvements required to mitigate these impacts:

TRAF-1 Prior to obtaining a Certificate of Occupancy, the Master Plan shall construct the traffic improvements listed below. These improvements are the minimum improvements needed to mitigate significant Master Plan traffic impacts back to existing baseline conditions or better.

Parkway Drive/Herndon Avenue: Install a traffic signal (ITS interconnect with a 2070 controller per the PW ITS Standards and an ITS camera for operation monitoring) and construct the intersection to the ultimate lane configurations of dual left-turn lanes and a right-turn lane on the Herndon Avenue approach, along with removing the southbound SR 99 off-ramp to Herndon Avenue – Grantland Parkway; construct a second northbound through lane; and a dedicated southbound left turn lane. The intersection shall have loop detection that is not bundled so the intersection can count traffic volumes to be utilized in the ITS program. The installation of traffic signal at this intersection is included in the TSMI fee and can be credited/reimbursed.

SR 99 southbound off-ramp/Herndon Avenue: Remove the SR 99 southbound off-ramp to Grantland Avenue as part of the signalization of Parkway Drive and Herndon Avenue.

SR 99 northbound off-ramp/Herndon Avenue: Widen the northbound off-ramp at SR 99/Herndon Avenue to include two off-ramp lanes after the single off-ramp lane exit, and construct a traffic signal (ITS interconnect with a 2070 controller per the PW ITS Standards and an ITS camera for operation monitoring). The intersection shall have loop detection that is not bundled so the intersection can count traffic volumes to be utilized in the ITS program. At its intersection with Herndon Avenue, this off-ramp shall be widened to three lanes to provide dual-right-turn lanes and a left-turn lane. The length of the additional right-turn lane shall be calculated based on the 95th percentile queue in 2025 (510 feet). This traffic signal and off-ramp widening is included in TSMI Fee and can be credited/reimbursed.

Golden State Boulevard/Herndon Avenue: Widen the northbound approach and construct a second (dual) left turn lane and a dedicated northbound right turn lane with overlap phasing; widen the southbound approach and construct a second (dual) left turn lane and a second through lane; widen the eastbound approach and construct a second (dual) left turn lane, a second and third through lane, and a dedicated right turn lane with overlap phasing; widen the westbound approach and construct a second (dual) left turn lane and a second through lane. This intersection is included in the TSMI and FMSI fees and can be credited/reimbursed. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Based on the queuing analysis, with other mitigation measures implemented, the northbound, southbound, and eastbound left-turn lanes would still require dual left turn lanes in excess of 250 feet.

Weber Avenue – Secondary Phase 1 Access/Herndon Avenue: Widen the eastbound approach and construct a third through lane and return lane. This intersection will also be designed to be a limited access, unsignalized intersection with eastbound right-turn inbound-only access, northbound right-turn outbound-only access, and westbound left-turn inbound-only access. Vehicles that would be delayed would have other signalized and unsignalized access locations on Bryan Avenue to use.

Bryan Avenue/Herndon Avenue: Modify the existing Bryan Avenue/Herndon Avenue traffic signal with ITS interconnect with a 2070 controller per the PW ITS Standards and an ITS camera for operation monitoring; and construct the intersection to provide a second (dual) northbound left turn lane and a second (dual) westbound left turn lane. Appropriate transitions for design speeds shall be designed and constructed. The intersection shall have loop detection that is not bundled so the intersection can count traffic volumes to be utilized in the ITS program. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Based on the queuing analysis, with other mitigation measures implemented, the northbound and westbound left-turn lanes would still require a dual left turn lanes in excess of 250 feet.

Polk Avenue/Herndon Avenue: Widen the northbound approach and construct a dedicated right turn lane. Polk Avenue is not on the City FMSI fee program.

Palm Avenue/Herndon Avenue: Widen and construct a third through lane on the northbound and southbound approaches. In addition, conduct a traffic signal modification to provide right turn overlap phasing for the southbound right turn movement. These measures are required to be constructed to mitigate this significant impact. This intersection is not included in the TSMI Fee.

Grantland Avenue/Parkway Drive: Install a traffic signal (ITS interconnect with a 2070 controller per the PW ITS Standards and an ITS camera for operation monitoring) and construct the intersection to the ultimate lane configurations of dual left-turn lanes and a right-turn lane on Grantland Avenue approach. The Parkway Drive eastbound approach lane configurations shall be two through lanes and a right-turn lane. The intersection shall have loop detection that is not bundled so the intersection can count traffic volumes to be utilized in the ITS program. As part of this traffic signal installation the southbound SR 99 on-ramp shall have an additional on-ramp lane (total of two lanes) along with ramp metering installed. The FMSI fee assumes that a left-turn pocket is 250 feet. Based on the queuing analysis, a 250 foot left-turn pocket would be adequate at all approaches. This traffic signal is included in the TSMI Fee and can be credited/reimbursed.

Bryan Avenue/Veterans Boulevard: This is a new intersection that will be required to be constructed with the Master Plan. This intersection will require a new traffic signal and the following geometrics: two through lanes and a right turn lane on the northbound approach; one left turn lane and two through lanes on the southbound approach; and a left turn- and right turn lane on the westbound approach.

Polk Avenue/Sierra Avenue: The installation of a traffic signal at this location is required to mitigate the significant impact. This intersection is not on the TSMI fee list.

Bullard Avenue/Carnegie Avenue: The installation of a traffic signal at this intersection is required to mitigate this significant impact. In addition, the following geometric improvements are required: widen the northbound approach and construct a second (dual) left turn lane; widen the southbound approach and construct a second through lane and a dedicated right turn lane; and widen the eastbound approach and construct a shared left- and right turn lane. This intersection is not included in the TSMI Fee.

Golden State Boulevard/Carnegie Avenue: The installation of a traffic signal at this intersection is required to mitigate this significant impact. In addition, the following geometric improvements are required: widen the southbound approach and construct a dual left turn lane and a second through lane; widen the westbound approach and construct a dual left turn lane and a dedicated right turn lane; and provide overlap signal phasing on the northbound approach. This intersection is not included in the TSMI Fee.

Dante Avenue/Bullard Avenue: The installation of a traffic signal at this location is required to mitigate the significant impact. This intersection is not on the TSMI fee list.

Palm Avenue/Bullard Avenue: Convert the eastbound right turn lane to a shared through plus right turn lane.

Grantland Avenue/Barstow Avenue: This intersection will be required to be converted from a two-way stop controlled intersection to an all-way stop controlled intersection to mitigate the significant project impact. Although this intersection is included in the TSMI Fee, the installation of a traffic signal can be credited/reimbursed. Since a signal is not warranted, this improvement is not reimbursable through the TSMI fee.

SR 99 southbound ramps/Shaw Avenue: Conduct a signal modification to provide protected/permissive phasing for the westbound left turn lane. The Master Plan would contribute its fair share (Combined Formula as provided in the Interim Agreement between the City and Caltrans) toward this improvement.

Brawley Avenue/Shaw Avenue: This intersection is built-out to its ultimate General Plan standard and there is no available right-of-way for additional measures. The Master Plan would create a significant unavoidable impact at this location.

SR 99 northbound ramps/Ashlan Avenue: Widen the northbound approach and construct a second (dual) left turn lane. The Master Plan would contribute its fair share (Combined Formula as provided in the Interim Agreement between the City and Caltrans) toward this improvement.

Significant Intersection Queuing Impacts

Based on the Existing plus Master Plan traffic analysis discussed above, the following study intersections are forecast to have significant impacts to lane storage queues (addition of more than one vehicle length to a baseline queue that is over-capacity) when compared to the existing baseline condition. The following are improvements required to mitigate these impacts:

TRAF-2 Prior to obtaining a Certificate of Occupancy, the Master Plan shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study intersection queues in the Existing plus Master Plan condition:

SR 99 southbound off-ramp/Herndon Avenue: Remove the SR 99 southbound off-ramp to Grantland Avenue as part of the signalization of Parkway Drive and Herndon Avenue.

SR 99 northbound off-ramp/Herndon Avenue: The northbound off-ramp shall be widened to three lanes to provide dual-right-turn lanes and a left-turn lane. The length of the additional right-turn lane shall be calculated based on the 95th percentile queue in 2025 (510 feet). This traffic signal and off-ramp widening is included in TSMI Fee and can be credited/reimbursed.

Golden State Boulevard/Herndon Avenue: In addition to the already funded 2009 geometric improvements slated for this intersection, additional extensions of the planned turn lanes are required as follows: extend the northbound dual left turn lane by 1,495 feet to 1,680 feet; extend the northbound right turn lane by 680 feet to 730 feet; extend the southbound left turn lane by 275 feet to 535 feet; extend the eastbound left turn lane by 70 feet to 170 feet; and extend the westbound left turn lane by 575 feet to 655 feet. Since these extensions are beyond the City's standard 250 foot left turn lane (with exception to the eastbound left turn lane), this mitigation would not be reimbursable/credited under the FMSI fee.

Bryan Avenue/Herndon Avenue: Extend the northbound right turn lane by 35 feet to 100 feet; and extend the westbound left turn lane by 415 to 580 feet. The extension on the westbound approach (Herndon Avenue) would not be reimbursable/credited through the FMSI fee since the lane queue is longer than 250 feet. The extension of the northbound right turn lane is reimbursable through the FMSI fee.

Hayes Avenue/Herndon Avenue: Extend the westbound left turn lane by 205 feet to 455 feet. The extension on the westbound approach (Herndon Avenue) would not be reimbursable/credited through the FMSI fee since the lane queue is longer than 250 feet.

Milburn Avenue/Herndon Avenue: Extend the southbound right turn lane by 115 feet to 215 feet; and extend the westbound right turn lane by 45 feet to 185 feet. The extension of the northbound right turn lane is reimbursable through the FMSI fee.

Brawley Avenue/Herndon Avenue: Extend the northbound left turn lane by 300 feet to 405 feet; and extend the westbound left turn lane by 35 feet to 345 feet. These extensions would not be reimbursable/credited through the FMSI fee since the lane queue is longer than 250 feet.

Marks Avenue/Herndon Avenue: Extend the northbound right turn lane by 25 feet to 150 feet; extend the southbound right turn lane by 55 feet to 215 feet; and extend the eastbound right turn lane by 30 feet to 80 feet.

West Avenue/Herndon Avenue: Extend the northbound right turn lane by 165 feet to 230 feet; and extend the southbound left turn lane by 90 feet to 275 feet. The southbound left turn lane extension would not be reimbursable/credited through the FMSI fee since the lane queue is longer than 250 feet.

Palm Avenue/Herndon Avenue: Extend the northbound left turn lane by 255 feet to 400 feet; extend the southbound right turn lane by 735 feet to 965 feet; extend the eastbound left turn lane by 240 feet to 485 feet; and extend the westbound right turn lane by 60 feet to 205 feet. The left turn lane extensions would not be reimbursable/credited through the FMSI fee since the lane queues are longer than 250 feet.

Grantland Avenue/Parkway Drive: Extend the northbound left turn lane by 380 feet to 800 feet. This left turn lane extension would not be reimbursable/credited through the FMSI fee since the lane queue is longer than 250 feet.

Bryan Avenue/Palo Alto Avenue: Extend the northbound left turn lane by 85 feet to 335 feet; extend the southbound left turn lane by 35 feet to 285 feet; and extend the eastbound left turn lane by 245 feet to 395 feet. The left turn lane extensions would not be reimbursable/credited through the FMSI fee since the lane queues are longer than 250 feet.

Bryan Avenue/Sierra Avenue: Extend the southbound left turn lane by 150 feet to 300 feet; and extend the westbound left turn lane by 80 feet to 230 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. The westbound left turn lane extension would be reimbursable/credited towards the FMSI fee.

Palm Avenue/Bullard Avenue: Extend the southbound left turn lane by 75 feet to 165 feet; and extend the eastbound left turn lane by 135 feet to 285 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. The southbound left turn lane extension would be reimbursable/credited towards the FMSI fee.

SR 99 southbound ramps/Shaw Avenue: The southbound right turn lane would need to be extended by 230 feet to 280 feet; and the westbound left turn lane would need to be extended by 455 feet to 565 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

SR 99 northbound ramps/Shaw Avenue: The southbound right turn lane would need to be extended by 40 feet to 90 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the southbound right turn lane would be reimbursable/credited towards the FMSI fee.

Golden State Boulevard/Shaw Avenue: The northbound right turn lane would need to be extended by 545 feet to 685 feet; and the southbound left turn lane would need to be extended by 315 feet to 480 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Brawley Avenue/Shaw Avenue: The southbound left turn lane would need to be extended by 170 feet to 390 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Marks Avenue/Shaw Avenue: Extend the southbound right turn lane by 60 feet to 330 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the

left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

SR 99 southbound ramps/Ashlan Avenue: The northbound right turn lane would need to be extended by 120 feet to 220 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

SR 99 northbound ramps/Ashlan Avenue: The northbound left turn lane would need to be extended by 230 feet to 470 feet; and the westbound right turn lane would need to be extended by 490 feet to 575 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Figure 9-2 illustrates the mitigation measures needed for the significant traffic impacts created by the addition of Master Plan traffic to the existing baseline condition. Table 9-7 shows the improved levels of service with the implementation of the mitigation measures.

Significant Roadway Segment Impacts

Based on the Existing plus Master Plan traffic analysis discussed above, the following study roadway segments are forecast to have significant impacts with addition of Master Plan traffic. The following are improvements required to mitigate these impacts:

TRAF-3 Prior to obtaining a Certificate of Occupancy, the Master Plan shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study roadway segments in the Existing plus Master Plan condition:

Herndon Avenue, Parkway Drive to SR 99 southbound off-ramp: Construct this segment of Herndon Avenue to a four-lane undivided roadway. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Herndon Avenue, SR 99 southbound off-ramp to SR 99 northbound off-ramp: Based on field reconnaissance of the Herndon Avenue undercrossing of SR 99, there are no feasible measures to widen the existing bridge structure to accommodate additional capacity (lanes). Therefore, the Master Plan would create a significant unavoidable impact at this location.

Herndon Avenue, SR 99 northbound off-ramp to Golden State Boulevard: Construct this segment of Herndon Avenue to a four-lane undivided roadway. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited. Due to the constraint of the Herndon Avenue undercrossing at SR 99 at only two lanes, the segment from the northbound off-ramp to Golden State can only accommodate four-lanes. With four lanes the roadway segment is forecast to continue to operate at LOS F, therefore, the Master Plan would create a significant unavoidable impact at this location.

Herndon Avenue, east of Golden State Boulevard: Construct Herndon Avenue to six lanes with a raised landscaped median island between Golden State Boulevard and Hayes Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

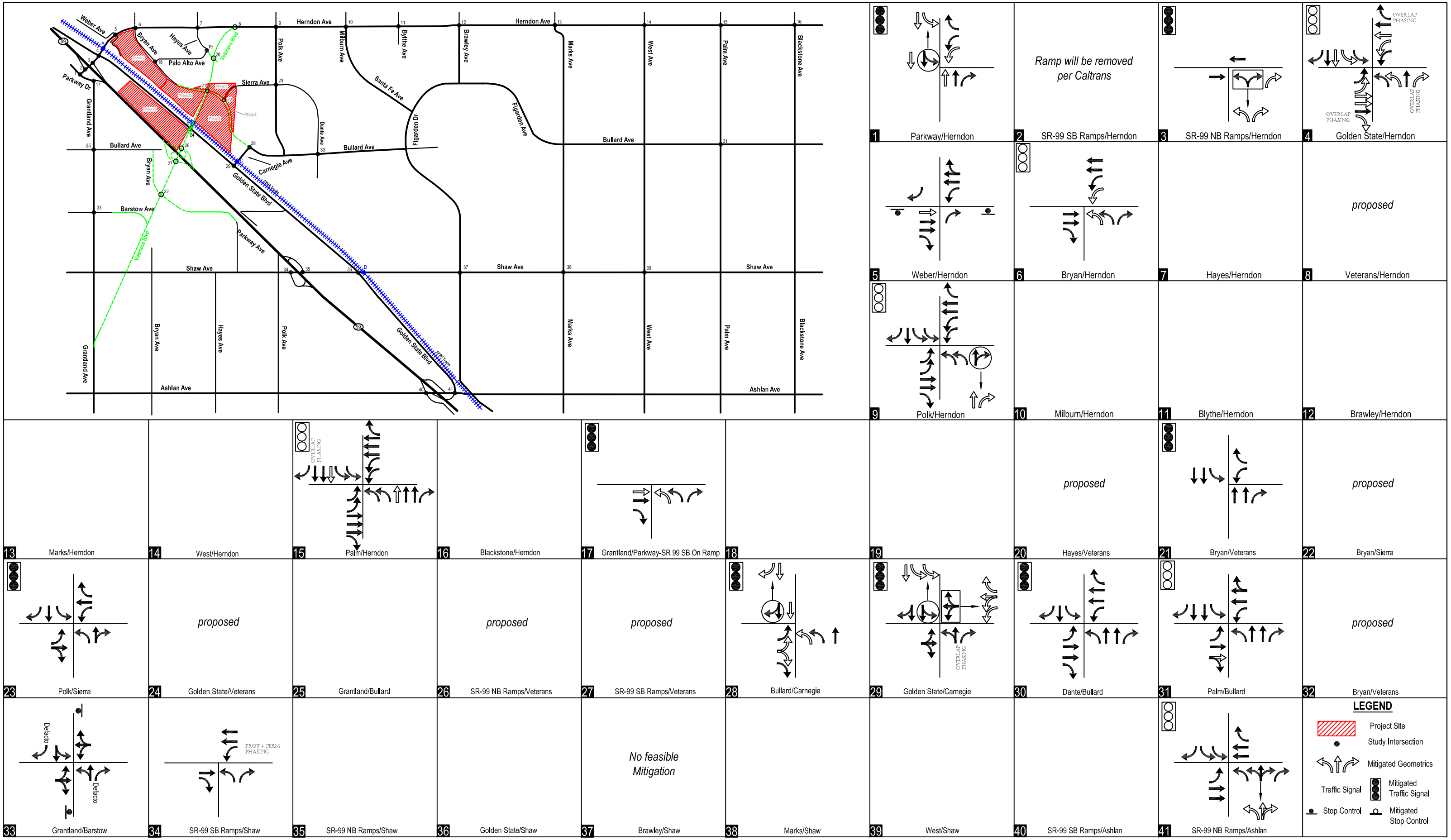

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Figure 9-2
Existing + Project (Phases 1, 2, 3, 4, and 5) Mitigation Measures

Table 9-7 - Existing plus Master Plan Intersection Levels of Service with Mitigation Measures

		Existing + Project Buildout				With Mitigation			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	*signal*	>50	F	>50	F	17.0	B	>80	F
2 99 SB Ramps/Herndon	--	>50	F	>50	F	--	--	--	--
3 99 NB Ramps/Herndon	*signal*	>50	F	>50	F	64.5	E	>80	F
4 Golden State/Herndon	signal	>80	F	>80	F	25.5	C	>80	F
5 Weber/Herndon	unsignalized	13.9	B	>50	F	11.4	B	22.0	C
6 Bryan/Herndon	signal	36.2	D	>80	F	14.6	B	38.3	D
7 Hayes/Herndon	signal	35.1	D	35.2	D				
8 Veterans/Herndon	signal	--	--	--	--				
9 Polk/Herndon	signal	23.5	C	58.4	E	23.0	C	54.6	D
10 Milburn/Herndon	signal	27.4	C	28.9	C				
11 Blythe/Herndon	signal	17.9	B	14.9	B				
12 Brawley/Herndon	signal	23.9	C	48.4	D				
13 Marks/Herndon	signal	39.3	D	40.5	D				
14 West/Herndon	signal	39.5	D	33.5	C				
15 Palm/Herndon	signal	47.1	D	>80	F	33.6	C	77.2	E
16 Blackstone/Herndon	signal	27.1	C	32.2	C				
17 Grantland/Parkway	*signal*	>50	F	>50	F	20.8	C	31.6	C
18 Bryan/Palo Alto	*signal*	23.0	C	45.1	D				
19 Hayes/Palo Alto	unsignalized	21.0	C	10.1	B				
20 Veterans/Hayes	unsignalized	9.4	A	8.8	A				
21 Veterans/Bryan	*signal*	11.4	B	58.2	E	13.8	B	9.8	A
22 Bryan/Sierra	signal	15.0	B	26.4	C				
23 Polk/Sierra	unsignalized	19.9	C	>50	F	6.9	A	15.7	B
24 Golden State/Veterans	signal	--	--	--	--				
25 Grantland/Bullard	unsignalized	19.9	C	28.3	D				
26 99 NB Ramps/Veterans	signal	--	--	--	--				
27 99 SB Ramps/Veterans	signal	--	--	--	--				
28 Carnegie/Bullard	*signal*	>50	F	>50	F	19.6	B	38.2	D
29 Golden State/Carnegie	*signal*	>50	F	>50	F	16.4	B	61.0	E
30 Dante/Bullard	*signal*	>50	F	>50	F	7.6	A	7.4	A
31 Palm/Bullard	signal	30.6	C	59.7	E	21.9	C	39.3	D
32 Veterans/Bryan	signal	--	--	--	--				
33 Grantland/Barstow	unsignalized	10.4	B	41.0	E	10.4	B	17.2	C
34 99 SB Ramps/Shaw	signal	28.9	C	45.6	D	26.2	C	40.6	D
35 99 NB Ramps/Shaw	signal	15.2	B	17.9	B				
36 Golden State/Shaw	signal	28.4	C	66.8	E				
37 Brawley/Shaw	signal	18.3	B	62.4	E	*no feasbile mitigation*			
38 Marks/Shaw	signal	20.3	C	44.4	D				
39 West/Shaw	signal	19.4	B	29.6	C				
40 99 SB Ramps/Ashlan	signal	30.3	C	34.3	C				
41 99 NB Ramps/Ashlan	signal	29.2	C	71.8	E	*no feasbile mitigation*			

Notes:

XXX Denotes delay that exceeds thresholds

XXX Denotes significant project impact

Herndon Avenue, Polk Avenue to Milburn Avenue: Construct Herndon Avenue to six lanes with a raised landscaped median island in this segment. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Herndon Avenue, Brawley Avenue to Marks Avenue: With the construction of Herndon Avenue to six lanes with a raised landscaped median island in this segment, this roadway segment is still forecast to operate with unsatisfactory LOS in both directions during the p.m. peak hour. Therefore, the project would create a significant unavoidable impact at this location however; *this segment of Herndon Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Herndon Avenue, West Avenue to Palm Avenue: This roadway segment is already built to its ultimate General Plan configuration. Therefore, the project would create a significant unavoidable impact to the eastbound direction in the p.m. peak hour at this location. However, *this segment of Herndon Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Parkway Drive, Herndon Avenue to Grantland Avenue: Construct this segment of Parkway Drive to a four-lane undivided roadway. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited. With four lanes the roadway segment is forecast to continue to operate at LOS F, therefore, the Master Plan would create a significant unavoidable impact at this location in the p.m. peak hour in the southbound direction.

Bryan Avenue, Veterans Boulevard to Sierra Avenue: This roadway segment would be built to its ultimate General Plan configuration. Therefore, the project would create a significant unavoidable impact to the northbound direction in the p.m. peak hour at this location.

Bryan Avenue, Sierra Avenue to Carnegie Avenue: This roadway segment would be built to its ultimate General Plan configuration. Therefore, the project would create a significant unavoidable impact to the southbound direction in the p.m. peak hour at this location.

Bryan Avenue, Carnegie Avenue to Dante Avenue: This roadway segment would be built to its ultimate General Plan configuration. Therefore, the project would create a significant unavoidable impact to the southbound direction in the p.m. peak hour at this location.

Hayes Avenue, Herndon Avenue to Palo Alto Avenue: This roadway segment would be built to its ultimate General Plan configuration. With the extension of Veterans Boulevard from Herndon Avenue to Bryan Avenue, the significant impact would be reduced. Under the existing condition, Veterans Boulevard only exists between Hayes Avenue and Wathen Avenue.

Hayes Avenue, Palo Alto Avenue to Veterans Boulevard: This roadway segment would be built to its ultimate General Plan configuration. With the extension of Veterans Boulevard from Herndon Avenue to Bryan Avenue, the significant impact would be reduced. Under the existing condition, Veterans Boulevard only exists between Hayes Avenue and Wathen Avenue.

Sierra Avenue, Bryan Avenue to Polk Avenue: This is a two-lane residential collector roadway with limited capacity. Therefore, the project would create a significant unavoidable impact to the southbound direction at this location.

Golden State Boulevard, south of Herndon Avenue: Construct a second southbound through lane on this roadway segment. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited. With two lanes in the northbound direction, this roadway segment is forecast to continue to operate at LOS F. Therefore, the project would create a significant unavoidable impact to the northbound direction at this location in the p.m. peak hour.

Golden State Boulevard, north of Carnegie Avenue: Construct a second northbound and southbound through lane on this roadway segment. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Golden State Boulevard, Carnegie Avenue to Shaw Avenue: Construct a second northbound and southbound through lane on this roadway segment. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Golden State Boulevard, Shaw Avenue to Ashlan Avenue: Construct a second northbound and southbound through lane on this roadway segment. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Shaw Avenue, west of SR 99 southbound ramps: Construct a second eastbound and westbound through lane on this roadway segment. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Shaw Avenue, SR 99 southbound ramps to SR 99 northbound ramps: Based on field reconnaissance of the Shaw Avenue overcrossing of SR 99, there are no feasible measures to widen the existing bridge structure to accommodate additional capacity (lanes). Therefore, the Master Plan would create a significant unavoidable impact at this location. However, *this segment of Shaw Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Shaw Avenue, SR 99 northbound ramps to Golden State Boulevard: Construct a third eastbound and westbound through lane on this roadway segment. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Shaw Avenue, Brawley Avenue to Marks Avenue: This roadway segment is already built to its ultimate General Plan configuration. Therefore, the project would create a significant unavoidable impact to the eastbound direction in the p.m. peak hour at this location. However, *this segment of Shaw Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Dante Avenue, Polk Avenue to Bullard Avenue: This is a two-lane residential collector roadway with limited capacity. Therefore, the project would create a significant unavoidable impact to the eastbound direction at this location in the p.m. peak hour.

Carnegie Avenue, Golden State Boulevard to Bullard Avenue: Construct a second eastbound and westbound through lane on this roadway segment. This roadway segment is not part of the FMSI fee, and this improvement cannot be reimbursed/credited.

Significant Caltrans Facility Impacts

Based on the Existing plus Master Plan traffic analysis discussed above, the following study area Caltrans facilities are forecast to have significant impacts with addition of Master Plan traffic. The following are improvements required to mitigate these impacts:

TRAF-4 Prior to obtaining a Certificate of Occupancy, the Master Plan shall pay their fair-share contribution towards improvements to Caltrans facilities noted below. The fair-share contribution shall be calculated per the February 2006 *Mutual Release and Settlement Agreement* between the City of Fresno and Caltrans District 6 (otherwise known as the "Interim Agreement"). This Interim Agreement provides guidance on the method for calculating a fair share to mitigate for impacts to State highways. Since the Master Plan will require a General Plan Amendment (GPA), and the GPA will increase trips over the existing use, the "Combined Formula" was used to calculate fair share. The Combined Formula is provided below:

P = (P1/F1) + (P2 – P1)/F2, where:

P = fair share percentage
P1 = the higher of the a.m. or p.m. peak hour project trips without GPA
P2 = the higher of the a.m. or p.m. peak hour project trips with GPA
F1 = total 2025 corresponding future peak hour traffic without project
F2 = total 2025 corresponding future peak hour traffic with project

Mitigation measures to the following Caltrans facilities have been discussed above, either in the measures for intersections, queuing, and/or roadway segments. For facilities not previously discussed, the needed mitigation measures are provided below.

- Parkway Drive/Herndon Avenue (impact to intersection LOS discussed above)
- SR 99 southbound off-ramp/Herndon Avenue (impacts to intersection LOS and queuing discussed above)
- SR 99 northbound off-ramp/Herndon Avenue: In addition, per Caltrans comments, the increase of peak hour volumes from the Master Plan traffic on the off-ramp would result in the total off-ramp exceeding 900 vph. HDM Topic 504.3(6) has an Advisory Design Standard (see HDM Topic 82.2(2)) that indicates the need to provide for a two-lane exit ramp with a 1,300 foot auxiliary lane from the SR 99 mainline.
- Grantland Avenue/Parkway Drive – SR 99 southbound on-ramp: In addition, per Caltrans comments, review of 2025 plus Master Plan peak hour volumes indicates that the volumes on the southbound on-ramp from Parkway Drive and Grantland Avenue would exceed 1,500 vehicles per hour (vph). The *Highway Design Manual* (HDM) Topic 504.3(7) indicates that a two-lane entrance ramp with a 1,000 foot auxiliary lane would be required.
- SR 99 southbound ramps/Shaw Avenue (impacts to queuing discussed above)
- SR 99 northbound ramps/Shaw Avenue (impacts to queuing discussed above)
- SR 99 southbound ramps/Ashlan Avenue (impacts to queuing discussed above)
- SR 99 northbound ramps/Ashlan Avenue (impacts to intersection LOS and queuing discussed above)

- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (impacts to roadway segment discussed above)
- Shaw Avenue: SR 99 southbound ramps to SR 99 northbound ramps (impacts to roadway segment discussed above)
- SR 99 mainline northbound, Herndon Avenue to Dakota: the Master Plan shall contribute its Combined Share percentage of cost to widen this segment to three lanes plus one auxiliary lane (for total of four northbound lanes) to mitigate cumulative impacts to the mainline segments between Herndon Avenue and Dakota Avenue.
- SR 99 mainline southbound, Avenue 7 to Herndon Avenue: the Master Plan shall contribute its Combined Share percentage of cost to widen this segment to three lanes to mitigate cumulative impacts to the mainline segments between Avenue 7 and Dakota Avenue.
- SR 99 northbound, Shaw Avenue to Herndon Avenue: the Master Plan shall contribute its Combined Share percentage of cost to widen this segment to four lanes to mitigate cumulative impacts to the weaving sections between Shaw Avenue and Herndon Avenue.
- SR 99 mainline southbound, Herndon Avenue to Shaw Avenue: Phase 1 shall contribute its Combined Share percentage of cost to widen this segment to four lanes to mitigate cumulative impacts to the weaving section between Herndon Avenue and Shaw Avenue.

Year 2010 plus Phase 1

Traffic Volumes and Geometrics

Figure 9-3 illustrates the study area intersection geometrics and traffic control for the 2010 plus Phase 1 condition. For the Phase 1 condition, in addition to the existing geometrics and traffic control, the proposed project would provide the following roadway and intersection improvements:

- Construct Bryan Avenue from Herndon Avenue to (extension of Veterans Boulevard) to its ultimate Arterial standard as a four lane divided arterial with ITS interconnect between traffic signals per the Public Works ITS standards. The number two southbound lane will be designed to provide deceleration for right turn movements into the project site either with right-turn pockets and flares or an extra wide number two lane.
- Construct additional turn lanes at Bryan Avenue/Herndon Avenue to improve lane capacities. Lane additions include: an eastbound right turn lane and third through lane, dual northbound left turn lanes, a northbound right turn lane, dual westbound left turn lanes and third through lane.
- Eliminate the south leg of Weber Avenue at Weber Avenue/Herndon Avenue and provide access for the six existing single-family homes on Weber Avenue through the Phase 1 site at the new secondary access driveway on Herndon Avenue (via a public access easement agreement). This secondary driveway on Herndon Avenue would be located consistent with the "Weber Avenue realignment option" noted on the Herndon Avenue grade separation plans.
- Construct the primary vehicular entrance to Phase 1 at a new driveway on Bryan Avenue, between Herndon Avenue and Palo Alto Avenue. This driveway will be signalized with ITS interconnect and will contain an eastbound approach (from Phase 1) with dual left turn lanes and a right turn lane; a northbound approach with a left turn lane and two through lanes; and a southbound approach with two through lanes with a wide outside lane (defacto right turn lane) to accommodate right turning traffic into Phase 1.
- Construct the western leg (eastbound approach) of the Bryan Avenue/Palo Alto Avenue intersection (Phase 1 secondary access). This intersection will be signalized with ITE interconnect and will have vehicular access for most movements, except the eastbound and westbound through movements. A median treatment ("pork chop") will be installed at the eastbound and westbound approaches to prohibit through movements.
- Construct a secondary driveway on Bryan Avenue between Palo Alto Avenue and Cresta Avenue. This driveway will be unsignalized with stop control on the eastbound approach (Phase 1 egress). This driveway will have limited access with southbound/eastbound right turn in/out only movements, and northbound left turn in only access.
- Construct the western leg (eastbound approach) of the Bryan Avenue/Cresta Avenue intersection (future Phase 2A primary access). For Phase 1, this intersection will be unsignalized with eastbound left turn (outbound) access. Eastbound through movements into the existing residential neighborhood will be prohibited and a median treatment ("pork chop") will be installed. When Phase 2A is constructed, this intersection will be signalized with ITS interconnect.

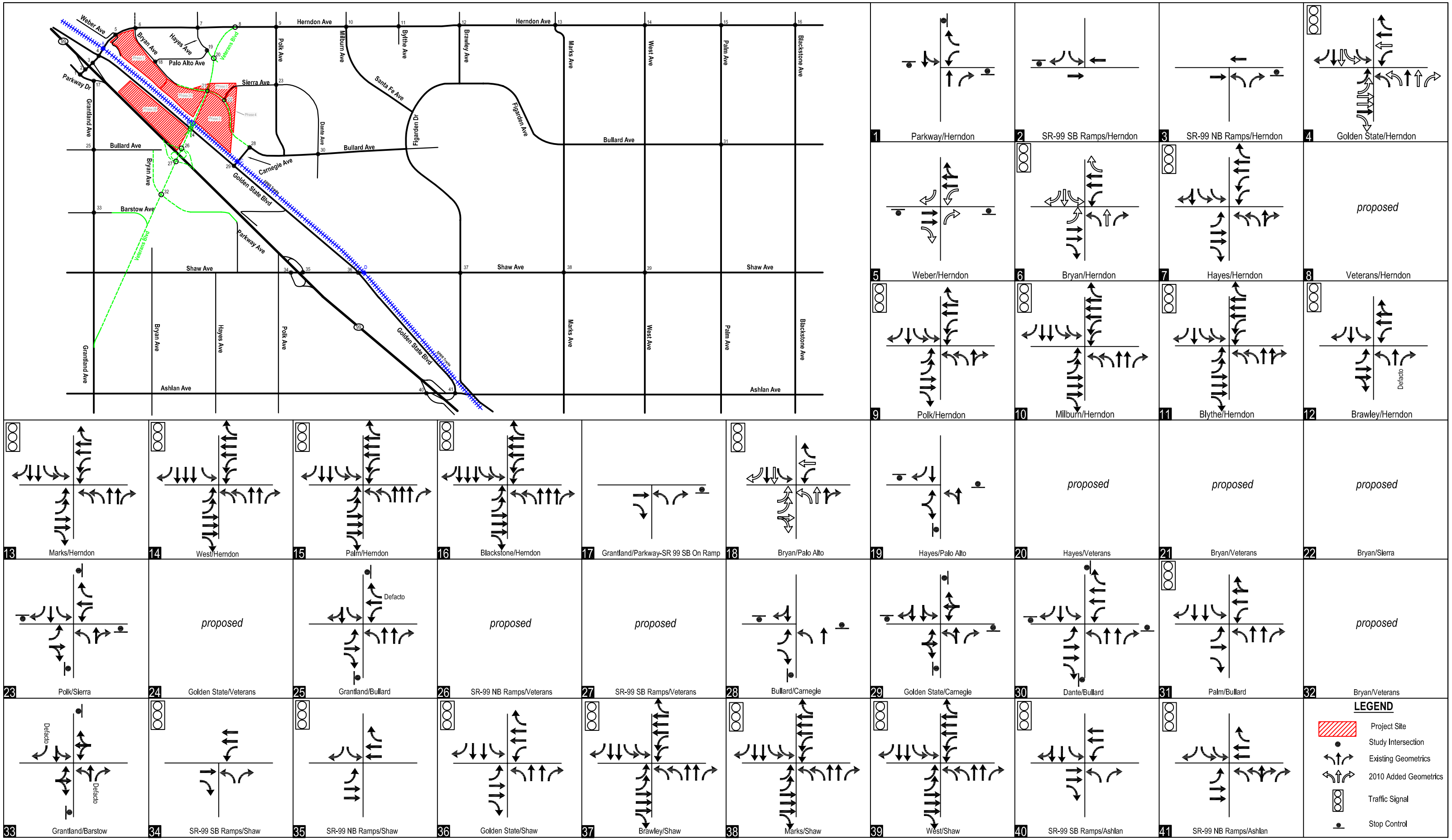

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Figure 9-3
Year 2010 + Phase 1 Intersection Geometrics and Traffic Control

The Year 2010 plus Phase 1 weekday a.m. and p.m. peak hour traffic volumes, and Saturday peak hour traffic volumes were determined by adding the weekday and Saturday project trip assignments to their respective 2010 baseline volumes. Figures 9-4A and 9-4B illustrate the resulting Year 2010 plus Phase 1 weekday and Saturday peak hour traffic volumes, respectively.

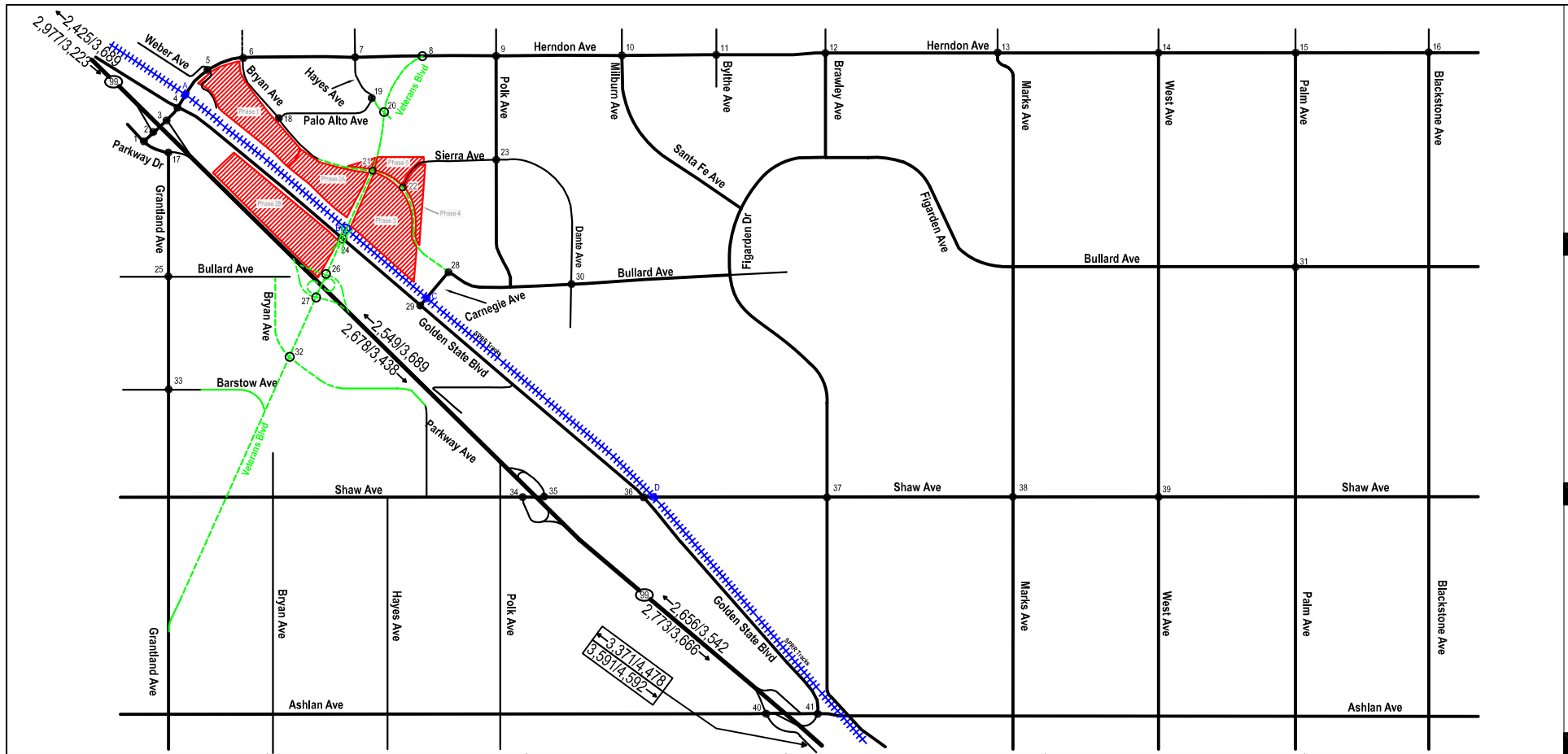
Intersection Levels of Service

Tables 9-8A and 9-8B present the results of the year 2010 plus Phase 1 intersection LOS for the weekday and Saturday peak hours, respectively, as calculated in Synchro. In addition, the tables also compare the Phase 1 LOS with the year 2010 baseline LOS.

Weekday Levels of Service

According to the table and based on the City's significance criteria, the following study intersections would be significantly impacted by the addition of Phase 1 traffic to 2010 baseline traffic. Therefore, the proposed project would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or greater at LOS E and F) at the following study intersections:

- Parkway Drive/Herndon Avenue (additional delay ≥5 seconds to LOS F in a.m. and p.m.)
- SR 99 southbound off-ramp/Herndon Avenue (additional delay ≥5 seconds to LOS F in a.m. and p.m.)
- SR 99 northbound off-ramp/Herndon Avenue (additional delay ≥5 seconds to LOS F in a.m. and p.m.)
- Weber Avenue – Phase 1 Secondary Access/Herndon Avenue (additional delay ≥5 seconds to LOS F in p.m.)
- Bryan Avenue/Herndon Avenue (LOS E to F in a.m.; LOS D to F in p.m.)
- Hayes Avenue/Herndon Avenue (LOS B to E in p.m.)
- Polk Avenue/Herndon Avenue (LOS C to E in p.m.)
- Milburn Avenue/Herndon Avenue (LOS D to E in p.m.)
- Brawley Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS F in a.m. and p.m.)
- Marks Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS E in a.m.; LOS E to F in p.m.)
- West Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS F in p.m.)
- Palm Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS E and F in a.m. and p.m., respectively)
- Grantland Avenue/Parkway Drive (additional delay ≥5 seconds to LOS F in a.m. and p.m.)
- Hayes Avenue/Palo Alto Avenue (LOS A to F in p.m.)
- Grantland Avenue/Bullard Avenue (LOS D to E in a.m.; LOS C to E in p.m.)
- Bullard Avenue/Carnegie Avenue (additional delay ≥5 seconds in p.m.)
- Golden State Boulevard/Carnegie Avenue (additional delay ≥5 seconds in a.m. and p.m.)
- Grantland Avenue/Barstow Avenue (LOS C to F in p.m.)



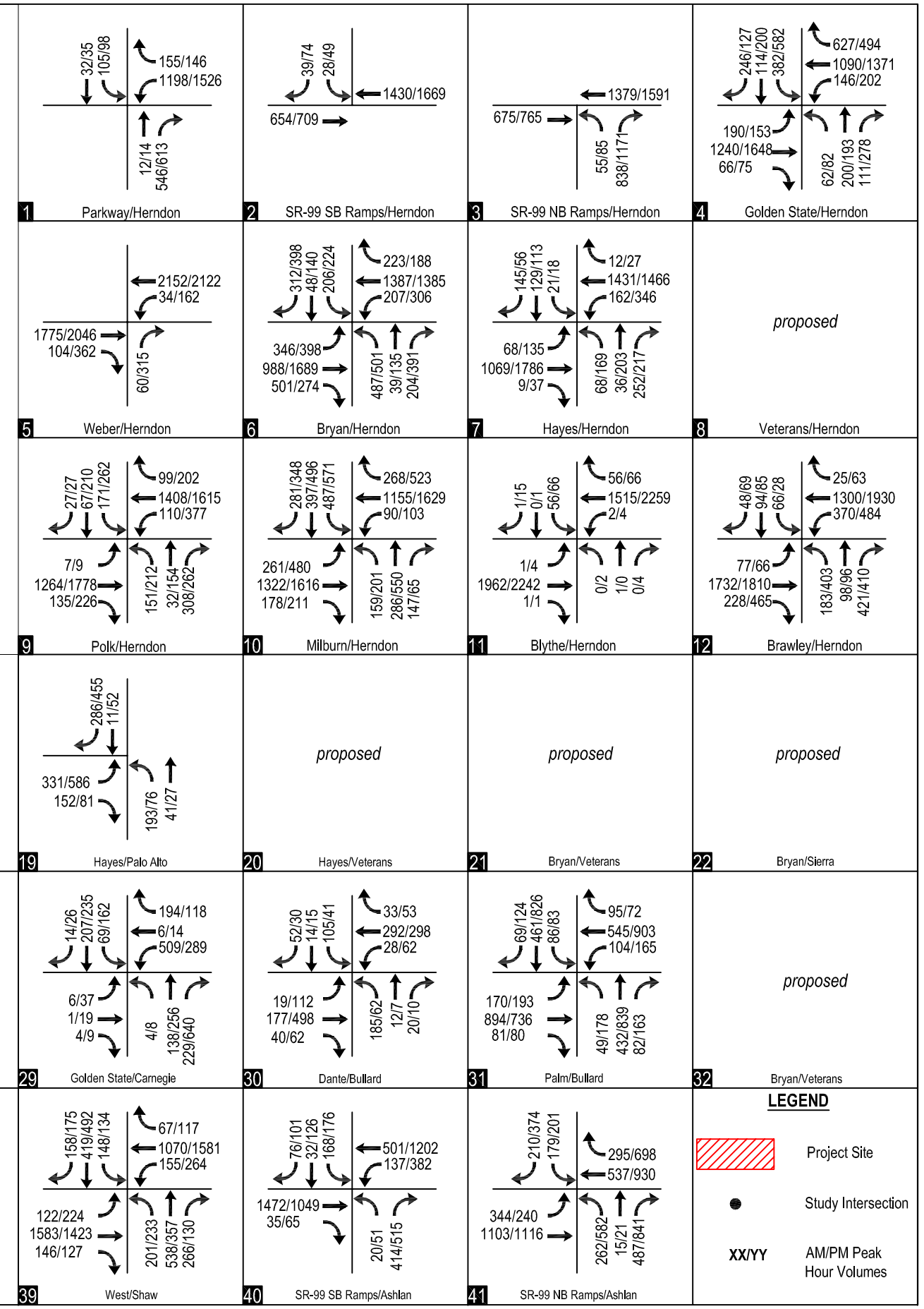


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Figure 9-4A
Year 2010 plus Phase 1 Weekday AM and PM Peak Hour Traffic Volumes

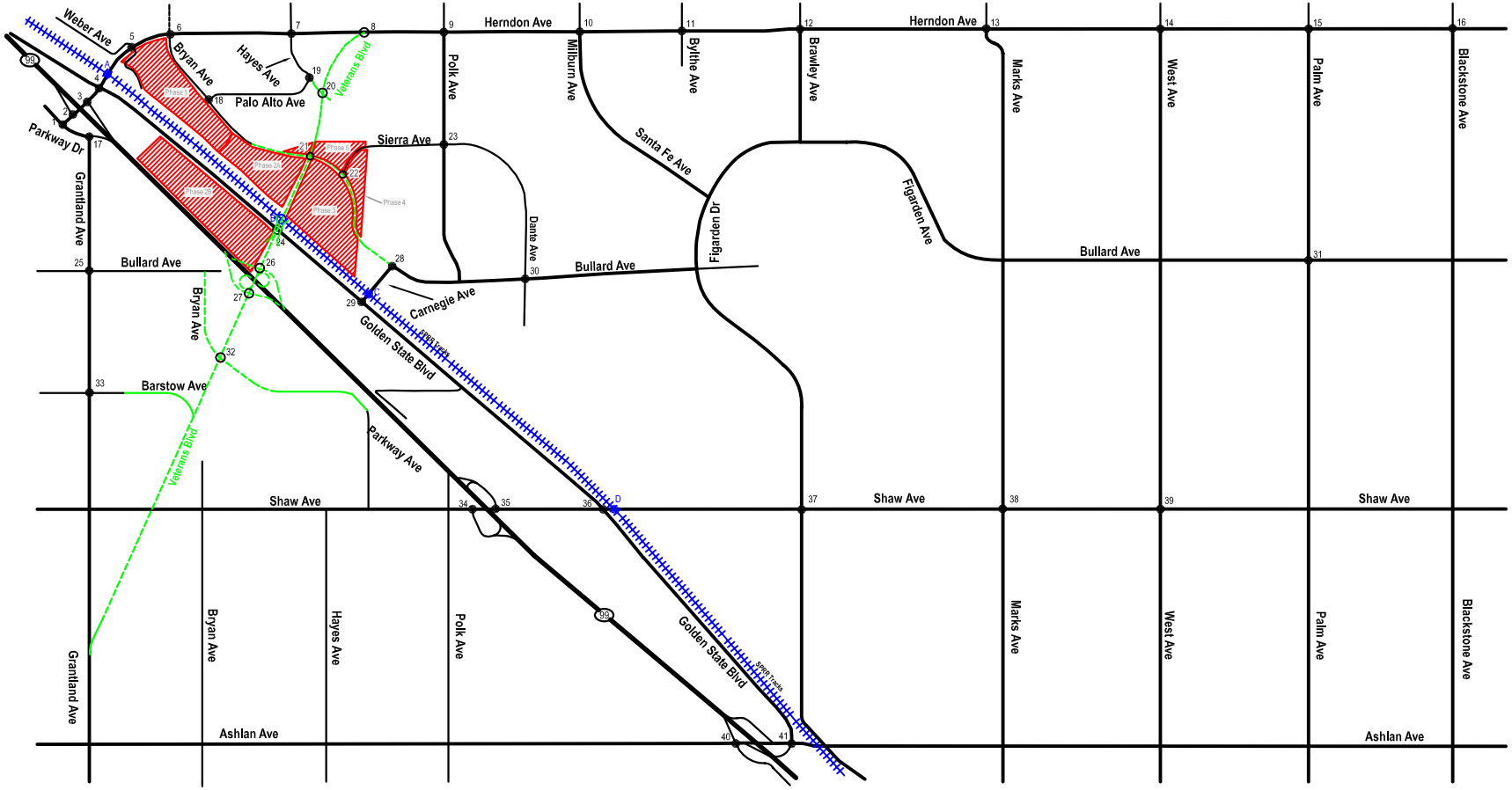
Weber Ave
Bryan Ave
Hayes Ave
Palo Alto Ave
Veterans Blvd
Herndon Ave
Polk Ave
Milburn Ave
Bylthe Ave
Brawley Ave
Marks Ave
West Ave
Palm Ave
Blackstone Ave
Parkway Dr
Grantland Ave
Sierra Ave
Santa Fe Ave
Figarden Dr
Figarden Ave
Dante Ave
Bullard Ave
Carnegie Ave
Golden State Blvd
Barstow Ave
Parkway Ave
Shaw Ave
Ashlan Ave
Phase 1
Phase 2
Phase 3
Phase 4
Phase 5
Phase 6
Phase 7
Phase 8
Phase 9
Phase 10
Phase 11
Phase 12
Phase 13
Phase 14
Phase 15
Phase 16
Phase 17
Phase 18
Phase 19
Phase 20
Phase

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Table 9-8A - Year 2010 Baseline plus Phase 1 Weekday AM and PM Peak Hour LOS Summary

		2010 Baseline				2010 + Project Phase 1			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	unsignalized	>50	F	>50	F	>50	F	>50	F
2 99 SB Ramps/Herndon	unsignalized	>50	F	>50	F	>50	F	>50	F
3 99 NB Ramps/Herndon	unsignalized	>50	F	>50	F	>50	F	>50	F
4 Golden State/Herndon	signal	27.1	C	29.6	C	28.5	C	52.6	D
5 Weber/Herndon	unsignalized	>50	F	>50	F	23.5	C	>50	F
6 Bryan/Herndon	signal	65.5	E	45.9	D	>80	F	>80	F
7 Hayes/Herndon	signal	18.2	B	19.6	B	24.5	C	71.4	E
8 Veterans/Herndon	signal	--	--	--	--	--	--	--	--
9 Polk/Herndon	signal	23.7	C	29.2	C	21.6	C	73.5	E
10 Milburn/Herndon	signal	27.4	C	41.6	D	28.6	C	56.7	E
11 Blythe/Herndon	signal	14.0	B	18.7	B	12.8	B	20.8	C
12 Brawley/Herndon	signal	>80	F	>80	F	>80	F	>80	F
13 Marks/Herndon	signal	67.1	E	67.6	E	68.1	E	>80	F
14 West/Herndon	signal	75.8	E	>80	F	67.6	E	>80	F
15 Palm/Herndon	signal	52.4	D	>80	F	56.8	E	>80	F
16 Blackstone/Herndon	signal	29.1	C	37.1	D	28.9	C	45.5	D
17 Grantland/Parkway	unsignalized	>50	F	>50	F	>50	F	>50	F
18 Bryan/Palo Alto	signal	11.2	B	8.7	A	21.9	C	39.6	D
19 Hayes/Palo Alto	unsignalized	12.3	B	8.6	A	19.6	C	>50	F
20 Veterans/Hayes	unsignalized	--	--	--	--	--	--	--	--
21 Veterans/Bryan	unsignalized	--	--	--	--	--	--	--	--
22 Bryan/Sierra	unsignalized	--	--	--	--	--	--	--	--
23 Polk/Sierra	unsignalized	12.6	B	13.9	B	12.9	B	16.6	C
24 Golden State/Veterans	signal	--	--	--	--	--	--	--	--
25 Grantland/Bullard	unsignalized	29.6	D	23.7	C	37.0	E	46.2	E
26 99 NB Ramps/Veterans	signal	--	--	--	--	--	--	--	--
27 99 SB Ramps/Veterans	signal	--	--	--	--	--	--	--	--
28 Carnegie/Bullard	unsignalized	41.6	E	>50	F	45.1	E	>50	F
29 Golden State/Carnegie	unsignalized	>50	F	>50	F	>50	F	>50	F
30 Dante/Bullard	unsignalized	12.1	B	12.6	B	12.1	B	12.7	B
31 Palm/Bullard	signal	42.3	D	62.8	E	42.3	D	62.8	E
32 Veterans/Bryan	signal	--	--	--	--	--	--	--	--
33 Grantland/Barstow	unsignalized	19.5	C	19.6	C	24.3	C	>50	F
34 99 SB Ramps/Shaw	signal	66.0	E	38.5	D	66.1	E	40.8	D
35 99 NB Ramps/Shaw	signal	21.4	C	27.1	C	21.2	C	28.3	C
36 Golden State/Shaw	signal	51.0	D	>80	F	53.1	D	>80	F
37 Brawley/Shaw	signal	23.9	C	53.3	D	24.1	C	52.9	D
38 Marks/Shaw	signal	30.7	C	48.2	D	30.7	C	48.5	D
39 West/Shaw	signal	26.4	C	31.8	C	26.5	C	33.0	C
40 99 SB Ramps/Ashlan	signal	25.7	C	24.5	C	25.1	C	24.6	C
41 99 NB Ramps/Ashlan	signal	35.6	D	>80	F	35.6	D	>80	F

Notes:

XXX Denotes delay that exceeds thresholds

XXX Denotes significant project impact

Table 9-8B – Year 2010 plus Phase 1 Saturday Intersection Level of Service Summary

Intersection	Control	2010 Baseline		2010 + Phase 1	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
5. Weber Avenue/Herndon Avenue	unsignalized	16.7	C	67.2	F
6. Bryan Avenue/Herndon Avenue	signal	51.7	D	381.7	F
7. Hayes Avenue/Herndon Avenue	signal	17.6	B	39.5	D
18. Bryan Avenue/Palo Alto Avenue	unsignalized	8.9	A	52.3	D
19. Hayes Avenue/Palo Alto Avenue	unsignalized	7.8	A	8.2	A

Saturday Levels of Service

According to the table, of the study intersections adjacent to the Phase 1 portion of the project site, the following study intersections would have a significant intersection LOS impact with implementation of Phase 1 of the Master Plan:

- Weber Avenue – Secondary Access/Herndon Avenue (LOS C to F)
- Bryan Avenue/Herndon Avenue (LOS D to LOS F)

Queuing Analysis

Tables 9-9A and 9-9B present the results of the 2010 plus Phase 1 weekday a.m. and p.m. peak hour, and Saturday peak hour, respectively, queuing analyses based on the Synchro LOS analysis and the calculated 95th percentile queue lengths for each left- and/or right turn storage lane for each study area intersection.

Weekday Queuing Analysis

Based on the queuing analysis, the addition of Phase 1 traffic to the 2010 baseline condition would create new significant queues and/or exacerbate significant baseline queues by more than one vehicle (or 25 feet) that would exceed a storage lane's capacity during the weekday peak hours:

- SR 99 southbound off-ramp/Herndon Avenue (SBL and SBR in both peak hours)
- SR 99 northbound off-ramp/Herndon Avenue (NBL in both peak hours)
- Golden State Boulevard/Herndon Avenue (SBL and WBR in both peak hours; WBL in p.m. peak hour)
- Bryan Avenue/Herndon Avenue (NBL, EBL, and WBL in both peak hours; NBR, SBL, and SBR in p.m. peak hour; and EBR in a.m. peak hour)
- Polk Avenue/Herndon Avenue (WBL in p.m. peak hour)
- Milburn Avenue/Herndon Avenue (SBL, SBR EBL, and WBR in p.m. peak hour)
- Brawley Avenue/Herndon Avenue (NBL, NBR, and WBL in both peak hours)
- Marks Avenue/Herndon Avenue (NBR, SBL, and EBL in both peak hours; and SBR and EBR in p.m. peak hour)
- West Avenue/Herndon Avenue (NBR in both peak hours)
- Palm Avenue/Herndon Avenue (SBR and EBL in both peak hours; WBR in a.m. peak hour)

Table 9-9A - Year 2010 Baseline plus Phase 1 Weekday Queuing Analysis Summary

Signalized Intersection		Storage & 95th Percentile Queue Lengths (ft)							
		NBL	NBR	SBL	SBR	EBL	EBR	WBL	WBR
2 99 SB Ramps/Herndon	Storage Length[1]	--	--	1,400	60	--	--	--	--
	AM Queue[1]	--	--	>1400	98	--	--	--	--
	PM Queue[1]	--	--	>1400	>1400	--	--	--	--
3 99 NB Ramps/Herndon	Storage Length[1]	1,400	--	--	--	--	--	--	--
	AM Queue[1]	>1400	--	--	--	--	--	--	--
	PM Queue[1]	>1400	--	--	--	--	--	--	--
4 Golden State/Herndon	Storage Length[1]	145	150	150	145	255	365	165	80
	AM Queue[1]	37	44	185	86	84	26	133	273
	PM Queue[1]	53	54	308	40	107	35	274	133
6 Bryan/Herndon	Storage Length[1]	150	150	250	250	165	165	165	165
	AM Queue[1]	722	67	247	224	586	276	332	152
	PM Queue[1]	763	282	318	409	674	189	439	137
7 Hayes/Herndon	Storage Length[1]	140	--	100	--	350	250	250	125
	AM Queue[1]	39	--	17	--	102	9	64	1
	PM Queue[1]	110	--	21	--	87	12	227	12
9 Polk/Herndon	Storage Length[1]	140	--	200	160	225	100	250	100
	AM Queue[1]	79	--	106	0	4	0	71	41
	PM Queue[1]	155	--	219	26	3	84	300	101
10 Milburn/Herndon	Storage Length[1]	225	100	230	100	230	135	230	140
	AM Queue[1]	65	48	201	111	124	47	44	53
	PM Queue[1]	130	51	323	180	285	78	45	384
11 Blythe/Herndon	Storage Length[1]	235	235	120	120	220	140	220	140
	AM Queue[1]	0	0	37	0	3	2	4	22
	PM Queue[1]	4	0	46	19	2	0	7	30
12 Brawley/Herndon	Storage Length[1]	105	75	80	80	290	--	310	--
	AM Queue[1]	317	371	98	36	116	--	538	--
	PM Queue[1]	645	254	43	38	155	--	457	--
13 Marks/Herndon	Storage Length[1]	245	125	160	160	145	50	280	190
	AM Queue[1]	139	309	202	95	201	54	208	71
	PM Queue[1]	199	236	247	425	418	88	279	177
14 West/Herndon	Storage Length[1]	175	65	185	350	260	200	275	140
	AM Queue[1]	70	368	207	36	52	74	257	45
	PM Queue[1]	114	586	194	151	107	80	227	142
15 Palm/Herndon	Storage Length[1]	145	280	250	230	245	190	210	145
	AM Queue[1]	143	139	126	931	563	50	191	340
	PM Queue[1]	169	65	267	1,517	657	38	186	157
16 Blackstone/Herndon	Storage Length[1]	250	110	240	90	250	160	250	100
	AM Queue[1]	75	57	129	142	119	40	69	84
	PM Queue[1]	141	40	130	470	173	136	129	125
17 Grantland/Parkway	Storage Length[1]	420	80	--	--	--	--	--	--
	AM Queue[1]	>420	>80	--	--	--	--	--	--
	PM Queue[1]	1,591	1,591	--	--	--	--	--	--
18 Bryan/Palo Alto	Storage Length[1]	250	--	250	150	150	--	--	150
	AM Queue[1]	7	--	318	34	59	--	--	69
	PM Queue[1]	30	--	260	47	201	--	--	33
25 Grantland/Bullard	Storage Length[1]	250	--	250	--	250	100	100	100
	AM Queue[1]	1	--	5	--	50	1	5	30
	PM Queue[1]	1	--	6	--	46	2	11	10
31 Palm/Bullard	Storage Length[1]	120	55	90	70	150	150	140	--
	AM Queue[1]	92	57	149	48	164	23	171	--
	PM Queue[1]	300	127	166	103	257	41	275	--
34 99 SB Ramps/Shaw	Storage Length[1]	1,330	50	--	--	--	200	110	--
	AM Queue[1]	110	83	--	--	--	212	780	--
	PM Queue[1]	161	87	--	--	--	103	676	--
35 99 NB Ramps/Shaw	Storage Length[1]	--	--	1,300	50	120	--	--	230
	AM Queue[1]	--	--	109	73	125	--	--	35
	PM Queue[1]	--	--	351	220	116	--	--	39
36 Golden State/Shaw	Storage Length[1]	140	140	165	165	180	180	190	190
	AM Queue[1]	34	382	322	24	59	30	461	45
	PM Queue[1]	81	1,084	444	30	125	51	541	67
37 Brawley/Shaw	Storage Length[1]	260	100	220	130	220	130	200	120
	AM Queue[1]	72	25	97	36	42	25	54	28
	PM Queue[1]	163	120	329	91	95	10	172	167
38 Marks/Shaw	Storage Length[1]	190	105	240	270	235	135	275	155
	AM Queue[1]	96	233	135	216	114	36	83	25
	PM Queue[1]	244	86	139	295	302	78	163	70
39 West/Shaw	Storage Length[1]	240	75	185	115	240	155	210	125
	AM Queue[1]	98	111	66	48	129	57	197	32
	PM Queue[1]	297	47	175	57	283	55	322	59
40 99 SB Ramps/Ashlan	Storage Length[1]	100	100	360	110	--	100	575	--
	AM Queue[1]	24	264	122	0	--	17	161	--
	PM Queue[1]	54	152	146	0	--	37	351	--
41 99 NB Ramps/Ashlan	Storage Length[1]	240	520	210	210	320	--	--	85
	AM Queue[1]	235	210	87	61	361	--	--	137
	PM Queue[1]	630	615	176	372	412	--	--	786

Notes:
[1] Storage length determined by field measurement and review of scaled aerial photography. AM & PM queue lengths determined in *Synchro*.
XXX-Denotes 95th percentile queue that would exceed the lane's storage capacity.

Table 9-9B – Year 2010 plus Phase 1 Saturday Intersection Queuing Analysis Summary

Signalized Intersection		Storage & 95th Percentile Queue Lengths (ft)							
		NBL	NBR	SBL	SBR	EBL	EBR	WBL	WBR
6. Bryan/Herndon	Storage Length[1]	150	65	250	250	165	165	165	165
	Peak Queue[1]	1,861	581	381	374	776	139	1,377	172
7. Hayes/Herndon	Storage Length[1]	140	--	100	--	350	250	250	125
	Peak Queue[1]	28	--	38	--	156	14	47	25
18. Bryan/Palo Alto	Storage Length[1]	250	--	250	150	250	--	--	150
	Peak Queue[1]	20	--	162	76	653	--	--	28

Note: [1] – Storage length determined by field measurement and review of scaled aerial photography. AM & PM queues determined in Synchro.

- Blackstone Avenue/Herndon Avenue (SBR in both peak hours)
- Grantland Avenue/Parkway Drive (NBL and NBR in both peak hours)
- Bryan Avenue/Palo Alto Avenue (SBL in a.m. peak hour; and EBL in p.m. peak hour)
- Palm Avenue/Bullard Avenue (NBL, NBR, SBR, and EBL in p.m. peak hour; and SBL and WBL in both peak hours)
- SR 99 southbound ramps/Shaw Avenue (NBR and WBL in both peak hours)
- SR 99 northbound ramps/Shaw Avenue (SBR in p.m. peak hour)
- Golden State Boulevard/Shaw Avenue (NBR, SBL, and WBL in both peak hours)
- Brawley Avenue/Shaw Avenue (SBL and WBR in p.m. peak hour)
- Marks Avenue/Shaw Avenue (NBL and EBL in p.m. peak hour; NBR in a.m. peak hour)
- West Avenue/Shaw Avenue (NBL, EBL, and WBL in p.m. peak hour; NBR in a.m. peak hour)
- SR 99 southbound ramps/Ashlan Avenue (NBR in both peak hours)
- SR 99 northbound ramps/Ashlan Avenue (NBL, NBR, and SBR in p.m. peak hour; and EBL and WBR in both peak hours)

Saturday Queuing Analysis

Based on the queuing analysis, the addition of Phase 1 traffic to the 2010 baseline condition would create new significant queues and/or exacerbate significant baseline queues by more than one vehicle (or 25 feet) that would exceed a storage lane's capacity during the Saturday peak hour:

- Bryan Avenue/Herndon Avenue (NBL, NBR, SBL, SBR, SBL, WBL, and WBR)
- Bryan Avenue/Palo Alto Avenue (EBL)

Roadway Level of Service Analysis

Table 9-10 presents the results of the 2010 plus Phase 1 roadway level of service analysis for the weekday a.m. and p.m. peak hours. In addition, the table provides a comparison of the 2010 Baseline and 2010 plus Phase 1 roadway levels of service. The addition of the Phase 1 trips to the following roadway segments would be considered a significant impact since the LOS changes from satisfactory conditions (LOS D or better) in 2010 Baseline condition to unsatisfactory (i.e. LOS E or F) levels with the addition of Phase 1 traffic:

Table 9-10 - Year 2010 plus Project Phase 1 Roadway Segment Level of Service Summary

		2010 plus Phase 1											
		AM Peak Hour						PM Peak Hour					
Roadway Segment	No. of Lanes	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]
Herndon Avenue													
Parkway to SR 99 SB Ramps	1	654	D		1,469	F	0.17	711	D		1,743	F	0.57
SR 99 SB Ramps to SR 99 NB Ramps	1	682	D		1,434	F		765	D		1,676	F	
SR 99 NB Ramps to Golden State	1	1,513	F	0.30	1,398	F	0.17	1,936	F	0.59	1,591	F	0.57
Golden State to Weber	2	1,733	E	0.17	1,904	F	0.11	2,513	F	0.37	2,072	F	0.35
Weber to Bryan	2	1,879	F	0.18	2,196	F	0.13	2,408	F	0.26	2,284	F	0.31
Bryan to Hayes	2	1,398	D		1,817	F	0.10	2,304	F	0.32	1,879	F	0.21
Hayes to Veterans	2	1,405	D		1,607	D		2,023	F	0.32	1,848	F	0.27
Veterans to Polk	2	1,406	D		1,607	D		2,023	F	0.32	1,854	F	0.27
Polk to Milburn	2	1,761	E	0.08	1,617	D		2,307	F	0.30	2,194	F	0.23
Milburn to Blythe	3	1,964	C		1,516	C		2,252	D		2,276	D	
Blythe to Brawley	2	2,037	C		1,573	C		2,341	D		2,402	D	
Brawley to Marks	2	2,481	F	0.05	1,779	E	0.08	2,433	F	0.19	2,804	F	0.15
Marks to West	3	2,937	F	0.03	2,160	D		2,599	E	0.11	3,209	F	0.07
West to Palm	3	3,264	F	0.02	2,480	D		2,988	F	0.10	3,495	F	0.06
Palm to Blackstone	3	2,593	E	0.02	2,023	C		2,518	D		2,734	F	0.05
e/o Blackstone	3	2,339	D		1,998	C		2,265	D		2,082	C	
Parkway Drive													
Herndon and Grantland	1	608	D		1,331	F	0.18	656	D		1,601	F	0.58
Bryan Avenue													
Herndon to Palo Alto	2	714	C		730	C		1,065	C		712	C	
Palo Alto to Veterans	2	286	C		114	C		469	C		397	C	
Veterans to Sierra	--	--	--		--	--		--	--		--	--	
Sierra and Carnegie	1	223	C		189	C		130	C		53	C	
Carnegie to Dante	2	673	C		254	C		422	C		767	C	
Palo Alto Avenue													
Bryan to Hayes	1	483	D		479	C		426	C		454	C	
Hayes Avenue													
Herndon to Palo Alto	1	234	C		297	C		613	D		507	D	
Palo Alto to Veterans	1	234	C		163	C		103	C		133	C	
Veterans Avenue													
Hayes to Herndon	--	--	--		--	--		--	--		--	--	
Bryan to Hayes	--	--	--		--	--		--	--		--	--	
Golden State to Bryan	--	--	--		--	--		--	--		--	--	
SR 99 NB Ramps to GS	--	--	--		--	--		--	--		--	--	
SR 99 SB Ramps to SR 99 NB Ramps	--	--	--		--	--		--	--		--	--	
Bryan(2) to SR 99 SB Ramps	--	--	--		--	--		--	--		--	--	
Sierra Avenue													
Bryan to Polk	1	228	C		183	C		98	C		174	C	
Polk Avenue													
Herndon to Sierra	1	491	D		301	C		628	D		638	D	
Golden State Boulevard													
Herndon to Veterans	1	373	C		807	E	0.01	553	D		769	E	0.06
Veterans to Carnegie	1	338	C		290	C		411	C		423	C	
Carnegie to Shaw	1	509	D		640	D		969	F	0.08	583	D	
Shaw to Ashlan	1	844	F	0.00	590	D		1,560	F	0.05	654	D	
Shaw Avenue													
w/o SR 99 SB Ramps	1	1,390	F	0.01	922	F	0.01	1,100	F	0.02	1,621	F	0.04
SR 99 SB Ramps to SR 99 NB Ramps	1-2	1,171	F		1,417	D		1,165	F		2,007	F	
SR 99 NB Ramps to Golden State	2	1,179	D		1,427	D		1,414	D		2,035	F	0.02
Golden State to Brawley	3	1,759	D		1,677	C		2,428	D		2,492	E	0.01
Brawley to Marks	3	1,781	D		1,535	C		2,328	D		2,372	D	
Marks to West	3	2,096	D		1,429	C		1,885	D		1,997	D	
e/o West	3	1,997	D		1,292	C		1,687	C		1,962	D	
Grantland Avenue													
Parkway to Bullard	1	791	E	0.08	413	C		718	D		764	E	0.24
Bullard to Barstow	1	521	D		457	C		498	D		637	D	
Palm Avenue													
Herndon to Bullard	2	1,181	D		1,218	D		1,256	D		1,132	D	
Dante Avenue													
Polk to Bullard	1	193	C		183	C		193	C		174	C	
Carnegie Avenue													
Golden State to Bullard	1	313	C		709	D		859	F	0.01	437	C	
Ashlan Avenue													
SR 99 SB Ramps to SR 99 NB Ramps	2	2,054	F		1,009	C		1,740	F		1,886	F	

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* , for State Two-Way Arterials (Class II) & Non-State Roadways.

[2] V/C based on LOS F capacities in the Florida Tables

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact (v/c ≥ 0.15 per the City of Fresno General Plan Transportation Policy B-3)

- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (LOS C to D eastbound p.m.)
- Herndon Avenue: Golden State Boulevard to Weber Avenue (LOS D E eastbound a.m.; LOS E to F westbound a.m.; and LOS D to F westbound p.m.)
- Herndon Avenue: west of Bryan Avenue (LOS D to F eastbound a.m.)
- Herndon Avenue: Bryan Avenue to Hayes Avenue (LOS D to F westbound both peak hours; LOS E to F eastbound p.m.)
- Herndon Avenue: east of Hayes Avenue (LOS D to F eastbound p.m.; LOS C to LOS F westbound p.m. peak hour)
- Herndon Avenue: west of Polk Avenue (LOS D to LOS F both directions p.m.)
- Herndon Avenue: Polk Avenue to Milburn Avenue (LOS D to E eastbound a.m.; LOS E to F both directions p.m.)
- Herndon Avenue: Brawley Avenue to Marks Avenue (LOS D to E westbound a.m.)
- Herndon Avenue: Marks Avenue to West Avenue (LOS D to E eastbound p.m.)
- Herndon Avenue: Palm Avenue to Blackstone Avenue (LOS D to E eastbound a.m.; LOS E to F westbound p.m.)
- Golden State Boulevard: south of Herndon Avenue (LOS D to E southbound p.m.)
- Grantland Avenue: Parkway Drive to Bullard Avenue (LOS D to E northbound a.m. and southbound p.m.)
- Ashlan Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS E to F eastbound p.m.)

Freeway Level of Service Analyses

Year 2010 plus Phase 1 freeway segment traffic volume forecasts were post-processed by DKS using the existing AADT obtained from the Caltrans Traffic and Vehicle Data Systems Unit webpage. The difference between the future model volume and the existing model volume was added to the existing count to calculate the future analysis volume.

Mainline Levels of Service

Table 9-11 provides the year 2010 plus Phase 1 freeway level of service summary. As this table indicates, in the 2010 plus Phase 1 condition p.m. peak hour in both directions, all study segments of SR 99 will continue to operate with unsatisfactory conditions (LOS D or worse). In the a.m. peak hour, the segment of Avenue 7 to Herndon Avenue in the southbound direction is forecast to continue to operate with unsatisfactory LOS.

However, addition of Phase 1 trips to SR 99 would create a significant impact to the southbound freeway segment of Shaw Avenue to Ashlan Avenue in the a.m. peak hour.

Table 9-11 – Year 2010 plus Phase 1 Freeway Segment Level of Service Summary

Freeway	From	To	Density	LOS
Northbound AM				
SR 99	Herndon Avenue	Avenue 7	22.5	C
	Veterans Boulevard Shaw Avenue	Herndon Avenue Veterans Boulevard	23.7	C
	Ashlan Avenue	Shaw Avenue	25.1	C
	Dakota Avenue	Ashlan Avenue	21.2	C
Southbound AM				
SR 99	Avenue 7	Herndon Avenue	28.2	D
	Herndon Avenue Veterans Boulevard	Veterans Boulevard Shaw Avenue	25.0	C
	Shaw Avenue	Ashlan Avenue	26.3	D
	Ashlan Avenue	Dakota Avenue	22.6	C
Northbound PM				
SR 99	Herndon Avenue	Avenue 7	40.1	E
	Veterans Boulevard Shaw Avenue	Herndon Avenue Veterans Boulevard	37.7	E
	Ashlan Avenue	Shaw Avenue	37.3	E
	Dakota Avenue	Ashlan Avenue	28.7	D
Southbound PM				
SR 99	Avenue 7	Herndon Avenue	31.4	D
	Herndon Avenue Veterans Boulevard	Veterans Boulevard Shaw Avenue	34.9	D
	Shaw Avenue	Ashlan Avenue	40.0	E
	Ashlan Avenue	Dakota Avenue	29.6	D

Table 9-12 – Year 2010 plus Phase 1 Freeway Weaving Level of Service Summary

	2010 Baseline			2010 + Phase 1							
		LOS			LOS without Mitigation				LOS with Mitigation		
Segment	No. of Lanes	AM	PM	No. of Lanes	AM	Significant Impact	PM	Significant Impact	No. of Lanes	AM	PM
SR 99 northbound											
Shaw Ave to Herndon Ave	2	D	F	2	D	no	F	no	4 (w/ aux)	B	C
SR 99 southbound											
Herndon Ave to Shaw Ave	2	D	E	2	D	no	E	no	3	C	C

Weaving Section Levels of Service

The SR 99 mainline and ramp entry and exit volumes for the 2010 plus Phases 1 scenario were analyzed using Figure 504.7A from the HDM. Results from this analysis are shown in Table 9-12. In addition, the table also shows a comparison with the 2010 baseline scenario, as well as indicates the LOS for mitigation measures (if needed). Detailed calculations on the Leisch nomographs are provided in Appendix F.

As shown in the table, addition of Phase 1 traffic to SR 99 would not create a new significant impact. However, since both study weaving sections are forecast to operate with unsatisfactory LOS (LOS D or below) in the 2010 baseline condition, Phase 1 would contribute to those already impacted weaving sections.

At-Grade Railroad Crossing Analysis

Using the HCM "Back of Queue" queuing methodology to analyze the vehicular queuing, Table 9-13 presents the at-grade railroad crossing analysis summary for the 2010 plus Phase 1 condition. The HCM calculation sheets are provided in Appendix H.

Table 9-13 – Year 2010 plus Phase 1 At-Grade Railroad Crossing Analysis Summary

Crossing Location	Peak Hour [1]	Rail Crossing Time (seconds) [2]	Vehicular Queue (feet) [3]		Impact to Adjacent Major Intersection [4]				Significant Project Impact?	
			e/o tracks	w/o tracks	e/o tracks		w/o tracks		e/o tracks	w/o tracks
Herndon Ave	AM	205	2,602	2,268	Yes	1,705 ft to Bryan Ave	Yes	725 ft to SR 99 NB ramps	No	No
	PM	156	2,455	3,996	Yes		Yes		Yes	No
Carnegie Ave	AM	243	1,196	548	Yes	720 ft to Bullard Ave	Yes	75 ft to Golden State Blvd	No	No
	PM	110	322	800	No		Yes		No	No
Shaw Ave	AM	300	3,127	3,411	Yes	1,560 ft to Blythe Ave	Yes	2,600 ft to SR 99 NB ramps	No	No
	PM	235	5,907	5,487	Yes		Yes		No	No

[1] - Based on observed train crossings in 2007 within the AM and PM peak commute hours.

[2] - Based on time that train crossing gate arms go down, to time gate arms go up.

[3] - Vehicle queue determined using *Highway Capacity Manual* (HCM) "Back of Queue Equation".

[4] – Impact based on whether vehicular queue would extend to an adjacent major intersection. For Herndon and Shaw Avenues the major intersection west of tracks will be the northbound ramp intersections with SR 99, rather than the closely spaced intersections with Golden State Blvd/Herndon Ave (125 ft) and Golden State Blvd/Shaw Ave (50 ft).

According to the table, addition of Phase 1 traffic would cause new queuing impacts (i.e., new impacts to adjacent major intersections from the baseline condition) at the following crossings:

- Herndon Avenue crossing (Bryan Avenue/Herndon Avenue in the p.m. peak hour)

On-site Circulation, Access, and Parking Impacts

A detailed site plan has been developed for Phase 1 of the Master Plan. The site plan for Phase 1 provides details of: primary and secondary project access; internal roadway circulation, turn storage bay lengths, parking facilities, and location(s) of other planned transportation facilities such as bus turnouts and pedestrian sidewalks/circulation. Therefore, this section discusses the potential project-related impacts of Phase 1 of the Master Plan with respect to vehicular and pedestrian access, on-site circulation, parking demand and supply, and alternative transportation (i.e., transit, and pedestrian and bicycle facilities).

In addition, this section discusses the potential traffic impacts of Phase 1 to the adjacent River View Elementary and Rio Vista Middle Schools; with specific analysis of the roadway operations and capacity along Palo Alto Avenue, between Hayes Avenue and Bryan Avenue.

Project Access

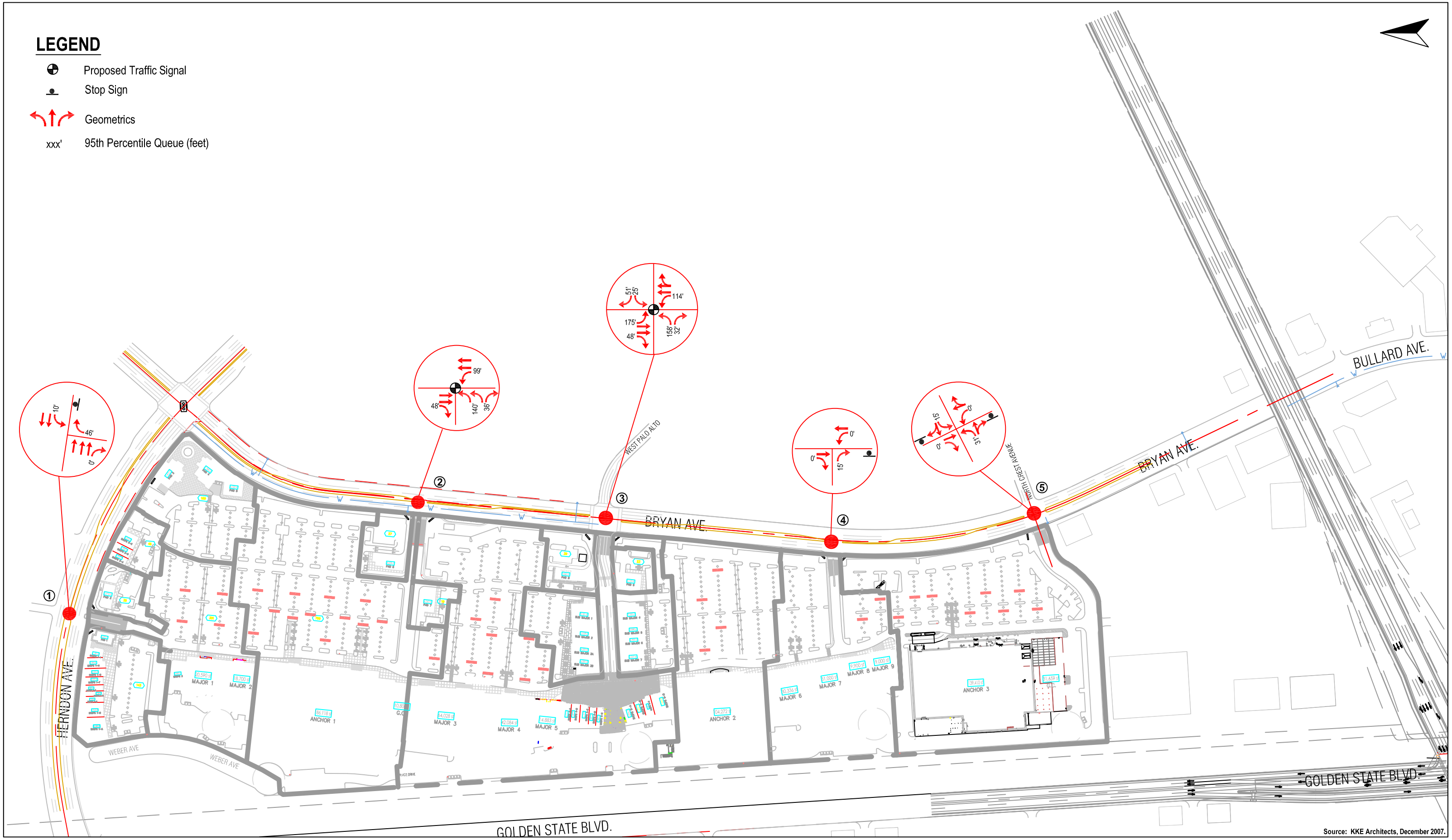
Vehicular access to Phase 1 of the Master Plan is provided via primary and secondary access driveways, either full access or right turn in/out only access, along Bryan Avenue, and a secondary right turn in/out driveway with left turn inbound-only access proposed on Herndon Avenue.

There are four vehicular access driveways proposed along Bryan Avenue. Primary, full access signalized driveways are proposed at the intersection of Bryan Avenue/"Anchor A" driveway (between Herndon Avenue and Palo Alto Avenue) and Bryan Avenue/Palo Alto Avenue. In addition, other driveways proposed along Bryan Avenue include a limited access (all movements permitted, except eastbound left turns out of Phase 1) unsignalized secondary driveway between Palo Alto Avenue and Cresta Avenue, and a limited access (all movements permitted, except eastbound through movements out of Phase 1) driveway at North Cresta Avenue/Bryan Avenue. This intersection will be unsignalized for Phase 1, but signalized for Phases 2A and future phases. The distances between these driveways are as follows:

- Bryan Avenue/Herndon Avenue intersection to Secondary Driveway 1 (unsignalized eastbound right turn in/out with westbound left turn inbound-only access) on Herndon Avenue = 850 feet
- Bryan Avenue/Herndon Avenue intersection to Primary Driveway at Bryan Avenue/"Anchor A" driveway (signalized full access driveway) on Bryan Avenue = 1,010 feet
- Bryan Avenue/"Anchor A" driveway (signalized full access driveway) to other primary access driveway at Bryan Avenue/Palo Alto Avenue (signalized limited access intersection) = 700 feet
- Bryan Avenue/Palo Alto intersection to Secondary Driveway 2 (unsignalized limited access driveway) = 855 feet
- Secondary Driveway 2 (unsignalized limited access driveway) to primary access (for Phase 1 and future Phase 2) at Bryan Avenue/Cresta Avenue intersection (unsignalized limited access) = 795 feet.

Based on the 2010 plus Phase 1 queuing analysis (discussed previously in this TIS), significant queue lengths were forecast at the Bryan Avenue/Herndon Avenue intersection. However, after mitigation of those queues by adding dual left turn lanes on all approaches and the additional mitigation measure of extending Bryan Avenue from Cresta Avenue to Bullard Avenue, the 95th percentile queues (with Phase 1 mitigation) decreased at the intersection to a 205 foot northbound dual left turn queue (from 763 feet). According to those mitigated queue lengths at the Bryan Avenue/Herndon Avenue intersection, a full access signalized intersection at the "Anchor A" driveway could be placed and would have an estimated queue length of 99 feet for the northbound left turn (inbound to Phase 1) lane, and an estimated queue length of 140 feet for the dual eastbound left turn lanes (out of Phase 1). A queuing analysis for these driveways and the other driveways are shown in Figure 9-5.

Similarly, based on the 2010 plus Phase 1 queuing analysis, a 158 foot queue was calculated for the eastbound left turn lane out of Phase 1 at the Bryan Avenue/Palo Alto Avenue intersection. The planned throat length of this outbound lane is approximately 185 feet (with a single left turn lane and dedicated right turn lane; eastbound through movements will be restricted) between Bryan Avenue and the first internal intersection. In general, the queuing analyses show that as the Master Plan is built out and new roadways are constructed (full widening of Bryan Avenue to four lanes; and the extension of Veterans Boulevard and its interchange with SR 99), peak queues around the Phase 1 site tend to decrease as traffic is further dispersed to the south and east, rather than north to Herndon Avenue. Furthermore, as Phase 2 is constructed, a traffic signal would be installed at the Bryan Avenue/Cresta Avenue – Phase 2A driveway which would also share access with the Phase 1 site.



Source: KKE Architects, December 2007.

DKS Associates
TRANSPORTATION SOLUTIONS

Figure 9-5
Phase 1 On-Site Circulation and Site Analysis

This shared access would also further disperse traffic from the southern portion of Phase 1 and provide full access at that intersection.

Based on review of the site plan and review of the queuing analyses and the recommended mitigation measures at Bryan Avenue/Herndon Avenue, Bryan Avenue/Palo Alto Avenue, and the extension of Bryan Avenue from Cresta Avenue to Bullard Avenue, vehicular and emergency access to the Phase 1 site would be adequate and no significant impacts to access would occur.

On-Site Circulation

Based on review of the Phase 1 site plan, on-site circulation is planned throughout the site. Each of the four driveways at the site, plus the full access driveway at Bryan Avenue/Cresta Avenue would provide internal drive aisles to circulate inbound and outbound traffic through the site. These internal drive aisles would generally be clear of "friction" as there would be no direct loading from parking stalls into those aisles. One primary drive aisle would bisect the length of the site and would be adjacent to the frontage of the retail stores. This primary drive aisle would have intersections with the drive aisles that connect to Bryan Avenue. In addition, in the center of the Phase 1 site, a smaller drive aisle is planned to provide access to short-tem parking stalls adjacent to planned "quick" service retail uses.

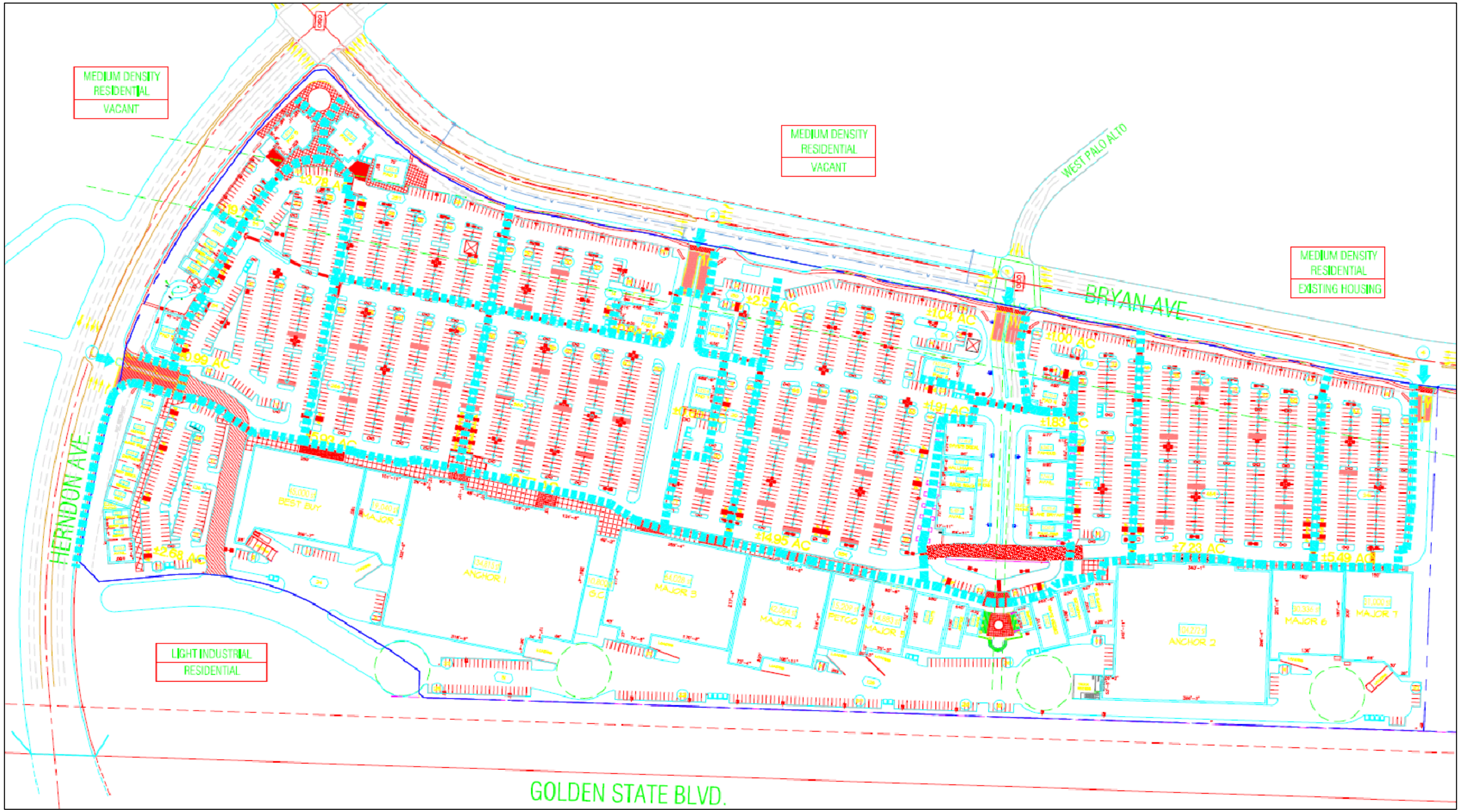
Access to service-related (emergency and utility) vehicles and delivery vehicles to the Phase 1 site would occur from a service access road behind the main buildings of Phase 1 (west side of site). Service and delivery vehicles could access the service area from either Secondary Driveway 1 (off Herndon Avenue) or the full access intersection at Bryan Avenue/North Cresta Avenue. From those driveways, there are internal roadways that would provide direct access to the service delivery areas behind the buildings. The site plan will be designed so that intersection drive aisles within the site would have adequate turn radii for service vehicles to maneuver within the site.

The proposed Phase 1 site plan will be reviewed by the City Planning and Public Works Departments. Both departments will require the site plan to conform to all City development standards to ensure uniformity and safety throughout the Phase 1 site. With adherence to the City's development standards, on-site circulation within the Phase 1 site would have no significant impacts.

Pedestrian and Bicycle Circulation

Similar to the vehicular on-site circulation, on-site pedestrian and bicycle circulation would be permitted along the wide sidewalks that front the retail units, as well as the sidewalk that would be constructed along the Phase 1 frontages on Herndon Avenue and Bryan Avenue. At the Bryan Avenue/Palo Alto intersection, a traffic signal will be installed with full pedestrian phasing to accommodate potential students from the middle school and elementary school across the street. Similarly, full pedestrian phasing and crosswalk markings will be provided at the signalized intersections of Bryan Avenue/Herndon Avenue, Bryan Avenue/"Anchor A" driveway, and the future signalized intersection at Bryan Avenue/Cresta Avenue (in Phase 2A).

The proposed site plan for Phase 1 indicates internal pedestrian pathways, bike rack locations, and a proposed small (FAX) transit center (i.e., bus turnout with shelter) south of the Bryan Avenue/"Anchor A" driveway intersection to encourage the use of public transit and pedestrian circulation within the Phase 1 site. Figure 9-6 presents an illustration of a Pedestrian Master Plan that indicates linkages of pedestrian facilities between all phases of the Master Plan, including Phase 1.



LEGEND

Pedestrian Access

DKS Associates
TRANSPORTATION SOLUTIONS

Figure 9-6
Phase 1 Pedestrian Master Plan

The proposed Phase 1 site plan will be reviewed by the City Planning and Public Works Departments. Both departments will require the site plan to conform to all City development standards to ensure uniformity and safety throughout the Phase 1 site. With adherence to the City's development standards, pedestrian and bicycle circulation within the Phase 1 site would have no significant impacts.

Parking

According the City of Fresno Zoning Code, Section 12-219.5 I – Off-street Parking, the parking rate for Regional Commercial uses is 4.5 spaces per 1,000 square feet, gross floor area (GFA), and 10 spaces per 1,000 square feet GFA for restaurant uses. Based on the site plan, Phase 1 is currently being designed for 857,132 square feet of retail/commercial uses (a larger square footage was analyzed for the traffic study to provide a conservative estimate of impacts, as well as allow for any minor changes in land uses and/or tenants).

Based on the City's parking rate of 4.5 spaces per 1,000 square feet for retail uses, and 10 spaces per 1,000 square feet for restaurant uses, the required parking spaces for Phase 1 would be 3,834 spaces. Based on the site plan, 3,834 spaces have been designed. This results in parking rates consistent with the City's Zoning Code. Therefore, there would be no parking impacts to Phase 1.

Transit

Public transit bus service in the Fresno area is provided by the Fresno Area Express (FAX) and Clovis Transit. FAX operates seven days a week and provides 20 transit routes within the metro Fresno area. Clovis Transit provides five transit routes to the Clovis area, with transfer stations to the FAX routes. Currently, there are no existing service routes in the project area. The closest FAX transit route to the project site is Route 45 (W Herndon/Fruit/Ashlan/Fowler) and Route 22 (N West Avenue/CD/E Tulare).

Based on the site plan, an FAX bus turnout is proposed south of Secondary Driveway 1, along the Phase 1 frontage. This bus turnout would serve the patrons of Phase 1 as well as the neighboring residential communities and the adjacent schools. Pedestrian walkways will provide access to this bus turnout. As the site plan will be reviewed by FAX, all City and/or FAX design requirements will be adhered-to in order to obtain site plan design approval. The project applicant will work with City and FAX staff to determine whether the existing Route 45 or Route 22, or a new route, would be required to serve Phase 1 patrons, and future users of the entire Master Plan.

Potential Impacts to Adjacent Schools

In the vicinity of Phase 1, two existing schools, River Bluff Elementary School and Rio Vista Middle School, may be potentially impacted by Phase 1 since its primary driveway is at the intersection of Bryan Avenue/Palo Alto Avenue, one of the two intersections that provide access to the schools (the other intersection is Hayes Avenue/Palo Alto Avenue). Though, Palo Alto Avenue is not a designated roadway on the City's Circulation Element, it is included in the Fresno COG model as a collector road for the schools and adjacent residential subdivisions.

Palo Alto Avenue exists as a two-lane undivided roadway between Hayes Avenue (designated as a Collector on the City's Circulation Element) and Bryan Avenue (designated as an Arterial in the City's Circulation Element). Based on field observations during the morning and after-school peak hours of the River Bluff Elementary School and Rio Vista Middle School, traffic along Palo Alto Avenue is congested all the way to Hayes Avenue and Bryan Avenue due to pick-up and drop-off operations of students arriving and departing the schools via passenger cars and/or buses. When Phase 1 of the proposed project is

completed, one of the two primary driveways of Phase 1 would be the west leg of the existing intersection of Bryan Avenue/Palo Alto Avenue. Completion of Phase 1 would also signalize this intersection and provide limited access to Phase 1 by prohibiting eastbound and westbound through movements at the intersection.

However, based on its location and the land uses that this roadway serves (primarily local streets of existing single family residential homes, and driveways of an elementary school and middle school), Palo Alto essentially functions as a "Collector" type roadway since there are no residential driveways loading directly on to the street. Review of the 2010 plus Phase 1 Roadway Segment Analysis indicates that the segment of Palo Alto Avenue, between Bryan Avenue and Hayes Avenue would operate at LOS A in the a.m. and p.m. peak hours without Phase 1. However, once Phase 1 is in operation, the roadway level of service would decrease from LOS A in both peak hours to LOS C in both peak hours. The City's LOS standard is LOS D; therefore addition of project traffic to Palo Alto Avenue would not create a significant impact.

However, as seen in observations of the morning peak hour of the schools, traffic is severely congested on Palo Alto Avenue due to the heavy volume of existing student drop-off operations that occur at both schools. The traffic counts collected reflect a lower volume of cars because of the low travel speeds occurring in front of the schools. Because of that major congestion, it is likely that any traffic not related to the school traffic would avoid that segment of Palo Alto between 7:15 a.m. and 8:45 a.m. on weekday mornings, as well as the after school hours of the schools. Fortunately, the peak hours of the proposed shopping center at Phase 1 would have different peak hours than those of the adjacent schools (usually midday or late afternoon on weekdays, while the school peak hours are early morning and early afternoon).

With that, Phase 1 traffic that would normally use Palo Alto during the school peak hours would likely be diverted away from Palo Alto, and would come in through the Bryan Avenue/Herndon Avenue intersection or from the Bryan Avenue extension from the south. In the future, with the development of Phase 2 of the Master Plan, the future Veterans Boulevard would be extended from Bryan Avenue to Herndon Avenue and Bryan Avenue would be expanded to four lanes to Bullard Avenue. At that time, Phase 1 traffic would also have additional routes other than using Palo Alto Avenue during the schools' peak hours.

Furthermore, as noted above, at the Bryan Avenue/Palo Alto intersection, a traffic signal will be installed with full pedestrian phasing to accommodate potential students from the middle school and elementary school across the street. Similarly, full pedestrian phasing and crosswalk markings will be provided at the signalized intersection of Bryan Avenue/Herndon Avenue and the future signalized intersection at Bryan Avenue/North Cresta Avenue. Phase 1 and the rest of the Master Plan (especially Phases 2A and 3) would also be required to fully construct bicycle and pedestrian facilities along Bryan Avenue consistent with the City's design standards. This would ensure adequate circulation of students that choose to travel along Bryan Avenue on their way to/from school.

The project applicant is continuing to coordinate with the School District and is providing their assistance by attending public outreach meetings with members of the School District and/or the schools' PTA to inform them of traffic-related issues with Phase 1, and accepting public input related to potential traffic impacts of Phase 1 to the schools.

Mitigation Measures

City of Fresno Traffic Signal Mitigation Impact Fee and Fresno Major Street Impact Fee

TRAF-5 Phase 1 shall pay its Traffic Signal Mitigation Impact (TSMI) Fee of $45.98 per average daily trip (ADT) at the time of building permit. This fee is reviewed and updated yearly and the applicant pays the TSMI fee in place at the time of the building permit. Based on the Phase 1 ADT of 37,906 and the current TSMI fee Phase 1 shall pay $1,742,917.88.

This TSMI fee is credited against signal installation and Intelligent Transportation System (ITS) improvements (constructed at their ultimate location) anticipated to buildout of the 2025 General Plan Circulation Element and included in the *Nexus Study* for the TSMI fee. Project specific impacts that are not consistent with the 2025 General Plan, Public Works P69 standards, and/or already incorporated into the TSMI fees infrastructure costs are not reimbursable unless the City Engineer and City Traffic Engineer include the new traffic signal and/or ITS infrastructure in the next update, and the applicant agrees to pay the new calculated TSMI fee that includes the new infrastructure.

TRAF-6 Phase 1 shall pay its Fresno Major Street Impact (FMSI) Fee which will be determined at time of building permit. Effective July 1, 2008, the appropriate FMSI fees would contain the City Wide Street Impact Fee plus the New Growth Area Major Street Impact Fee. For commercial retail developments such as Phase 1, the City Wide Street Impact Fee is calculated to be $1,006,574.40 (at $16,131 per acre); while the New Growth Area Major Street Impact Fee is calculated at $2,339,688.00 (at $37,495 per acre). Therefore, Phase 1 shall pay the total FMSI Fee of $3,346,262.40 (at $53,626 per acre). This FMSI fee is creditable towards major street roadway improvements included in the *Nexus Study* for the FMSI fee.

Significant Impacts at Intersections

Based on the 2010 plus Phase 1 traffic analysis discussed above, the following study intersections would continue to operate with an unsatisfactory LOS in the weekday a.m. and/or p.m. peak hour with the addition of the proposed Phase 1 traffic. Therefore, the proposed project would create a significant cumulative impact (LOS E to LOS F; or additional delay at LOS F) at these study intersections. The following are improvements required to mitigate these impacts:

TRAF-7 Prior to obtaining a Certificate of Occupancy, Phase 1 shall construct the traffic improvements listed below. These improvements are the minimum improvements needed to mitigate significant Phase 1 traffic impacts back to 2010 baseline (pre-Phase 1) conditions or better.

Parkway Drive/Herndon Avenue: Phase 1 would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to LOS F in the a.m. and p.m. peak hours. Phase 1 would be required to install a traffic signal (ITS interconnect with a 2070 controller per the PW ITS Standards and an ITS camera for operation monitoring) and construct the intersection to the lane configurations of dual left-turn lanes and a right-turn lane on the Herndon Avenue approach along with removing the southbound SR 99 off-ramp to Herndon Avenue – Grantland Parkway. The intersection shall have loop detection that is not bundled so the intersection can count traffic volumes to be utilized in the ITS program. The installation of traffic signal at this intersection is included in the TSMI fee and can be credited/reimbursed.

With the implementation of the improvement the intersection will operate with LOS B in both peak hours.

SR 99 southbound off-ramp/Herndon Avenue: Phase 1 would be required to remove the SR 99 southbound off-ramp to Grantland Avenue as part of the required signalization of Parkway Drive/Herndon Avenue and the SR 99 northbound off-ramp/Herndon Avenue. Removal of this off-ramp would allow for signal coordination on Herndon Avenue between Parkway Drive and the SR 99 northbound off-ramp.

SR 99 northbound off-ramp/Herndon Avenue: Phase 1 would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to LOS F in the a.m. and p.m. peak hours. Phase 1 would be required widen the northbound off-ramp at SR 99/Herndon Avenue to include two off-ramp lanes after the single off-ramp lane exit, and construct a traffic signal (ITS interconnect with a 2070 controller per the PW ITS Standards and an ITS camera for operation monitoring). Per the roadway segment mitigation measures, the westbound segment of Herndon Avenue, including the approach to this intersection, will be restriped (no widening of the mainline structure required per Caltrans) to two lanes, while one eastbound through lane will remain. The intersection shall have loop detection that is not bundled so the intersection can count traffic volumes to be utilized in the ITS program. At its intersection with Herndon Avenue, this off-ramp shall be widened to three lanes to provide a left-turn lane and dual-right-turn lanes. The length of the additional right-turn lane shall be calculated based on the 95th percentile queue in 2025 (510 feet). This traffic signal and off-ramp widening is included in TSMI Fee and can be credited/reimbursed. With the implementation of the improvement the intersection will operate with LOS B in the a.m. peak hour and LOS D in the p.m. peak hour. However, with mitigation, this intersection would still operate with unsatisfactory LOS (LOS D) per Caltrans significance criteria. Therefore, a significant unavoidable impact would occur in the p.m. peak hour.

Weber Avenue – Secondary Phase 1 Access/Herndon Avenue: Phase 1 would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to LOS F in the a.m. and p.m. peak hours. Phase 1 would be required to widen the eastbound and westbound approaches and construct a third through lane. This intersection will also be designed to be a limited access, unsignalized intersection with eastbound right-turn inbound-only access, northbound right-turn outbound-only access, and westbound left-turn inbound-only access. As this would be a secondary access, other primary and secondary access driveways would also be located along Bryan Avenue to provide other access options to Phase 1. With the implementation of the improvement the intersection will operate with LOS B in the a.m. peak hour and LOS C in the p.m. peak hour.

Bryan Avenue/Herndon Avenue: Phase 1 would contribute to a significant cumulative impact in the a.m. peak hour (LOS E to LOS F), and a significant project impact in the p.m. peak hours (LOS D to LOS F). Phase 1 would be required to modify the existing Bryan Avenue/Herndon Avenue traffic signal with ITS interconnect with a 2070 controller per the PW ITS Standards and an ITS camera for operation monitoring; and construct the intersection to the ultimate lane configurations of dual left-turn lanes, three through lanes, and a right-turn lane on Herndon Avenue approaches and dual left-turn lanes, one through lane, and a right-turn lane on Bryan Avenue approaches. Per the roadway segment mitigation measures, the Herndon Avenue will be widened to six lanes. Appropriate transitions for design speeds shall

be designed and constructed. The intersection shall have loop detection that is not bundled so the intersection can count traffic volumes to be utilized in the ITS program. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Based on the queuing analysis, with other mitigation measures implemented, a 250 foot left-turn pocket would be adequate at all approaches. This traffic signal is included in the TSMI Fee and can be credited/reimbursed. With the implementation of the improvement the intersection will operate with LOS C in the a.m. peak hour and LOS D in the p.m. peak hour.

Hayes Avenue/Herndon Avenue: Phase 1 would create a significant project impact in the p.m. peak hour. To mitigate opening-day impacts of Phase 1, Phase 1 will extend Bryan Avenue from North Cresta Avenue to the existing terminus of Bullard Avenue north of Carnegie Avenue with one lane in each direction with a raised median consistent with City Design Standards. In addition, the restricted access at Bryan Avenue/Palo Alto Avenue will reduce cut-through traffic at this intersection. Per the roadway segment mitigation measures, the Herndon Avenue will be widened to six lanes. This measure is discussed in detail below in the *Roadway Segment* mitigation measures section. With the extension of Bryan Avenue and the restriction of through traffic on Palo Alto Avenue from Phase 1, the Phase 1 impacts to this intersection would be mitigated to 2010 baseline conditions (or better). With the implementation of the improvements noted above, the intersection would operate at LOS C in the p.m. peak hour.

Polk Avenue/Herndon Avenue: Phase 1 would create a significant project impact in the p.m. peak hour. To mitigate opening-day impacts of Phase 1, Phase 1 will extend Bryan Avenue from North Cresta Avenue to the existing terminus of Bullard Avenue north of Carnegie Avenue with one lane in each direction with a raised median. This measure is discussed in detail below in the *Roadway Segment* mitigation measures section. With the extension of Bryan Avenue, the Phase 1 impacts to this intersection would be mitigated to 2010 baseline conditions (or better). With the implementation of this improvement, the intersection would operate at LOS C in the p.m. peak hour.

Millburn Avenue/Herndon Avenue: Phase 1 would create a significant project impact in the p.m. peak hour. To mitigate opening-day impacts of Phase 1, Phase 1 will extend Bryan Avenue from North Cresta Avenue to the existing terminus of Bullard Avenue north of Carnegie Avenue with one lane in each direction with a raised median. This measure is discussed in detail below in the *Roadway Segment* mitigation measures section. With the extension of Bryan Avenue, the Phase 1 impacts to this intersection would be mitigated to 2010 baseline conditions (or better). With the implementation of this improvement, the intersection would operate at LOS D in the p.m. peak hour.

Brawley Avenue/Herndon Avenue: Phase 1 would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to LOS F in the a.m. and p.m. peak hours. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. The project's maximum contribution to this intersection is 12.6 percent (725 vehicles) in the p.m. peak hour. The construction of a second (dual) left turn lane on the westbound approach is required for this intersection to operate with satisfactory LOS. The City has indicated that two approved projects (a CUP and rezone) have already

been conditioned to construct improvements at this intersection. These projects would likely mitigate the cumulative impacts forecast at this intersection. With the implementation of the improvement, the intersection would operate at LOS C in the a.m. peak hour and LOS D in the p.m. peak hour.

Marks Avenue/Herndon Avenue: Phase 1 would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to LOS E in the a.m. peak hour, and degrade from LOS E to LOS F in the p.m. peak hour. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. The City has also determined that the Phase 1 incremental contribution is not cumulatively considerable as the project's maximum contribution is 8.1 percent (561 vehicles) during the p.m. peak hour. The construction of a third through lane on both Herndon Avenue approaches is required for this intersection to operate with satisfactory LOS. With the implementation of the improvement the intersection will operate with LOS C in the a.m. peak hour and LOS D in the p.m. peak hour.

West Avenue/Herndon Avenue: Phase 1 would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to the p.m. peak hour. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. This intersection is not on the City's TSMI fee list. The City has also determined that the Phase 1 incremental contribution is not cumulatively considerable as the project's maximum contribution to this intersection is 6.3 percent (466 vehicles) in the p.m. peak hour. The modification of the traffic signal to provide right turn overlap phasing for the northbound right turn movement is required for this intersection to operate with satisfactory LOS. With the implementation of the improvement the intersection will operate with LOS D in the p.m. peak hour.

Palm Avenue/Herndon Avenue: Phase 1 would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to the a.m. and p.m. peak hours. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. This intersection is built to its ultimate General Plan configuration and there are no feasible mitigation measures that could mitigate the project's impact to less than significant levels. Therefore, the Phase 1 impact to this intersection is considered significant and unavoidable.

Grantland Avenue/Parkway Drive: Phase 1 would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to the a.m. and p.m. peak hours. Phase 1 will be required to install the following: a traffic signal (ITS interconnect with a 2070 controller per the PW ITS Standards and an ITS camera for operation monitoring); 2) construct the intersection with a left-turn lane and a right-turn lane on the Grantland Avenue approach; and, 3) the Parkway Drive eastbound approach lane configurations shall be two through lanes and a right-turn lane. The intersection shall have loop detection that is not bundled so the intersection can count traffic volumes to be utilized in the ITS program. As part of this traffic signal installation Phase 1 will also be required to construct the southbound SR 99 on-ramp to have an additional on-ramp lane (total of two lanes) along with ramp metering. The FMSI fee assumes that a left-turn pocket is 250 feet. Based on the queuing analysis, the northbound left turn lane would have a 95th percentile queue of 313 feet in the p.m. peak hour. This traffic

signal is included in the TSMI Fee and can be credited/reimbursed. With the implementation of the improvement the intersection would operate at LOS B in both peak hours.

Hayes Avenue/Palo Alto Avenue: Phase 1 would create a project significant impact in the p.m. peak hour (LOS A to LOS F). To mitigate opening-day impacts of Phase 1, Phase 1 will extend Bryan Avenue from North Cresta Avenue to Bullard Avenue to have one lane in each direction with a raised median. In addition, Phase 1 will restrict eastbound and westbound through movements at Bryan Avenue/Palo Alto Avenue to reduce cut-through traffic. The extension of Bryan Avenue measure is discussed in detail below in the *Roadway Segment* mitigation measures section. With the implementation of this improvement, the intersection would operate with LOS A in the p.m. peak hour.

Grantland Avenue/Bullard Avenue: Phase 1 would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to the a.m. and p.m. peak hours. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. The installation of a traffic signal would improve LOS to satisfactory conditions. With the implementation of the improvement, the intersection would operate at LOS A in both peak hours. The Phase 1 maximum contribution to this intersection is 25.7 percent (333 vehicles) in the p.m. peak hour which would be cumulatively considerable. In addition to the need for a traffic signal, second southbound approach lane is required per the roadway segment analysis where Phase 1 would also create a significant project impact. The estimated cost for the installation of a traffic signal and construction of second southbound through lane is approximately $1,030,000. According to the Project Applicant, the addition of that amount to their current TSMI and FMSI fees, Caltrans Combined Share fees, and their out-of-pocket cost for additional costs for the construction of other traffic improvements to the backbone of the City's traffic network (i.e., SR 99/Herndon Avenue interchange improvements and extension of Bryan Avenue to Bullard Avenue) as conditioned by the City, would make their project economically infeasible. Therefore, Phase 1 would not be able to mitigate its cumulatively considerable impact and would create a significant unavoidable impact at this location.

Bullard Avenue/Carnegie Avenue: Phase 1 would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to LOS F in the p.m. peak hour. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. The installation of a traffic signal would improve LOS to satisfactory conditions. With the implementation of the improvement, the intersection would operate at LOS A in both peak hours. The project's maximum contribution to this intersection is 30.5 percent (622 vehicles) in the p.m. peak hour which would be cumulatively considerable. The estimated cost for the installation of a traffic signal at this location is approximately $300,000. According to the Project Applicant, the addition of that amount to their current TSMI and FMSI fees, Caltrans Combined Share fees, and their out-of-pocket cost for additional costs for the construction of other traffic improvements to the backbone of the City's traffic network (i.e., SR 99/Herndon Avenue interchange improvements and extension of Bryan Avenue to Bullard Avenue) as conditioned by the City, would make their project economically infeasible. Therefore, Phase 1 would not be able to mitigate its cumulatively considerable impact and would create a significant unavoidable impact at this location.

Golden State Boulevard/Carnegie Avenue: Phase 1 would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to LOS F in the p.m. peak hour. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. The installation of a traffic signal would improve LOS to satisfactory conditions. With the implementation of the improvement, the intersection would operate at LOS C in the a.m. peak hour and LOS B in p.m. peak hour. The project's maximum contribution to this intersection is 12.9 percent (234 vehicles) in the p.m. peak hour which would be cumulatively considerable. The estimated cost for the installation of a traffic signal at this location (adjacent to the UP railroad tracks) is approximately $450,000. According to the Project Applicant, the addition of that amount to their current TSMI and FMSI fees, Caltrans Combined Share fees, and their out-of-pocket cost for additional costs for the construction of other traffic improvements to the backbone of the City's traffic network (i.e., SR 99/Herndon Avenue interchange improvements and extension of Bryan Avenue to Bullard Avenue) as conditioned by the City, would make their project economically infeasible. Therefore, Phase 1 would not be able to mitigate its cumulatively considerable impact and would create a significant unavoidable impact at this location.

Grantland Avenue/Barstow Avenue: Phase 1 would create a significant project impact in the p.m. peak hour. Phase 1 would be required to convert the intersection traffic control from a two-way stop controlled intersection to an all-way stop controlled intersection to mitigate the significant project impact. With the implementation of the improvement the intersection would operate with LOS C in both peak hours.

SR 99 southbound ramps/Shaw Avenue: Phase 1 would contribute to a significant cumulative impact at LOS E in the a.m. peak hour and LOS D in the p.m. peak hour. Phase 1 will be required to pay the Caltrans Combined Share fee to mitigate its proportional share of cumulative impacts to State facilities. The widening of the Shaw Avenue overcrossing to add a second eastbound through lane would improve LOS to satisfactory levels (LOS C or better). This improvement has already been identified through Caltrans District 6.

Significant Intersection Queuing Impacts

Based on the 2010 plus Phase 1 traffic analysis discussed above, the following study intersections are forecast to have significant impacts to lane storage queues (addition of more than one vehicle length to a baseline queue that is over-capacity) when compared to the 2010 baseline condition. The following are improvements required to mitigate these impacts:

TRAF-8 Prior to obtaining a Certificate of Occupancy, Phase 1 shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study intersection queues in the 2010 plus Phase 1 condition:

SR 99 southbound off-ramp/Herndon Avenue: Phase 1 shall remove the SR 99 southbound off-ramp to Grantland Avenue as part of the signalization of Parkway Drive/Herndon Avenue and the SR 99 northbound off-ramp/Herndon Avenue.

SR 99 northbound off-ramp/Herndon Avenue: Per TRAF-3, Phase 1 shall widen the northbound off-ramp to three lanes to provide dual-right-turn lanes and a left-turn lane. Per the City Traffic Engineer, the length of the additional right-turn lane shall be calculated based on the 95th percentile queue in 2025 (510 feet). This traffic signal and off-ramp widening is included in TSMI Fee and can be credited/reimbursed. The 2010 plus Phase 1 queue at this

intersection is 522 feet in the p.m. peak hour. Extension of the northbound right turn lanes to 510 feet would mitigate the queuing impact.

Golden State Boulevard/Herndon Avenue: In addition to the already funded 2009 geometric improvements slated for this intersection, additional extensions of the planned turn lanes are required as follows: extend the southbound dual left turn lane by 175 feet to 325 feet; extend the westbound right turn lane by 270 feet to 350 feet. Since these extensions are beyond the City's standard 250 foot left turn lane, this mitigation would not be reimbursable/credited under the FMSI fee. Although improvements have been identified to mitigate the significant cumulative impact at this intersection, the City has indicated that the traffic added by the proposed project would not be cumulatively considerable since the maximum project contribution to the southbound left turn lane would be 7.7 percent (45 vehicles), and 9.6 percent (47 vehicles) to the westbound right turn lane, both in the p.m. peak hour. The City has determined that payment of FMSI fee would mitigate the Phase 1 queuing impacts at this intersection.

Bryan Avenue/Herndon Avenue: Per TRAF-3, Phase 1 will construct this intersection to its ultimate configuration with 250 foot dual left turn lanes at all approaches. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Based on the queuing analysis, the eastbound left turn lane would require an extension of 45 feet to 210 feet and the queuing impacts would be mitigated.

Polk Avenue/Herndon Avenue: As an additional mitigation measure, Phase 1 will be constructing Bryan Avenue to Bullard Avenue north of Carnegie Avenue to mitigate significant intersection and roadway impacts created by Phase 1. With implementation of the Bryan Avenue extension as a two-lane divided roadway, the significant queuing impact at this intersection would be reduced to baseline (without project) levels and queuing impacts would be mitigated.

Milburn Avenue/Herndon Avenue: The southbound left turn lane would need to be extended by 95 feet to 325 feet; the southbound right turn lane would need to be extended by 85 feet to 185 feet; the eastbound left turn lane would need to be extended by 55 feet to 285 feet; and the westbound right turn would need to be extended by 145 feet to 285 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, only the southbound right turn lane would be reimbursable/credited towards the FMSI fee. Although improvements have been identified to mitigate the significant cumulative impact at this intersection, the City has indicated that the traffic added by the proposed project would not be cumulatively considerable. The maximum project contribution to the southbound left turn lane would be zero percent (zero vehicles), the southbound right turn lane would be 5.1 percent (18 vehicles), the eastbound left turn lane would be 4.6 percent (22 vehicles), and zero percent (zero vehicles) to the westbound right turn lane, all in the p.m. peak hour. The City has determined that payment of the FMSI fee would mitigate the Phase 1 queuing impacts at this location.

Brawley Avenue/Herndon Avenue: The northbound left turn lane would need to be extended by 395 feet to 500 feet and the northbound right turn lane would need to be extended by 200 feet to 275 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Although improvements have been identified to mitigate the significant cumulative impact at this intersection, the City has indicated that the traffic added by the proposed project would not be cumulatively considerable for the northbound right turn lane, but cumulatively considerable for the northbound left turn lane. The maximum project contribution to the northbound left turn lane would be 15.4 percent (57 vehicles), and zero percent (zero vehicles) to the northbound right turn lane, both in the p.m. peak hour. However, the City has indicated that a second (dual) northbound left turn lane will be constructed in 2009 by an approved project (OSH, C07359). The City has determined that payment of the FMSI fee would mitigate the Phase 1 queuing impacts at this location.

Marks Avenue/Herndon Avenue: The northbound right turn lane would need to be extended by 55 feet to 180 feet; the southbound right turn lane would need to be extended by 140 feet to300 feet; and the eastbound right turn lane would need to be extended by 35 feet to 85 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the northbound right turn lane and southbound left turn lane extensions would be reimbursable/credited towards the FMSI fee. Although improvements have been identified to mitigate the significant cumulative impact at this intersection, the City has indicated that the traffic added by the proposed project would not be cumulatively considerable for all impacted queues, except the queue for the eastbound right turn lane. The maximum project contribution to the northbound right turn lane would be zero percent (zero vehicles), the southbound right turn lane would be 2.6 percent (nine vehicles), and 21.5 percent (34 vehicles) to the eastbound right turn lane, all in the p.m. peak hour. However, the City has indicated that Federal Grant Funds have been secured and funding would occur by late 2010 for the extension of the eastbound right turn lane to 150 feet. The City has determined that payment of the FMSI fee would mitigate the Phase 1 queuing impacts at this location.

West Avenue/Herndon Avenue: The northbound right turn lane would need to be extended by 550 feet to 615 feet; and the southbound left turn lane would need to be extended by 235 feet to 420 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Although improvements have been identified to mitigate the significant cumulative impact at this intersection, the City has indicated that the traffic added by the proposed project would not be cumulatively considerable. The maximum project contribution to the northbound right turn lane would be zero percent (zero vehicles), and zero percent (zero vehicles) to the southbound left turn lane, both in the p.m. peak hour. The City has determined that payment of the FMSI fee would mitigate the Phase 1 queuing impacts at this location.

Palm Avenue/Herndon Avenue: The southbound right lane would need to be extended by 1,290 feet to 1,520 feet; and the eastbound left turn lane would need to be extended by 320 feet to 565 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Although improvements have been identified to mitigate the significant cumulative impact at this intersection, the City has indicated that the traffic added by the proposed project would not be cumulatively considerable. The maximum project contribution to the southbound right turn lane would be 3.3 percent (35 vehicles), and 3.7 percent (36 vehicles) to the eastbound left turn lane, both in the p.m. peak hour. The City has determined that payment of the FMSI fee would mitigate the Phase 1 queuing impacts at this location.

Blackstone Avenue/Herndon Avenue: The southbound right turn lane would need to be extended by 380 feet to 470 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Although an improvement has been identified to mitigate the significant cumulative impact at this intersection, the City has indicated that the traffic added by the proposed project would not be cumulatively considerable. The maximum project contribution to the southbound right turn lane would be 7.5 percent (18 vehicles) in the a.m. peak hour. The City has determined that payment of the FMSI fee would mitigate the Phase 1 queuing impacts at this location.

Bullard Avenue/Carnegie Avenue: The northbound left turn lane would need to be extended by 175 feet to 400 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Although an improvement has been identified to mitigate the significant cumulative impact at this intersection, the City has indicated that the traffic added by the proposed project would not be cumulatively considerable. The maximum project contribution to the northbound left turn lane would be zero percent (zero vehicles) in the a.m. peak hour. The City has determined that payment of the FMSI fee would mitigate the Phase 1 queuing impacts at this location.

Palm Avenue/Bullard Avenue: The northbound left turn lane would need to be extended by 110 feet to 300 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Although an improvement has been identified to mitigate the significant cumulative impact at this intersection, the City has indicated that the traffic added by the proposed project would not be cumulatively considerable. The maximum project contribution to the northbound left turn lane would be zero percent (zero vehicles) in the a.m. peak hour. The City has determined that payment of the FMSI fee would mitigate the Phase 1 queuing impacts at this location.

SR 99 southbound ramps/Shaw Avenue: The eastbound right turn lane would need to be extended by 55 feet to 210 feet; and the westbound left turn lane would need to be extended by 330 feet to 540 feet. This improvement has already been identified through Caltrans District 6 and Phase 1 would contribute its fair share (Combined Formula as provided in the Interim Agreement between the City and Caltrans) toward this improvement. Payment of the Caltrans Combined fee would mitigate the Phase 1 queuing impacts at this location.

SR 99 northbound ramps/Shaw Avenue: The southbound right turn lane would need to be extended by 125 feet to 175 feet. This improvement has already been identified through Caltrans District 6 and Phase 1 would contribute its fair share (Combined Formula as provided in the Interim Agreement between the City and Caltrans) toward this improvement. Payment of the Caltrans Combined fee would mitigate the Phase 1 queuing impacts at this location.

Golden State Boulevard/Shaw Avenue: The northbound right turn lane would need to be extended by 935 feet to 1,075 feet; the southbound left turn lane would need to be extended by 265 feet to 430 feet; and the westbound left turn lane would need to be extended by 510 feet to 700 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Although improvements have been identified to mitigate the significant cumulative impact at this intersection, the City has indicated that the traffic added by the proposed project would not be cumulatively considerable. The maximum project contribution to the northbound right turn lane would be zero percent (zero vehicles), the southbound left turn lane would be 12.0 percent (27 vehicles), and zero percent (zero vehicles) on the westbound left turn lane, all in the p.m. peak hour. The City has determined that payment of the FMSI fee would mitigate the Phase 1 queuing impacts at this location.

Brawley Avenue/Shaw Avenue: The southbound left turn lane would need to be extended by 80 feet to 300 feet; and the westbound right turn lane would need to be extended by 30 feet to 150 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the westbound right turn lane would be reimbursable/credited towards the FMSI fee. Although improvements have been identified to mitigate the significant cumulative impact at this intersection, the City has indicated that the traffic added by the proposed project would not be cumulatively considerable. The maximum project contribution to the southbound left turn lane would be 9.9 percent, and 7.1 percent on the westbound right turn lane, both in the p.m. peak hour. The City has determined that payment of the FMSI fee would mitigate the Phase 1 queuing impacts at this location.

Marks Avenue/Shaw Avenue: The northbound left turn lane would need to be extended by 55 feet to 245 feet; the northbound right turn lane would need to be extended by 140 feet to 245 feet; and the eastbound left turn lane would need to be extended by 70 feet to 305 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the northbound left turn lane and right turn lane would be reimbursable/credited towards the FMSI fee. Although

improvements have been identified to mitigate the significant cumulative impact at this intersection, the City has indicated that the traffic added by the proposed project would not be cumulatively considerable. The maximum project contribution to the northbound left turn lane would be zero percent, the northbound right turn lane would also be zero percent, and 0.4 percent on the eastbound left turn lane, all in the p.m. peak hour. The City has determined that payment of the FMSI fee would mitigate the Phase 1 queuing impacts at this location.

West Avenue/Shaw Avenue: The northbound right turn lane would need to be extended by 35 feet to 110 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the northbound right turn lane would be reimbursable/credited towards the FMSI fee. Although an improvement has been identified to mitigate the significant cumulative impact at this intersection, the City has indicated that the traffic added by the proposed project would not be cumulatively considerable. The maximum project contribution to the northbound right turn lane would be zero percent in both peak hours. The City has determined that payment of the FMSI fee would mitigate the Phase 1 queuing impacts at this location.

SR 99 southbound ramps/Ashlan Avenue: The northbound right turn lane would need to be extended by 150 feet to 250 feet. This improvement has already been identified through Caltrans District 6 and Phase 1 would contribute its fair share (Combined Formula as provided in the Interim Agreement between the City and Caltrans) toward this improvement. Payment of the Caltrans Combined fee would mitigate the Phase 1 queuing impacts at this location.

SR 99 northbound ramps/Ashlan Avenue: The northbound left turn lane would need to be extended by 100 feet to 350 feet; the northbound right turn lane would need to be extended by 40 feet to 560 feet; the southbound right turn lane would need to be extended by 150 feet to 360 feet; the eastbound left turn lane would need to be extended by 80 feet to 400 feet; and the westbound right turn lane would need to be extended by 665 feet to 750 feet. This improvement has already been identified through Caltrans District 6 and Phase 1 would contribute its fair share (Combined Formula as provided in the Interim Agreement between the City and Caltrans) toward this improvement. Payment of the Caltrans Combined fee would mitigate the Phase 1 queuing impacts at this location.

Figure 9-7 illustrates the mitigation measures needed for the significant traffic impacts created by the addition of Phase 1 traffic to the 2010 baseline condition. Table 9-14 shows the improved levels of service with the implementation of the mitigation measures.

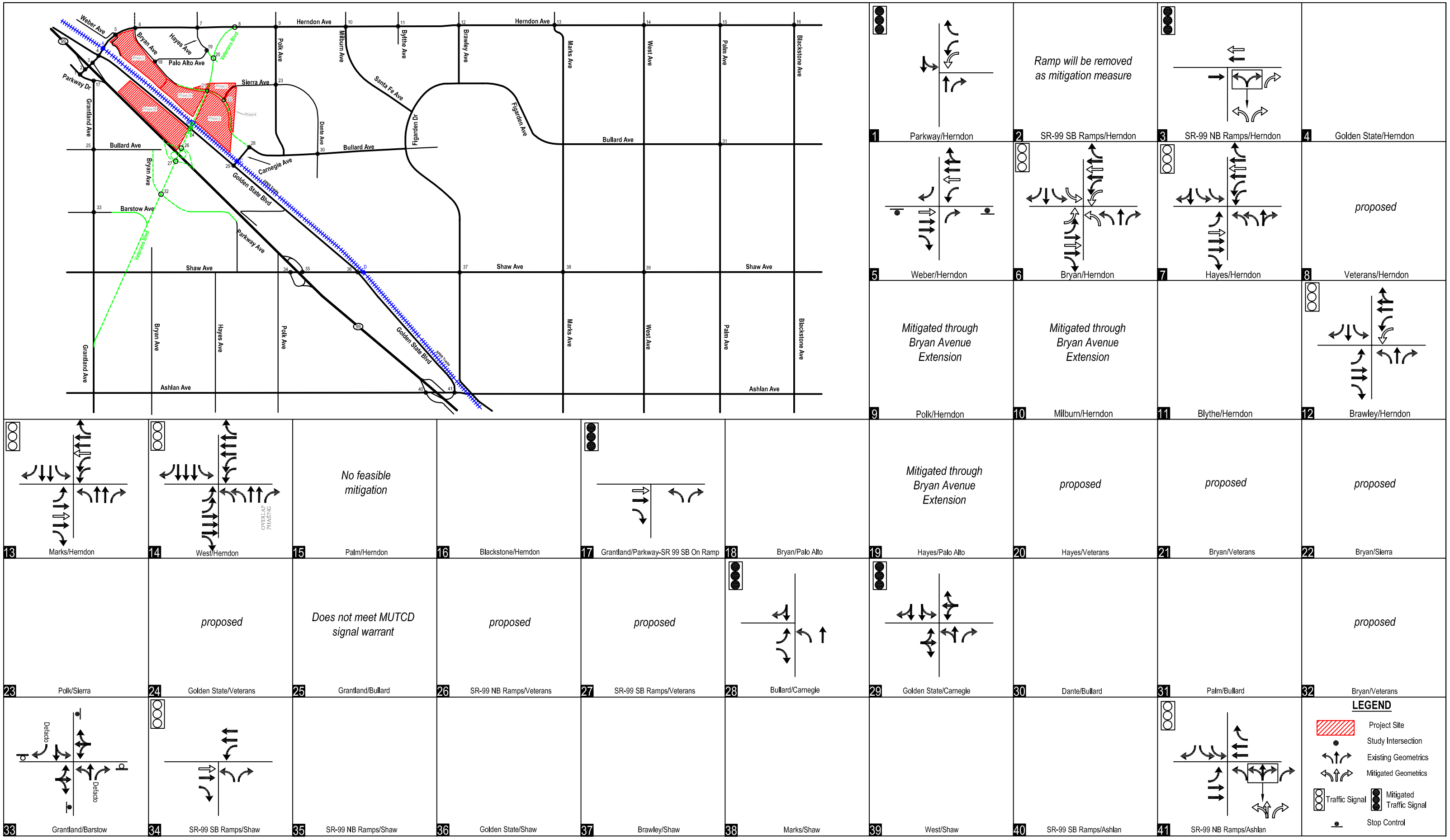


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Figure 9-7
Year 2010 + Phase 1 Mitigation Measures

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9-14 - Year 2010 plus Phase 1 Intersection Levels of Service with Mitigation Measures

		2010 Baseline + Project Phase 1				With Bryan Avenue plus Mitigation			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	*signal*	>50	F	>50	F	12.2	B	15.5	B
2 99 SB Ramps/Herndon		>50	F	>50	F	--	--	--	--
3 99 NB Ramps/Herndon	*signal*	>50	F	>50	F	16.4	B	40.7	D
4 Golden State/Herndon	signal	34.6	C	54.6	D				
5 Weber/Herndon	unsignalized	23.5	C	>50	F	11.7	B	19.3	C
6 Bryan/Herndon	signal	>80	F	>80	F	29.5	C	35.6	D
7 Hayes/Herndon	signal	24.5	C	71.4	E	21.2	C	21.4	C
8 Veterans/Herndon	signal	--	--	--	--	--	--	--	--
9 Polk/Herndon	signal	21.6	C	73.5	E	23.7	C	28.1	C
10 Milburn/Herndon	signal	28.6	C	56.7	E	28.4	C	49.8	D
11 Blythe/Herndon	signal	12.8	B	20.8	C				
12 Brawley/Herndon	signal	>80	F	>80	F	23.9	C	51.0	D
13 Marks/Herndon	signal	68.1	E	>80	F	33.9	C	44.4	D
14 West/Herndon	signal	67.6	E	>80	F	61.0	E	51.4	D
15 Palm/Herndon	signal	56.8	E	>80	F	*no feasible mitigaiton*			
16 Blackstone/Herndon	signal	28.9	C	45.5	D				
17 Grantland/Parkway	*signal*	>50	F	>50	F	10.3	B	10.6	B
18 Bryan/Palo Alto	signal	21.9	C	39.6	D				
19 Hayes/Palo Alto	unsignalized	19.6	C	>50	F	12.7	B	8.8	A
20 Veterans/Hayes	unsignalized	--	--	--	--				
21 Veterans/Bryan	signal	--	--	--	--				
22 Bryan/Sierra	unsignalized	--	--	--	--				
23 Polk/Sierra	unsignalized	12.9	B	16.6	C				
24 Golden State/Veterans	signal	--	--	--	--				
25 Grantland/Bullard	unsignalized	37.0	E	46.2	E	6.2	A	5.4	A
26 99 NB Ramps/Veterans	signal	--	--	--	--				
27 99 SB Ramps/Veterans	signal	--	--	--	--				
28 Carnegie/Bullard	*signal*	45.1	E	>50	F	24.9	C	32.6	C
29 Golden State/Carnegie	*signal*	>50	F	>50	F	22.5	C	16.7	B
30 Dante/Bullard	unsignalized	12.1	B	12.7	B				
31 Palm/Bullard	signal	42.3	D	62.8	E	42.3	D	65.8	E
32 Veterans/Bryan	signal	--	--	--	--				
33 Grantland/Barstow	signal	24.3	C	>50	F	24.5	C	17.0	C
34 99 SB Ramps/Shaw	signal	66.1	E	40.8	D	30.5	C	22.2	C
35 99 NB Ramps/Shaw	signal	21.2	C	28.3	C				
36 Golden State/Shaw	signal	53.1	D	>80	F	52.5	D	170.2	F
37 Brawley/Shaw	signal	24.1	C	52.9	D	24.3	C	58.8	E
38 Marks/Shaw	signal	30.7	C	48.5	D				
39 West/Shaw	signal	26.5	C	33.0	C				
40 99 SB Ramps/Ashlan	signal	25.1	C	24.6	C				
41 99 NB Ramps/Ashlan	signal	35.6	D	>80	F	33.9	C	72.7	E

Significant Roadway Segment Impacts

Based on the 2010 plus Phase 1 traffic analysis discussed above, the following study roadway segments are forecast to have significant impacts with addition of Phase 1 traffic. The following are improvements required to mitigate these impacts:

TRAF-9 Prior to obtaining a Certificate of Occupancy, Phase 1 shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study roadway segments in the 2010 plus Phase 1 condition:

Bryan Avenue extension from North Cresta Avenue to Bullard Avenue (northern terminus): As an additional mitigation measure to mitigate project impacts to study intersections/queues, and roadway segments, the City is requiring Phase 1 to construct the segment of Bryan Avenue, from North Cresta Avenue to Bullard Avenue, at it's current terminus north of Carnegie Avenue. Phase 1 shall construct this segment of Bryan Avenue to have a two lane divided arterial. Ultimately this roadway will have four lanes. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Phase 1 will construct the Bryan Avenue/North Cresta Avenue traffic signal (ITS interconnect with a 2070 controller per the PW ITS Standards and an ITS camera for operation monitoring) and intersection to buildout lane configurations of a single left turn lane, two through lanes with a shared right turn on the northbound approach on Bryan Avenue; a single left turn lane, two through lanes, and a dedicated right turn lane on the southbound approach of Bryan Avenue; a single left turn lane and single right turn lane on, with restricted through access on the eastbound approach from Phase 1; and a single left turn lane and shared through and right turn lane on the westbound approach on North Cresta Avenue. The intersection shall have loop detection that is not bundled so the intersection can count traffic volumes to be utilized in the ITS program. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Based on the queuing analysis all left turn pockets would be adequate to serve 2010 plus Phase 1 traffic. This traffic signal is not included in the TSMI Fee and will be constructed by Phase 1. For Phase 2A and 2B, Veterans Boulevard is planned to be extended from Herndon Avenue to this extension of Bryan Avenue.

Herndon Avenue, Parkway Drive to Golden State Boulevard: Phase 1 would contribute to a significant cumulative impact on this roadway segment. Phase 1 will construct (primarily slurry and restripe) Herndon Avenue to have two westbound lanes and one eastbound lane between Parkway Drive and the SR 99 northbound ramps. Between the SR 99 northbound ramps and Golden State Boulevard, Phase 1 will construct two additional through lanes for a total of three eastbound lanes. Based on comments from Caltrans District 6 this would be a feasible improvement resulting in six foot shoulders underneath the mainline structure. This improvement mainly requires slurry and restriping of the roadway with minor roadway work on either end of the structure. With the implementation of this improvement, the westbound segment from Parkway Drive to the mainline structure would continue to operate with unsatisfactory LOS (LOS E), and the Caltrans-controlled segment underneath the mainline would also continue to operate with unsatisfactory LOS in both directions (LOS D eastbound, and LOS E westbound). Therefore, Phase 1 would contribute to a significant unavoidable impact.

Herndon Avenue, east of Golden State Boulevard: Phase 1 would contribute to a significant cumulative impact on this roadway segment. Phase 1 will construct Herndon Avenue to six lanes with a raised landscaped median island between Golden State Boulevard and Hayes Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited. With the implementation of this improvement, this roadway segment would operate with satisfactory LOS (LOS C and LOS D).

Herndon Avenue, west of Bryan Avenue: Phase 1 would contribute to a significant cumulative impact on this roadway segment. Phase 1 will construct Herndon Avenue to six lanes with a raised landscaped median island between Golden State Boulevard and Hayes Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited. With the implementation of this improvement, this roadway segment would operate with satisfactory LOS (LOS C).

Herndon Avenue, Bryan Avenue to Hayes Avenue: Phase 1 would contribute to a significant cumulative impact on this roadway segment. Phase 1 will construct Herndon Avenue to six lanes with a raised landscaped median island between Golden State Boulevard and Hayes Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited. With the implementation of this improvement, this roadway segment would operate with satisfactory LOS (LOS C).

Herndon Avenue, Hayes Avenue to Polk Avenue: Phase 1 would create a significant impact on this roadway segment. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. Herndon Avenue would need to be widened to six lanes with a raised landscaped median island in this segment. With implementation of this improvement, the roadway segment would operate with satisfactory LOS (LOS C). The project's maximum contribution to this segment is 0.32 V/C in the eastbound direction, and 0.27 V/C in the westbound direction, in the p.m. peak hour which would be cumulatively considerable. In order to effectively provide a third eastbound through lane, the eastbound return lane, east of Polk Avenue would need to be constructed. The return lane would be located on a section of the existing four lane overpass to the BNSF railroad tracks. The estimated cost for the construction of an eastbound return lane is approximately $5,700,000. According to the Project Applicant, the addition of that amount to their current TSMI and FMSI fees, Caltrans Combined Share fees, and their out-of-pocket cost for the additional construction of other traffic improvements to the backbone of the City's traffic network (i.e., SR 99/Herndon Avenue interchange improvements and extension of Bryan Avenue to Bullard Avenue) as conditioned by the City, would make their project economically infeasible. Therefore, Phase 1 would not be able to mitigate its significant project impact and would create a significant unavoidable impact at this location.

Herndon Avenue, Polk Avenue to Milburn Avenue: Phase 1 would contribute to a significant cumulative impact on this roadway segment. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. Herndon Avenue would need to be widened to six lanes with a raised landscaped median island in this segment. With implementation of this improvement, the roadway segment would operate with satisfactory LOS (LOS C and LOS D). The project's maximum contribution to this segment is 0.30 V/C in the eastbound direction, and 0.23 V/C in the westbound direction, in the p.m. peak hour which would be cumulatively considerable. In order to effectively provide a third

eastbound through lane, the eastbound return lane, east of Polk Avenue would need to be constructed. The return lane would be located on a section of the existing four lane overpass to the BNSF railroad tracks. The estimated cost for the construction of an eastbound return lane is approximately $5,700,000. According to the Project Applicant, the addition of that amount to their current TSMI and FMSI fees, Caltrans Combined Share fees, and their out-of-pocket cost for the additional construction of other traffic improvements to the backbone of the City's traffic network (i.e., SR 99/Herndon Avenue interchange improvements and extension of Bryan Avenue to Bullard Avenue) as conditioned by the City, would make their project economically infeasible. Therefore, Phase 1 would not be able to mitigate its significant project impact and would create a significant unavoidable impact at this location.

Herndon Avenue, Brawley Avenue to Marks Avenue: Phase 1 would contribute to a significant cumulative impact on this roadway segment. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. With the construction of Herndon Avenue to six lanes with a raised landscaped median island in this segment, this roadway segment is still forecast to operate with unsatisfactory LOS in both directions during the p.m. peak hour. The project's maximum contribution to this segment is 0.19 V/C in the eastbound direction, and 0.15 V/C in the westbound direction which would be cumulatively considerable. Therefore, the project would create a significant unavoidable impact at this location however; *this segment of Herndon Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Herndon Avenue, Marks Avenue to West Avenue: Phase 1 would contribute to a significant cumulative impact on this roadway segment. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. However, this roadway segment is already built to its ultimate General Plan configuration. The project's maximum contribution to this segment is 0.11 V/C in the eastbound direction, and 0.07 V/C in the westbound direction which would not be cumulatively considerable. However, *this segment of Herndon Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Herndon Avenue, Palm Avenue to Blackstone Avenue: Phase 1 would contribute to a significant cumulative impact on this roadway segment. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. However, this roadway segment is already built to its ultimate General Plan configuration. The project's maximum contribution to the westbound direction is 0.05 V/C which would not be cumulatively considerable. However, *this segment of Herndon Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Golden State Boulevard, south of Herndon Avenue: Phase 1 would contribute to a significant cumulative impact on this roadway segment. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. The construction of a second southbound through lane on this roadway segment would improve LOS to LOS C. The project's maximum contribution to this segment is 0.06 V/C in the southbound direction, in the p.m. peak hour, which is not cumulatively considerable.

Shaw Avenue, west of SR 99 southbound ramps: Phase 1 would contribute to a significant cumulative impact on this roadway segment. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. The construction of Shaw Avenue to four lanes is required on this roadway segment to improve to LOS D. The project's maximum contribution to this segment is 2.4 percent (27 vehicles) in the eastbound direction, and 1.6 percent (26 vehicles) in the westbound direction, in the p.m. peak hour, which would not be cumulatively considerable.

Shaw Avenue, SR 99 southbound ramps to SR 99 northbound ramps: Phase 1 would contribute to a significant cumulative impact on this roadway segment. Per comments from Caltrans, Phase 1 will pay its Combined-Share (fair-share) for the future construction of a second eastbound through lane on this roadway segment. This improvement has been identified and programmed by Caltrans. Payment of the Combined Share fee would mitigate the cumulative impact of Phase 1 at this location.

Shaw Avenue, SR 99 northbound ramps to Golden State Boulevard: Phase 1 would contribute to a significant cumulative impact on this roadway segment. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. The construction of Shaw Avenue to six lanes on this roadway segment would improve LOS to LOS C and LOS D. The project's maximum contribution to this segment is 0.1 percent (two vehicles) in the eastbound direction, and 0.3 percent (six vehicles) in the westbound direction, in the p.m. peak hour, which is not cumulatively considerable. *This segment of Shaw Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Grantland Avenue, Parkway Drive to Bullard Avenue: Phase 1 would create a significant impact on this roadway segment. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. The construction of Grantland Avenue to two southbound travel lanes with a raised landscaped median would improve LOS to LOS C. The project's maximum contribution to this segment is 0.08 V/C for the northbound direction which is not cumulatively considerable; however the contribution for the southbound direction is 0.24 V/C which is cumulatively considerable. In addition to the need for a second southbound travel lane, a traffic signal is also required at Grantland Avenue/Bullard Avenue where Phase 1 would also create a significant project impact. The estimated cost for the installation of a traffic signal and construction of second southbound through lane is approximately $1,030,000. According to the Project Applicant, the addition of that amount to their current TSMI and FMSI fees, Caltrans Combined Share fees, and their out-of-pocket cost for additional costs for the construction of other traffic improvements to the backbone of the City's traffic network (i.e., SR 99/Herndon Avenue interchange improvements and extension of Bryan Avenue to Bullard Avenue) as conditioned by the City, would make their project economically infeasible. Therefore, Phase 1 would not be able to mitigate its significant project impact and would create a significant unavoidable impact at this location.

Carnegie Avenue, Golden State Boulevard to Bullard Avenue: Phase 1 would contribute to a significant cumulative impact on this roadway segment. Phase 1 will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. The construction of a second eastbound through lane on this roadway segment would improve LOS to LOS C. The project's maximum contribution to this segment is 0.01 V/C in the eastbound direction, which would not be cumulatively considerable.

Ashlan Avenue, SR 99 southbound ramps to SR 99 northbound ramps: Phase 1 would contribute to a significant cumulative impact on this roadway segment. Per comments from Caltrans, Phase 1 will pay its Combined-Share (fair-share) for the future construction of improvements on this roadway segment. Payment of the Combined Share fee would mitigate the cumulative impact of Phase 1 at this location.

Significant Caltrans Facility Impacts

Based on the 2010 plus Phase 1 traffic analysis discussed above, the following study area Caltrans facilities are forecast to have significant impacts with addition of Phase 1 traffic. The following are improvements required to mitigate these impacts:

TRAF-10 Prior to obtaining a Certificate of Occupancy, Phase 1 shall pay their fair-share contribution towards improvements to Caltrans facilities noted below. The fair-share contribution shall be calculated per the February 2006 *Mutual Release and Settlement Agreement* between the City of Fresno and Caltrans District 6 (otherwise known as the "Interim Agreement"). This Interim Agreement provides guidance on the method for calculating a fair share to mitigate for impacts to State highways. Since Phase 1 will require a General Plan Amendment (GPA), and the GPA will increase trips over the existing use, the "Combined Formula" was used to calculate fair share. The Combined Formula is provided below:

$P = (P1/F1) + (P2 – P1)/F2$, where:

P = fair share percentage
P1 = the higher of the a.m. or p.m. peak hour project trips without GPA
P2 = the higher of the a.m. or p.m. peak hour project trips with GPA
F1 = total 2025 corresponding future peak hour traffic without project
F2 = total 2025 corresponding future peak hour traffic with project

Table 9-17 shows the calculated Combined Share costs for impacted Caltrans facilities. The following are improvements for the impacted State facilities in the 2010 plus Phase 1 condition. As noted, some of these facilities are also part of the City's TSMI and FMSI fee programs. For all other facilities, payment of the fair-share cost based on the Combined Share formula would mitigate project impacts.

Mitigation measures to the following Caltrans facilities have been discussed above, either in the measures for intersections, queuing, and/or roadway segments. For facilities not previously discussed, the needed mitigation measures are provided below.

- Parkway Drive/Herndon Avenue (impact to intersection LOS discussed above)
- SR 99 southbound off-ramp/Herndon Avenue (impacts to intersection LOS and queuing discussed above)

- SR 99 northbound off-ramp/Herndon Avenue: In addition, per Caltrans comments, the increase of peak hour volumes from 2010 plus Phase 1 traffic on the off-ramp would result in the total off-ramp exceeding 900 vph. HDM Topic 504.3(6) has an Advisory Design Standard (see HDM Topic 82.2(2)) that indicates the need to provide for a two-lane exit ramp with a 1,300 foot auxiliary lane from the SR 99 mainline. Since this improvement is required in the 2010 baseline (without Phase 1) condition, Phase 1 would only be required to contribute their fair share.
- Grantland Avenue/Parkway Drive – SR 99 southbound on-ramp: In addition, per Caltrans comments, review of 2025 plus Master Plan peak hour volumes indicates that the volumes on the southbound on-ramp from Parkway Drive and Grantland Avenue would exceed 1,500 vehicles per hour (vph). The *Highway Design Manual* (HDM) Topic 504.3(7) indicates that a two-lane entrance ramp with a 1,000 foot auxiliary lane would be required. Since this improvement is not required until 2025 plus Master Plan, Phase 1 would only be required to contribute their fair share.
- SR 99 southbound ramps/Shaw Avenue (impacts to queuing discussed above)
- SR 99 northbound ramps/Shaw Avenue (impacts to queuing discussed above)
- SR 99 southbound ramps/Ashlan Avenue (impacts to queuing discussed above)
- SR 99 northbound ramps/Ashlan Avenue (impacts to queuing discussed above)
- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (impacts to roadway segment discussed above)
- Shaw Avenue: SR 99 southbound ramps to SR 99 northbound ramps (impacts to roadway segment discussed above)
- Ashlan Avenue: SR 99 southbound ramps to SR 99 northbound ramps (impacts to roadway segment discussed above)
- SR 99 mainline southbound, Shaw Avenue to Ashlan Avenue: Phase 1 shall contribute its Combined Share percentage of cost to widen the southbound segment of SR 99, from Shaw Avenue to Ashlan Avenue, to three lanes to mitigate impacts to mainline LOS.
- SR 99 mainline northbound, Shaw Avenue to Herndon Avenue: Phase 1 shall contribute its Combined Share percentage of cost to widen this segment to three lanes plus one auxiliary lane (for total of four northbound lanes) to mitigate cumulative impacts to the weaving section between Shaw Avenue and Herndon Avenue.
- SR 99 mainline southbound, Shaw Avenue to Herndon Avenue: Phase 1 shall contribute its Combined Share percentage of cost to widen this segment to three lanes to mitigate cumulative impacts to the weaving section between Herndon Avenue and Shaw Avenue.

Table 9-17 – 2010 + Phase 1 Combined Share Percentages for Impacted Caltrans Facilities

Location	GP Zone P1	Proposed Phase 1 P2	2025 GP (No proj) F1	2025 + GPA (Phase 1) F2	Combined-Share P
RAMP INTERSECTIONS					
- SR 99 NB off-ramp/Herndon Avenue	32	940	1,432	2,416	40.51%
- Parkway Drive/Herndon Avenue	10	656	807	1,507	45.40%
- Parkway Dr/Grantland-SR 99 SB on-ramp	10	638	785	1,469	45.41%
- SR 99 SB ramps/Shaw Avenue	2	53	5,276	5,325	0.99%
- SR 99 NB ramps/Shaw Avenue	1	33	5,815	5,866	0.56%
- SR 99 SB ramps/Ashlan Avenue	5	65	3,466	3,549	1.84%
- SR 99 NB ramps/Ashlan Avenue	7	0	4,686	4,686	0.00%
- SR 99 SB off-ramp to Parkway Drive	7	4	1,170	1,174	0.34%
OVER-/UNDERCROSSINGS					
- Shaw Ave overcrossing EB direction	1	27	1,710	1,728	1.56%
- Ashlan Ave overcrossing EB direction	7	30	1,672	1,701	1.77%
AUXILIARY LANES					
- SR 99 NB off-ramp to Herndon Ave (aux lane)	19	280	672	952	30.24%
- SR 99 SB on-ramp from Parkway Dr (aux lane)	5	257	586	864	30.75%
MAINLINE LANES					
- SR 99 NB n/o Herndon Avenue	2	107	5,270	5,377	1.99%
- SR 99 SB n/o Herndon Avenue	6	34	4,913	4,947	0.69%
- SR 99 NB (future) Veterans Blvd to Herndon Ave	19	342	4,974	5,350	6.46%
- SR 99 SB Herndon Ave to (future) Veterans Blvd	5	477	4,666	5,158	9.29%
- SR 99 NB Shaw Ave to (future) Veterans Blvd	72	342	6,077	6,453	5.39%
- SR 99 SB (future) Veterans Blvd to Shaw Ave	28	477	5,912	6,404	7.50%
- SR 99 NB Ashlan Ave to Shaw Ave	72	273	6,301	6,550	4.20%
- SR 99 SB Shaw Ave to Ashlan Ave	26	470	6,031	6,486	7.26%
- SR 99 NB s/o Ashlan Avenue	64	146	7,014	7,099	2.06%
- SR 99 SB s/o Ashlan Avenue	22	67	7,057	7,410	0.94%

Note:

- "Combined" share percentage is determined by the following formula: P=(P1/F1)+(P2-P1)/F2.

Significant Impacts to Access and Palo Alto Avenue (cut-through traffic)

Based on the 2010 plus Phase 1 traffic analysis discussed above, no significant impacts were found regarding project access and capacity impacts to the Bryan Avenue/Palo Alto intersection and the roadway segment of Palo Alto Avenue, between Bryan Avenue and Hayes Avenue. In regards to the potential for cut-through traffic, Phase 1 will be required to signalize and restrict eastbound and westbound through access at Bryan Avenue/Palo Alto Avenue to minimize cut-through traffic (see TRAF-7), as well as, construct the new extension of Bryan Avenue, from North Cresta Avenue to Bullard Avenue, north of Carnegie Avenue (see TRAF-9). In addition to improved local circulation resulting in reduced intersection LOS and queuing impacts, these measures would re-route Phase 1 traffic, as well as some school related traffic, from Palo Alto Avenue to Bryan Avenue (destined to the Figarden area). However, the project applicant of Phase 1 understands the potential for cut-through traffic to occur along Palo Alto Avenue and will adhere to the following additional mitigation measure:

TRAF-11 Prior to issuance of a Certificate of Occupancy, Phase 1 shall obtain approval from the adjacent School District and the City Public Works Department to install effective and feasible traffic calming devices along Palo Alto Avenue to further discourage potential cut-through traffic from Phase 1 to utilize Palo Alto Avenue. The traffic calming devices shall be selected from the "toolbox" of approved devices from the Institute of Transportation Engineers (ITE). Installation of these devices shall allow for safe and efficient passage of school-related traffic, neighborhood-related traffic, and service-related traffic (refuse collection trucks, delivery trucks, and emergency vehicles).

Year 2012 plus Phases 1 and 2

Traffic Volumes and Geometrics

Figure 9-8 illustrates the study area intersection geometrics and traffic control for the 2012 plus Phases 1 and 2 (2A and 2B) condition. For the Phase 2 condition, in addition to the existing geometrics and traffic control, the proposed project would provide the following improvements:

- Construct the extension of Veterans Boulevard from Herndon Avenue to Bryan Avenue. This extension of Veterans Boulevard would alleviate project traffic volumes at the Bullard Avenue/Carnegie Avenue and Bryan Avenue/Herndon Avenue intersections.
- Extend Sierra Avenue westward to connect with the extension of Bryan Avenue.
- Mitigation measures required from Phase 1 (notably SR 99/Herndon Avenue ramp improvements and Bryan Avenue extension from North Cresta Avenue to Bullard Avenue).

The Year 2012 plus Phases 1 and 2 weekday a.m. and p.m. peak hour traffic volumes were determined by adding the weekday project trip assignment to the 2012 baseline volumes. Figure 9-9 illustrates the resulting year 2012 plus Phases 1 and 2 weekday a.m. and p.m. peak hour traffic volumes.

Intersection Levels of Service

Table 9-18 presents the results of the year 2012 plus Phases 1 and 2 intersection LOS for the weekday peak hours as calculated in Synchro. In addition, the table also compares the Phases 1 and 2 LOS with the year 2012 baseline LOS and also indicates the project contribution at those intersections that are forecast to operate, or continue to operate, with unsatisfactory LOS (i.e., LOS E or F).

According to the table and based on the City's significance criteria, the following study intersections would be significantly impacted by the addition of Phases 1 and 2 to 2012 baseline traffic. Therefore, the proposed project would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or more at LOS E or F) at the following study intersections:

- Golden State Boulevard/Herndon Avenue (LOS C to E in p.m.)
- Secondary Phase 1 access (former Weber Avenue)/Herndon Avenue (LOS C to F in p.m.)
- Bryan Avenue/Herndon Avenue (LOS C to E in p.m.)
- Milburn Avenue/Herndon Avenue (LOS D to E in p.m.)
- Brawley Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS E in p.m.)
- Marks Avenue/Herndon Avenue (LOS D to E in p.m.)
- Palm Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS F in p.m.)
- Polk Avenue/Sierra Avenue (LOS B to F in p.m.)
- Grantland Avenue/Bullard Avenue (LOS E to F in a.m., LOS D to F in p.m.)
- Dante Avenue/Bullard Avenue (LOS C to F in p.m.)
- Palm Avenue/Bullard Avenue (LOS C to F in a.m.; LOS D to E in p.m.)
- Grantland Avenue/Barstow Avenue (LOS C to F in p.m.)
- SR 99 southbound ramps/Shaw Avenue (LOS E to F in a.m.; LOS C to D in p.m.)
- Golden State Boulevard/Shaw Avenue (additional delay ≥5 seconds to LOS F in p.m.)

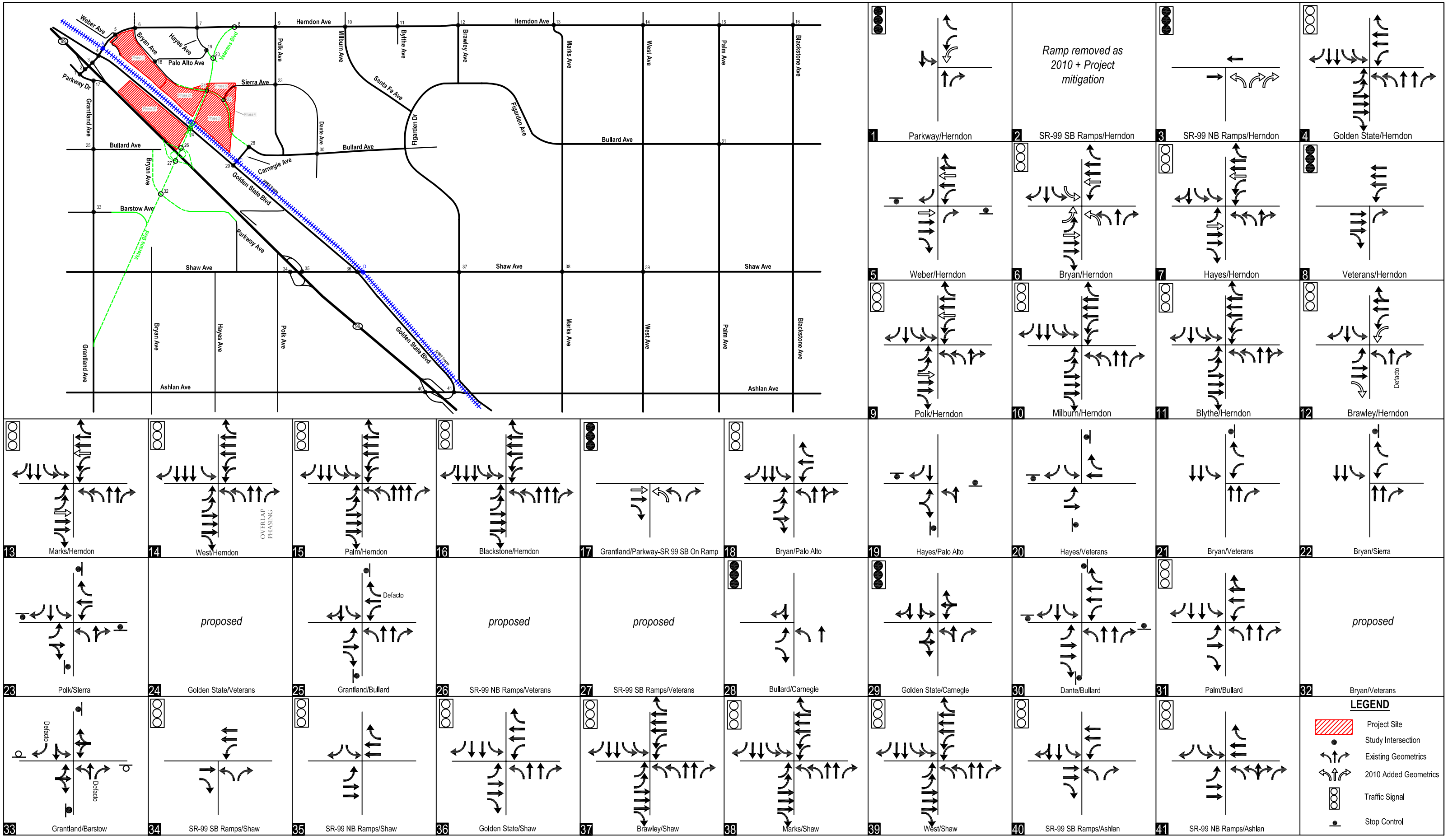

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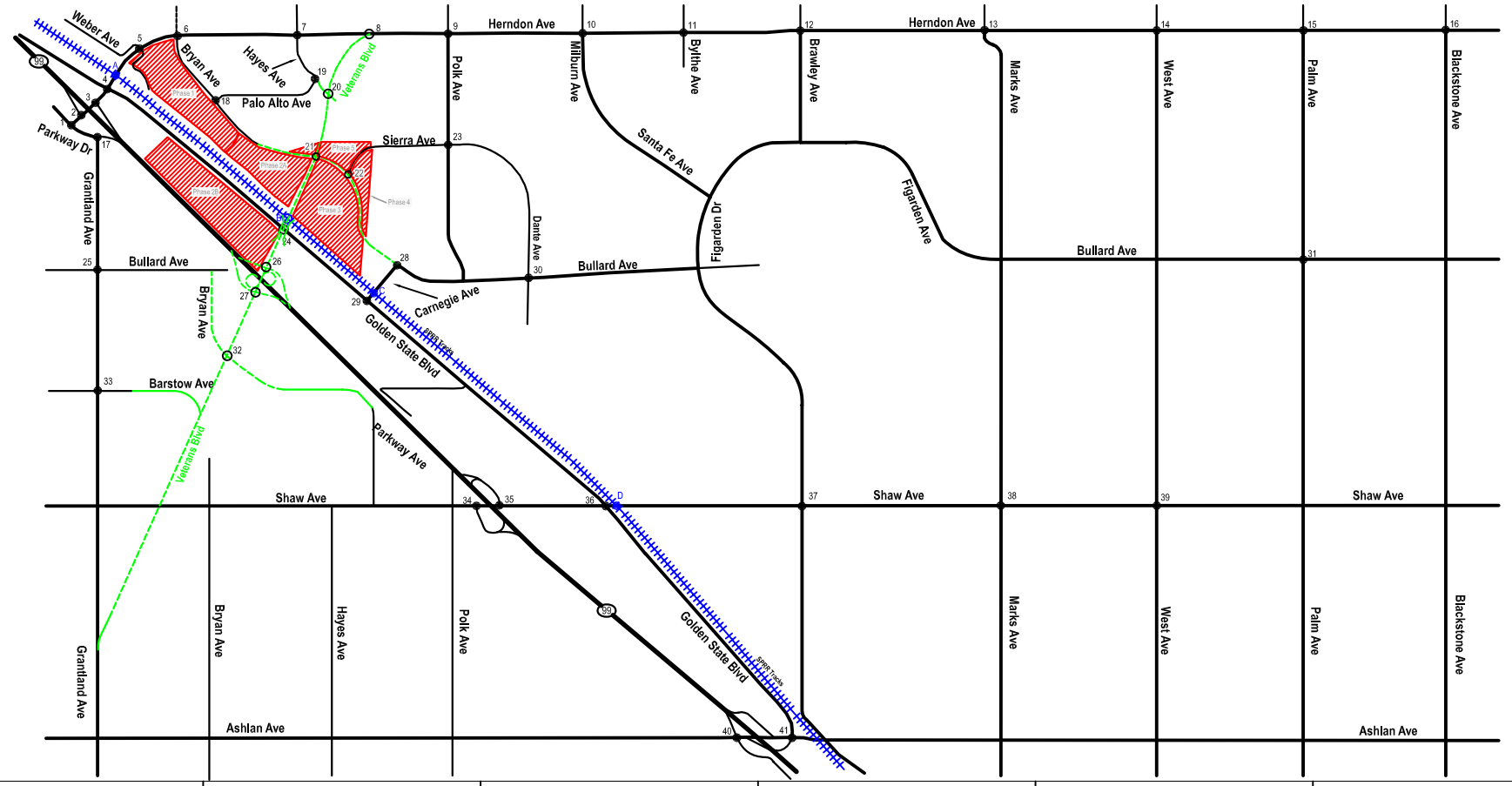
Figure 9-8
Year 2012 + Phase 1 and 2 Intersection Geometrics and Traffic Control



1 Parkway/Herndon
34/37
111/106
162/248
1195/1960
13/15
635/861

2 SR-99 SB Ramps/Herndon
Intersection removed in 2010 + Phase 1 as Mitigation

3 SR-99 NB Ramps/Herndon
1436/2207
808/866
59/82
1010/1353

4 Golden State/Herndon
337/207
138/255
436/643
655/531
1085/1430
200/339
189/154
1348/1620
198/497
116/559
213/243
129/476

5 Weber/Herndon
2/19
0/0
1976/2243
26/62
1622/2700
150/270
53/278

6 Bryan/Herndon
318/386
73/177
181/170
190/138
1483/1589
121/145
300/441
1021/2038
578/559
477/677
67/127
202/145

7 Hayes/Herndon
156/65
147/63
22/18
12/28
1380/1543
169/84
76/180
1119/1745
26/72
57/115
41/123
119/55

8 Veterans/Herndon
1426/1507
266/358
1286/1659
162/512

9 Polk/Herndon
28/28
68/110
177/234
100/214
1616/1746
126/407
7/9
1350/2050
92/112
139/91
32/87
320/284

10 Milburn/Herndon
302/389
416/533
503/573
271/542
1366/1777
95/107
288/533
1390/1838
184/193
167/205
284/609
154/69

11 Blythe/Herndon
2/19
0/1
58/70
58/70
1730/2425
2/5
2/7
2038/2469
1/1
0/2
1/0
0/5

12 Brawley/Herndon
53/75
100/89
69/29
26/66
1474/2080
378/526
83/75
1827/2051
242/405
195/368
102/102
433/440

13 Marks/Herndon
163/369
167/246
232/291
259/409
1651/2430
238/351
128/247
2382/2308
78/144
155/220
143/266
275/266

14 West/Herndon
54/173
107/161
261/224
137/323
2226/3090
352/311
67/110
2827/2558
191/189
101/212
81/153
326/484

15 Palm/Herndon
857/1123
775/897
181/324
392/227
1534/2441
257/288
1004/1030
2261/2093
117/79
165/186
844/966
229/208

16 Blackstone/Herndon
263/541
403/848
229/301
249/274
1792/1765
114/189
242/336
2103/2053
146/389
119/234
269/675
126/112

17 Grantland/Parkway-SR 99 SB On Ramp
923/1071
463/967
699/906
184/63

18 Bryan/Palo Alto
65/189
211/511
347/116
33/43
415/81
95/107
2/2
168/332
85/150
62/310
97/299
82/74
1/4

19 Hayes/Palo Alto
299/128
39/31
186/176
247/167
290/123
48/144

20 Hayes/Veterans
23/37
132/104
104/113
162/245
6/86
36/408

21 Bryan/Veterans
191/854
36/471
171/230
10/7
277/537
3/22

22 Bryan/Sierra
212/575
17/295
28/170
6/11
256/437
4/14

23 Polk/Sierra
29/55
201/300
62/88
74/70
86/203
43/15
56/39
117/308
82/60
66/81
244/270
25/28

24 Golden State/Veterans
proposed

25 Grantland/Bullard
26/48
315/740
65/90
198/95
5/5
11/15
69/83
4/2
7/3
8/7
587/655
6/36

26 SR-99 NB Ramps/Veterans
proposed

27 SR-99 SB Ramps/Veterans
proposed

28 Bullard/Carnegie
254/247
141/384
207/286
260/993
583/618
284/282

29 Golden State/Carnegie
14/43
240/292
100/411
240/366
18/38
618/431
8/58
8/50
3/9
4/8
196/325
326/775

30 Dante/Bullard
55/31
15/19
108/88
33/50
490/733
29/65
20/117
307/1037
42/65
194/65
13/7
21/10

31 Palm/Bullard
72/132
482/878
90/87
99/76
571/915
109/175
181/190
922/750
85/82
51/188
451/883
86/167

32 Bryan/Veterans
proposed

33 Grantland/Barstow
27/60
219/443
58/152
86/171
17/56
5/5
64/46
32/27
15/7
8/19
408/436
6/2

34 SR-99 SB Ramps/Shaw
882/1539
596/532
973/869
488/285
77/145
277/313

35 SR-99 NB Ramps/Shaw
260/318
163/339
271/387
1209/1722
155/96
1079/1131

36 Golden State/Shaw
42/58
464/406
248/316
222/408
1163/1830
383/463
54/66
1031/1366
39/55
18/47
375/698
532/884

37 Brawley/Shaw
152/179
735/470
258/523
135/296
1217/1967
126/215
108/307
1273/1851
79/163
182/304
246/854
67/158

38 Marks/Shaw
421/452
533/491
285/234
62/181
1048/1691
150/323
250/622
1520/1646
105/232
189/453
431/725
401/196

39 West/Shaw
168/214
439/513
158/144
70/152
1164/1683
163/281
125/233
1661/1597
155/149
211/247
563/376
270/136

40 SR-99 SB Ramps/Ashlan
82/109
28/113
150/167
523/1266
146/399
1572/1099
36/69
21/53
445/523

41 SR-99 NB Ramps/Ashlan
213/390
187/209
305/698
554/957
357/235
1151/1165
274/616
8/17
503/900

LEGEND

Project Site

Study Intersection

XX/XX AM/PM Peak Hour Volumes

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Figure 9-9
Year 2012 + Phases 1 and 2 Weekday AM and PM Peak Hour Traffic Volumes

Table 9-18 - Year 2012 Baseline plus Phases 1 & 2 Weekday AM and PM Peak Hour LOS Summary

		2012 Baseline				2012 + Phases 1-2			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	signal	>50	F	>50	F	12.7	B	20.8	C
2 99 SB Ramps/Herndon		>50	F	>50	F	--	--	--	--
3 99 NB Ramps/Herndon	signal	>50	F	>50	F	>80	F	>80	F
4 Golden State/Herndon	signal	27.0	C	29.7	C	33.0	C	71.9	E
5 Weber/Herndon	unsignalized	16.4	C	17.9	C	17.8	C	>50	F
6 Bryan/Herndon	signal	51.1	D	31.3	C	34.0	C	61.8	E
7 Hayes/Herndon	signal	22.2	C	24.3	C	25.4	C	27.7	C
8 Veterans/Herndon	signal	23.2	C	25.3	C	5.2	A	10.0	A
9 Polk/Herndon	signal	21.2	C	24.9	C	25.7	C	36.7	D
10 Milburn/Herndon	signal	28.8	C	42.6	D	32.2	C	63.8	E
11 Blythe/Herndon	signal	8.5	A	14.6	B	10.7	B	13.1	B
12 Brawley/Herndon	signal	45.5	D	58.2	E	38.3	D	74.6	E
13 Marks/Herndon	signal	36.3	D	45.5	D	38.9	D	56.0	E
14 West/Herndon	signal	>80	F	>80	F	73.5	E	>80	F
15 Palm/Herndon	signal	58.7	E	>80	F	63.7	E	>80	F
16 Blackstone/Herndon	signal	32.2	C	41.2	D	33.0	C	53.2	D
17 Grantland/Parkway	signal	>50	F	>50	F	10.6	B	13.5	B
18 Bryan/Palo Alto	signal	11.1	B	8.7	A	22.6	C	30.7	C
19 Hayes/Palo Alto	unsignalized	17.1	C	8.1	A	19.2	C	11.0	B
20 Veterans/Hayes	signal	18.1	C	9.1	A	8.0	A	14.2	B
21 Veterans/Bryan	signal	19.1	C	10.1	A	10.4	B	19.6	C
22 Bryan/Sierra	unsignalized	8.8	A	8.8	A	9.4	A	11.6	B
23 Polk/Sierra	unsignalized	13.1	B	14.1	B	16.6	C	>50	F
24 Golden State/Veterans	signal	--	--	--	--	--	--	--	--
25 Grantland/Bullard	unsignalized	40.8	E	27.4	D	>50	F	>50	F
26 99 NB Ramps/Veterans	signal	--	--	--	--	--	--	--	--
27 99 SB Ramps/Veterans	signal	--	--	--	--	--	--	--	--
28 Carnegie/Bullard	signal	>50	F	>50	F	22.6	C	>80	F
29 Golden State/Carnegie	signal	>50	F	>50	F	34.4	C	67.5	E
30 Dante/Bullard	unsignalized	13.9	B	16.8	C	19.0	C	>50	F
31 Palm/Bullard	signal	28.1	C	50.9	D	>80	F	69.6	E
32 Veterans/Bryan	signal	--	--	--	--	--	--	--	--
33 Grantland/Barstow	unsignalized	20.5	C	21.5	C	15.9	B	>50	F
34 99 SB Ramps/Shaw	signal	56.0	E	31.0	C	>80	F	48.5	D
35 99 NB Ramps/Shaw	signal	17.3	B	22.4	C	40.2	D	32.8	C
36 Golden State/Shaw	signal	51.9	D	>80	F	54.5	D	>80	F
37 Brawley/Shaw	signal	25.3	C	55.4	E	25.8	C	67.8	E
38 Marks/Shaw	signal	30.3	C	54.5	D	32.4	C	60.2	E
39 West/Shaw	signal	24.8	C	32.6	C	26.7	C	33.7	C
40 99 SB Ramps/Ashlan	signal	57.8	E	46.3	D	63.8	E	48.8	D
41 99 NB Ramps/Ashlan	signal	37.4	D	>80	F	37.4	D	>80	F

Notes:

XXX Denotes delay that exceeds thresholds

XXX Denotes significant project impact

- Brawley Avenue/Shaw Avenue (additional delay ≥5 seconds to LOS E in p.m.)
- Marks Avenue/Shaw Avenue (LOS D to LOS E in p.m.)
- SR 99 southbound ramps/Ashlan Avenue (additional delay ≥5 seconds to LOS E in a.m.)

Queuing Analysis

Table 9-19 presents the results of the 2012 plus Phases 1 and 2 weekday a.m. and p.m. peak hour queuing analyses based on the Synchro LOS analysis and the calculated 95th percentile queue lengths for each left- and/or right turn storage lane for each study area intersection. Based on the queuing analysis, the addition of Phases 1 and 2 traffic to the 2012 baseline condition would create new significant queues and/or exacerbate significant baseline queues by more than one vehicle (or 25 feet), and that would exceed a storage lane's capacity during the weekday peak hours:

- Parkway Drive/Herndon Avenue (NBR and WBL in p.m.)
- SR 99 northbound off-ramp/Herndon Avenue (NBR both peak hours)
- Golden State Boulevard/Herndon Avenue (NBL, SBL, and WBL in p.m.; WBR in both peak hours)
- Bryan Avenue/Herndon Avenue (NBL and EBL in both peak hours; SBR and EBR in p.m.)
- Milburn Avenue/Herndon Avenue (SBL, EBL, and WBR in p.m.; SBR in both peak hours)
- Brawley Avenue/Herndon Avenue (NBL and NBR in both peak hours; SBL in a.m.; EBR and WBL in p.m.)
- Marks Avenue/Herndon Avenue (NBR in both peak hours; SBL, SBR, EBL, and EBR in p.m.)
- West Avenue/Herndon Avenue (NBR and SBL in both peak hours)
- Palm Avenue/Herndon Avenue (NBL and SBL in p.m.; SBR and EBL in both peak hours; and WBR in a.m.)
- Blackstone Avenue/Herndon Avenue (SBR in both peak hours; EBR and WBR in p.m.)
- Bryan Avenue/Palo Alto Avenue (NBL in p.m.; SBL in a.m.)
- Bullard Avenue/Carnegie Avenue (NBL and EBL both peak hours; EBR in p.m.)
- Golden State Boulevard/Carnegie Avenue (NBR in p.m.)
- Palm Avenue/Bullard Avenue (NBL, NBR, SBR, EBL, and WBL in p.m.; SBL in both peak hours)
- SR 99 southbound ramps/Shaw Avenue (EBR in a.m.; WBL in both peak hours)
- SR 99 northbound ramps/Shaw Avenue (SBR and EBL in both peak hours)
- Golden State Boulevard/Shaw Avenue (NBR, SBL, and WBL in both peak hours)
- Brawley Avenue/Shaw Avenue (SBL and WBR in p.m.)
- Marks Avenue/Shaw Avenue (NBL, SBR, and EBL in p.m.; NBR in a.m.)
- West Avenue/Shaw Avenue (NBR in a.m.)
- SR 99 southbound ramps/Ashlan Avenue (NBR in both peak hours)
- SR 99 northbound ramps/Ashlan Avenue (NBL, EBL, and WBR in both peak hours; NBR and SBR in p.m.)

Table 9-19 - 2012 Baseline plus Project Phases 1 & 2 Intersection Queuing Analysis Summary

Signalized Intersection		Storage & 95th Percentile Queue Lengths (ft)							
		NBL	NBR	SBL	SBR	EBL	EBR	WBL	WBR
1 Parkway/Herndon	Storage Length[1]	--	150	--	--	--	--	340	340
	AM Queue[1]	--	56	--	--	--	--	220	23
	PM Queue[1]	--	243	--	--	--	--	685	45
3 99 NB Ramps/Herndon	Storage Length[1]	250	500	--	--	--	--	--	--
	AM Queue[1]	80	597	--	--	--	--	--	--
	PM Queue[1]	98	961	--	--	--	--	--	--
4 Golden State/Herndon	Storage Length[1]	145	150	150	145	255	365	165	80
	AM Queue[1]	63	45	209	173	119	45	244	343
	PM Queue[1]	337	489	410	169	126	228	491	198
6 Bryan/Herndon	Storage Length[1]	150	150	250	250	165	165	165	165
	AM Queue[1]	230	65	91	234	167	71	67	67
	PM Queue[1]	404	78	102	389	290	300	128	78
7 Hayes/Herndon	Storage Length[1]	140	--	100	--	350	250	250	125
	AM Queue[1]	35	--	18	--	117	13	93	8
	PM Queue[1]	62	--	14	--	194	22	41	16
8 Veterans/Herndon	Storage Length[1]	--	250	--	--	--	--	250	--
	AM Queue[1]	--	55	--	--	--	--	92	--
	PM Queue[1]	--	284	--	--	--	--	180	--
9 Polk/Herndon	Storage Length[1]	140	--	200	160	225	100	250	100
	AM Queue[1]	73	--	115	23	9	26	69	38
	PM Queue[1]	54	--	150	23	11	32	225	63
10 Milburn/Herndon	Storage Length[1]	225	100	230	100	230	135	230	140
	AM Queue[1]	92	71	231	158	155	54	58	82
	PM Queue[1]	142	60	360	233	348	91	76	385
11 Blythe/Herndon	Storage Length[1]	235	235	120	120	220	140	220	140
	AM Queue[1]	0	0	25	0	3	2	0	14
	PM Queue[1]	3	0	28	16	6	2	0	10
12 Brawley/Herndon	Storage Length[1]	105	75	80	80	290	150	310	150
	AM Queue[1]	262	302	131	32	97	88	215	20
	PM Queue[1]	568	291	73	46	109	349	374	45
13 Marks/Herndon	Storage Length[1]	245	125	160	160	145	50	280	190
	AM Queue[1]	103	270	138	59	64	9	155	88
	PM Queue[1]	168	227	200	389	181	89	244	149
14 West/Herndon	Storage Length[1]	175	65	185	350	260	200	275	140
	AM Queue[1]	73	398	442	36	34	9	72	13
	PM Queue[1]	155	685	390	171	115	86	210	141
15 Palm/Herndon	Storage Length[1]	145	280	250	230	245	190	210	145
	AM Queue[1]	153	150	158	1,054	307	0	202	362
	PM Queue[1]	175	116	282	1,616	730	40	222	166
16 Blackstone/Herndon	Storage Length[1]	250	110	240	90	250	160	250	100
	AM Queue[1]	66	58	137	161	135	43	74	89
	PM Queue[1]	181	61	161	596	230	188	149	166
17 Grantland/Parkway	Storage Length[1]	420	80	--	--	--	--	--	--
	AM Queue[1]	100	55	--	--	--	--	--	--
	PM Queue[1]	167	23	--	--	--	--	--	--
18 Bryan/Palo Alto	Storage Length[1]	250	--	250	150	150	--	--	150
	AM Queue[1]	84	--	340	29	61	--	--	67
	PM Queue[1]	327	--	140	53	127	--	--	38
21 Bryan/Veterans	Storage Length[1]	--	150	150	--	--	--	150	500
	AM Queue[1]	--	0	2	--	--	--	2	20
	PM Queue[1]	--	0	80	--	--	--	25	40
25 Grantland/Bullard	Storage Length[1]	250	--	250	--	250	100	100	100
	AM Queue[1]	1	--	6	--	86	1	7	34
	PM Queue[1]	1	--	9	--	200	1	29	14
28 Bullard/Carnegie	Storage Length[1]	225	--	--	--	150	615	--	--
	AM Queue[1]	568	--	--	--	222	66	--	--
	PM Queue[1]	713	--	--	--	320	1,079	--	--
29 Golden State/Carnegie	Storage Length[1]	--	100	--	--	--	--	--	--
	AM Queue[1]	--	84	--	--	--	--	--	--
	PM Queue[1]	--	314	--	--	--	--	--	--
31 Palm/Bullard	Storage Length[1]	120	55	90	70	150	150	140	--
	AM Queue[1]	65	31	121	27	166	28	134	--
	PM Queue[1]	297	116	159	97	277	39	285	--
34 99 SB Ramps/Shaw	Storage Length[1]	1,330	50	--	--	--	200	110	--
	AM Queue[1]	82	68	--	--	--	243	583	--
	PM Queue[1]	191	89	--	--	--	113	726	--
35 99 NB Ramps/Shaw	Storage Length[1]	--	--	1,300	50	120	--	--	230
	AM Queue[1]	--	--	97	81	176	--	--	37
	PM Queue[1]	--	--	364	244	155	--	--	38
36 Golden State/Shaw	Storage Length[1]	140	140	165	165	180	180	190	190
	AM Queue[1]	42	439	392	28	45	13	497	76
	PM Queue[1]	81	1,094	573	32	69	17	426	93
37 Brawley/Shaw	Storage Length[1]	260	100	220	130	220	130	200	120
	AM Queue[1]	78	26	109	37	44	26	57	34
	PM Queue[1]	175	132	371	94	98	10	171	202
38 Marks/Shaw	Storage Length[1]	190	105	240	270	235	135	275	155
	AM Queue[1]	101	266	139	269	117	37	87	26
	PM Queue[1]	274	118	159	373	353	96	177	88
39 West/Shaw	Storage Length[1]	240	75	185	115	240	155	210	125
	AM Queue[1]	105	120	73	57	52	35	87	24
	PM Queue[1]	127	43	64	84	128	44	137	51
40 99 SB Ramps/Ashlan	Storage Length[1]	100	100	360	110	--	100	575	--
	AM Queue[1]	38	495	272	0	--	31	266	--
	PM Queue[1]	77	341	279	0	--	56	515	--
41 99 NB Ramps/Ashlan	Storage Length[1]	240	520	210	210	320	--	--	85
	AM Queue[1]	248	228	91	61	380	--	--	148
	PM Queue[1]	674	652	188	421	412	--	--	806

Notes:
[1] Storage length determined by field measurement and review of scaled aerial photography. AM & PM queue lengths determined in *Synchro*.
XXX-Denotes 95th percentile queue that would exceed the lane's storage capacity.

Roadway Level of Service Analysis

Table 9-20 presents the results of the 2012 plus Phases 1 and 2 roadway level of service analysis for the weekday a.m. and p.m. peak hours. In addition, the table provides a comparison of the 2012 Baseline and 2012 plus Phases 1 and 2 roadway levels of service. The addition of the Phases 1 and 2 trips to the following roadway segments would be considered a significant impact since the LOS changes from satisfactory conditions (LOS D or better) in 2012 Baseline condition to unsatisfactory (i.e. LOS E or F) levels with the addition of traffic from Phases 1 and 2:

- Herndon Avenue: Parkway Drive to SR 99 southbound off-ramp (LOS C to F eastbound p.m.)
- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (LOS C to F eastbound p.m.)
- Herndon Avenue: Golden State Boulevard to Secondary Phase 1 access (former Weber Avenue) (LOS C to LOS F eastbound p.m.)
- Herndon Avenue: Secondary Phase 1 access (former Weber Avenue to Bryan Avenue (LOS C to F eastbound p.m.; LOS C to E westbound p.m.)
- Herndon Avenue: Brawley Avenue to Marks Avenue (LOS D to E eastbound a.m.; LOS E to F eastbound p.m.)
- Herndon Avenue: Marks Avenue to West Avenue (LOS D to F eastbound p.m.)
- Herndon Avenue: West Avenue to Palm Avenue (LOS D to F westbound a.m.)
- Herndon Avenue: Palm Avenue to Blackstone Avenue (LOS D to F eastbound p.m.)
- Parkway Drive: Herndon Avenue to Grantland Avenue (LOS C to F northbound p.m.)
- Sierra Avenue: Bryan Avenue to Polk Avenue (LOS C to F westbound p.m.)
- Golden State Boulevard: Herndon Avenue to Veterans Boulevard (LOS C to F northbound p.m.; LOS D to F southbound p.m.)
- Golden State Boulevard: Carnegie Avenue to Shaw Avenue (LOS D to E southbound p.m.)
- Golden State Boulevard: Shaw Avenue to Ashlan Avenue (LOS D to F southbound p.m.)
- Shaw Avenue: Golden State Boulevard to Brawley Avenue (LOS D to F eastbound both peak hours; LOS C to F westbound a.m.; LOS E to F westbound p.m.)
- Shaw Avenue: Brawley Avenue to Marks Avenue (LOS D to E eastbound p.m.; LOS E to F westbound p.m.)
- Grantland Avenue: Parkway Drive to Bullard Avenue (LOS D to F northbound both peak hours; LOS D to F southbound p.m.)
- Grantland Avenue: Bullard Avenue to Barstow Avenue (LOS D to F southbound p.m.)
- Carnegie Avenue: Golden State Boulevard to Bullard Avenue (LOS D to F westbound a.m.; LOS C to F westbound p.m.)

Table 9-20 - Year 2012 Baseline plus Project Phase 1 & 2 Roadway Segment Level of Service Summary

		2012 plus Phase 1 & 2											
		AM Peak Hour						PM Peak Hour					
Roadway Segment	No. of Lanes	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]
Herndon Avenue													
Parkway to SR 99 SB Ramps	1	747	D		1,531	F	0.19	967	F	0.54	2,281	F	1.15
SR 99 SB Ramps to SR 99 NB Ramps	1	808	D		1,535	F		866	F		2,289	F	
SR 99 NB Ramps to Golden State	1	1,799	F	0.58	1,497	F	0.24	2,271	F	0.95	2,196	F	1.22
Golden State to Weber	3	1,913	C		1,967	C		2,752	F	0.32	2,300	D	
Weber to Bryan	3	1,899	C		2,278	D		3,038	F	0.38	2,652	E	0.32
Bryan to Hayes	3	1,404	C		1,794	C		2,279	D		1,872	C	
Hayes to Veterans	3	1,287	C		1,517	C		1,585	C		1,507	C	
Veterans to Polk	3	1,449	C		1,783	C		2,171	D		1,865	C	
Polk to Milburn	3	1,862	C		1,842	C		2,568	D		2,371	D	
Milburn to Blythe	3	2,047	C		1,732	C		2,480	D		2,446	D	
Blythe to Brawley	2	2,096	C		2,070	C		3,368	F	0.38	3,298	F	0.27
Brawley to Marks	3	2,588	E	0.05	1,969	C		3,273	F	0.21	3,165	F	0.16
Marks to West	3	3,085	F	0.05	2,381	D		2,865	F	0.17	3,475	F	0.12
West to Palm	3	3,414	F	0.04	2,715	F	0.10	3,266	F	0.16	3,750	F	0.11
Palm to Blackstone	3	2,671	E	0.03	2,183	D		2,778	F	0.12	2,956	F	0.09
e/o Blackstone	3	2,458	D		2,155	D		2,466	D		2,228	D	
Parkway Drive													
Herndon and Grantland	1	699	D		1,386	F	0.20	906	F	0.56	2,038	F	1.07
Bryan Avenue													
Herndon to Palo Alto	2	701	C		712	C		755	C		870	C	
Palo Alto to Veterans	2	448	C		275	C		710	C		825	C	
Veterans to Sierra	2	240	C		201	C		559	C		861	C	
Sierra and Carnegie	2	491	C		395	C		568	C		631	C	
Carnegie to Dante	2	867	C		401	C		900	C		1,377	D	
Palo Alto Avenue													
Bryan to Hayes	1	433	C		589	D		517	D		351	C	
Hayes Avenue													
Herndon to Palo Alto	1	234	C		338	C		399	C		159	C	
Palo Alto to Veterans	1	338	C		286	C		367	C		372	C	
Veterans Avenue													
Hayes to Herndon	1	162	C		266	C		586	D		358	C	
Bryan to Hayes	1	42	C		185	C		394	C		182	C	
Golden State to Bryan	--	--	--		--	--		--	--		--	--	
SR 99 NB Ramps to GS	--	--	--		--	--		--	--		--	--	
SR 99 SB Ramps to SR 99 NB Ramps	--	--	--		--	--		--	--		--	--	
Bryan(2) to SR 99 SB Ramps	--	--	--		--	--		--	--		--	--	
Sierra Avenue													
Bryan to Polk	1	255	C		500	D		407	C		1,196	F	
Polk Avenue													
Herndon to Sierra	1	491	D		292	C		462	C		443	C	
Golden State Boulevard													
Herndon to Veterans	1	458	C		991	F	0.20	1,278	F	1.06	1,283	F	0.66
Veterans to Carnegie	1	444	C		354	C		749	D		746	D	
Carnegie to Shaw	1	651	D		754	D		1,172	F	0.29	780	E	0.33
Shaw to Ashlan	1	925	F	0.09	725	D		1,629	F	0.10	869	F	0.32
Shaw Avenue													
w/o SR 99 SB Ramps	1	1,461	F	0.04	959	F	0.02	1,154	F	0.04	1,684	F	0.08
SR 99 SB Ramps to SR 99 NB Ramps	1-2	1,250	F		1,478	D		1,227	F		2,071	F	
SR 99 NB Ramps to Golden State	2	1,242	D		1,480	D		1,487	D		2,109	F	0.02
Golden State to Brawley	3	1,811	F	0.02	1,768	F	0.02	2,566	F	0.05	2,701	F	0.06
Brawley to Marks	3	1,875	D		1,658	C		2,532	E	0.06	2,596	F	0.04
Marks to West	3	2,206	D		1,543	C		2,076	D		2,195	D	
e/o West	3	2,089	D		1,397	C		1,877	D		2,116	D	
Grantland Avenue													
Parkway to Bullard	1	883	F	0.18	463	C		969	F	0.56	967	F	0.48
Bullard to Barstow	1	601	D		520	D		698	D		838	F	0.43
Palm Avenue													
Herndon to Bullard	2	1,238	D		1,284	D		1,360	D		1,203	D	
Dante Avenue													
Polk to Bullard	1	204	C		203	C		424	C		288	C	
Carnegie Avenue													
Golden State to Bullard	1	467	C		876	F	0.19	1,279	F	0.49	865	F	0.54
Ashlan Avenue													
SR 99 SB Ramps to SR 99 NB Ramps	2	2,167	F		1,041	C		1,789	F		1,963	F	

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* , for State Two-Way Arterials (Class II) & Non-State Roadways.

[2] V/C based on LOS F capacities in the Florida Tables

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact (v/c ≥ 0.15 per the City of Fresno General Plan Transportation Policy B-3)

Freeway Level of Service Analyses

Year 2012 plus Phases 1 and 2 freeway segment traffic volume forecasts were post-processed by DKS using the existing AADT obtained from the Caltrans Traffic and Vehicle Data Systems Unit webpage. The difference between the future model volume and the existing model volume was added to the existing count to calculate the future analysis volume.

Mainline Levels of Service

Table 9-21 provides the Year 2012 plus Phases 1 and 2 freeway level of service summary.

Table 9-21 – 2012 plus Phases 1 and 2 Freeway Segment Level of Service Summary

Freeway	From	To	Density	LOS
Northbound AM				
SR 99	Herndon Avenue	Avenue 7	15.4	B
	Veterans Boulevard	Herndon Avenue	18.1	C
	Shaw Avenue	Veterans Boulevard		
	Ashlan Avenue	Shaw Avenue	18.9	C
	Dakota Avenue	Ashlan Avenue	24.2	C
Southbound AM				
SR 99	Avenue 7	Herndon Avenue	19.9	C
	Herndon Avenue	Veterans Boulevard	17.1	B
	Veterans Boulevard	Shaw Avenue		
	Shaw Avenue	Ashlan Avenue	17.6	B
	Ashlan Avenue	Dakota Avenue	24.3	C
Northbound PM				
SR 99	Herndon Avenue	Avenue 7	24.6	C
	Veterans Boulevard	Herndon Avenue	23.1	C
	Shaw Avenue	Veterans Boulevard		
	Ashlan Avenue	Shaw Avenue	23.7	C
	Dakota Avenue	Ashlan Avenue	30.7	D
Southbound PM				
SR 99	Avenue 7	Herndon Avenue	20.5	C
	Herndon Avenue	Veterans Boulevard	24.4	C
	Veterans Boulevard	Shaw Avenue		
	Shaw Avenue	Ashlan Avenue	25.0	C
	Ashlan Avenue	Dakota Avenue	35.2	E

As this table indicates, SR 99 between Dakota Avenue and Ashlan Avenue will continue to operate with unsatisfactory conditions (LOS D or worse) during the a.m. and p.m. peak hours. The addition of Phases 1 and 2 traffic to the freeway segments would not cause any new significant impacts, but would contribute forecast baseline impacts.

Weaving Section Levels of Service

The SR 99 mainline and ramp entry and exit volumes for the 2012 plus Phases 1 and 2 scenario were analyzed using Figure 504.7A from the HDM. Results from this analysis are shown in Table 9-22. In addition, the table also shows a comparison with the 2012 baseline scenario, as well as indicates the LOS for mitigation measures (if needed). Detailed calculations on the Leisch nomographs are provided in Appendix F.

Table 9-22 – Year 2012 plus Phases 1 and 2 Freeway Weaving Level of Service Summary

	2012 Baseline			2012 + Phases 1 and 2							
		LOS			LOS without Mitigation				LOS with Mitigation		
Segment	No. of Lanes	AM	PM	No. of Lanes	AM	Significant Impact	PM	Significant Impact	No. of Lanes	AM	PM
SR 99 northbound											
Shaw Ave to Herndon Ave	2	D	F	2	D	no	F	no	3	C	D
SR 99 southbound											
Herndon Ave to Shaw Ave	2	D	E	2	D	no	F	yes	3	C	E

As shown in the table, addition of Phases 1 and 2 traffic to SR 99 would create a new significant impact at SR 99 southbound, from Herndon Avenue to Shaw Avenue (LOS E to F in the p.m. peak hour). However, since both study weaving sections are forecast to operate with unsatisfactory LOS (LOS D or below) in the 2012 baseline condition, Phases 1 and 2 would contribute to those already impacted weaving sections.

At-Grade Railroad Crossing Analysis

Using the HCM "Back of Queue" queuing methodology to analyze the vehicular queuing, Table 9-23 presents the at-grade railroad crossing analysis summary for the 2012 plus Phases 1 and 2 condition. The HCM calculation sheets are provided in Appendix H.

Table 9-23 – Year 2012 plus Phases 1 and 2 At-Grade Railroad Crossing Analysis Summary

			Vehicular Queue (feet) [3]		Impact to Adjacent Major Intersection [4]				Significant Project Impact?	
Crossing Location	Peak Hour [1]	Rail Crossing Time (seconds) [2]	e/o tracks	w/o tracks	e/o tracks		w/o tracks		e/o tracks	w/o tracks
Herndon Ave	AM	205	2,821	2,742	Yes	1,705 ft to Bryan Ave	Yes	725 ft to SR 99 NB ramps	No	No
	PM	156	3,156	5,314	Yes		Yes		Yes	No
Carnegie Ave	AM	243	1,478	827	Yes	720 ft to Bullard Ave	Yes	75 ft to Golden State Blvd	No	No
	PM	110	638	1,399	No		Yes		No	No
Shaw Ave	AM	300	3,444	3,604	Yes	1,560 ft to Blythe Ave	Yes	2,600 ft to SR 99 NB ramps	No	No
	PM	235	7,621	6,448	Yes		Yes		No	No

[1] - Based on observed train crossings in 2007 within the AM and PM peak commute hours.

[2] - Based on time that train crossing gate arms go down, to time gate arms go up.

[3] - Vehicle queue determined using *Highway Capacity Manual* (HCM) "Back of Queue Equation".

[4] – Impact based on whether vehicular queue would extend to an adjacent major intersection. For Herndon and Shaw Avenues the major intersection west of tracks will be the northbound ramp intersections with SR 99, rather than the closely spaced intersections with Golden State Blvd/Herndon Ave (125 ft) and Golden State Blvd/Shaw Ave (50 ft).

According to the table, addition of Phases 1 and 2 traffic would cause new queuing impacts (i.e., new impacts to adjacent major intersections from the baseline condition) at the following crossings:

- Herndon Avenue crossing (Bryan Avenue/Herndon Avenue in the p.m. peak hour)

Mitigation Measures

TRAF-12 Phases 2A and 2B shall pay their Traffic Signal Mitigation Impact (TSMI) Fee of $45.98 per average daily trip (ADT) at the time of building permit. This fee is reviewed and updated yearly and the applicant pays the TSMI fee in place at the time of the building permit. Based on the Phase 2A ADT of 7,421 and the current TSMI fee Phase 2A shall pay $341,217.58. Based on the Phase 2B ADT of 31,897, Phase 2B shall pay $1,466,624.06.

This TSMI fee is credited against signal installation and Intelligent Transportation System (ITS) improvements (constructed at their ultimate location) anticipated to buildout of the 2025 General Plan Circulation Element and included in the *Nexus Study* for the TSMI fee. Project specific impacts that are not consistent with the 2025 General Plan, Public Works P69 standards, and/or already incorporated into the TSMI fees infrastructure costs are not reimbursable unless the City Engineer and City Traffic Engineer include the new traffic signal and/or ITS infrastructure in the next update, and the applicant agrees to pay the new calculated TSMI fee that includes the new infrastructure.

TRAF-13 Phases 2A and 2B shall pay their Fresno Major Street Impact (FMSI) Fee which will be determined at time of building permit. Effective July 1, 2008, the appropriate FMSI fees would contain the City Wide Street Impact Fee plus the New Growth Area Major Street Impact Fee.

For commercial office developments such as Phase 2A, the City Wide Street Impact Fee is calculated to be $314,325.40 ($13,726 per acre); while the New Growth Area Major Street Impact Fee is calculated at $683,519.20 (at $29,848 per acre). Therefore, Phase 2A shall pay the total FMSI Fee of $997,844.60 ($43,574 per acre). This FMSI fee is creditable towards major street roadway improvements included in the *Nexus Study* for the FMSI fee.

For commercial retail developments such as Phase 2B, the City Wide Street Impact Fee is calculated to be $1,169,497.50 (at $16,131 per acre); while the New Growth Area Major Street Impact Fee is calculated at $2,718,387.50 (at $37,495 per acre). Therefore, Phase 2B shall pay the total FMSI Fee of $3,887,885.00 (at $53,626 per acre). This FMSI fee is creditable towards major street roadway improvements included in the *Nexus Study* for the FMSI fee.

Significant Impacts at Intersections

Based on the 2012 plus Phases 1 and 2 traffic analysis discussed above, the proposed project would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or more at LOS E or F) in the weekday a.m. and/or p.m. peak hours to the study intersections. The following are improvements required to mitigate these impacts:

TRAF-14 Prior to obtaining a Certificate of Occupancy, Phases 2A and 2B shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study intersections in the 2012 plus Phases 1 and 2 condition:

Golden State Boulevard/Herndon Avenue: Modify the traffic signal to provide an overlap phase for the northbound and southbound right turn lanes. This traffic signal is included in the TSMI Fee and can be credited/reimbursed.

Secondary Phase 1 Access (former Weber Avenue)/Herndon Avenue: This intersection will also be designed to be a limited access, unsignalized intersection with eastbound right-turn inbound-only access, northbound right-turn outbound-only access, and westbound left-turn inbound-only access. Vehicles that would be delayed would have other signalized and unsignalized access locations on Bryan Avenue to use.

Bryan Avenue/Herndon Avenue: Modify the Bryan Avenue/Herndon Avenue traffic signal to provide overlap phasing for the southbound right turn lane and eastbound right turn lane. This traffic signal is included in the TSMI Fee and can be credited/reimbursed.

Millburn Avenue/Herndon Avenue: Modify the Millburn Avenue/Herndon Avenue traffic signal to provide overlap phasing for the westbound right turn lane. This intersection is not on the City's TSMI list.

Brawley Avenue/Herndon Avenue: Construction of a second (dual) left turn lane on the northbound and southbound approaches and provision of overlap phasing for the northbound right turn lane are required to mitigate this impact. This intersection is included in the TSMI Fee and can be credited/reimbursed.

Marks Avenue/Herndon Avenue: Modify the Marks Avenue/Herndon Avenue traffic signal to provide overlap phasing for the southbound right turn lane. This intersection is not on the City's TSMI list.

Palm Avenue/Herndon Avenue: With exception of the addition of a third southbound through lane, this intersection is built out to its ultimate configuration (dual left turn lanes and right turn lanes on all approaches). However, even with the addition of the third southbound through lane, this intersection would not be mitigated to baseline conditions in the p.m. peak hour. Therefore, addition of Phases 2A and 2B traffic to this intersection would be a significant unavoidable impact.

Polk Avenue/Sierra Avenue: The installation of a traffic signal at this intersection is required to mitigate this significant impact. The traffic signal shall be placed at its ultimate buildout location. This traffic signal is included in the TSMI fee and can be credited/reimbursed.

Grantland Avenue/Bullard Avenue: The installation of a traffic signal at Grantland Avenue/Bullard Avenue would mitigate the significant project impact. However, it should be noted that this intersection would not meet the California MUTCD peak hour signal warrant. The traffic signal shall include ITS interconnect with a 2070 controller per the PW ITS Standards and an ITS camera for operation monitoring. The traffic signal shall be placed at its ultimate buildout location. This traffic signal is included in the TSMI fee and can be credited/reimbursed.

Dante Avenue/Bullard Avenue: The installation of a traffic signal at Grantland Avenue/Bullard Avenue would mitigate the significant project impact. However, it should be noted that this intersection would not meet the California MUTCD peak hour signal warrant during the impacted p.m. peak hour; but would meet the warrant during the non-impacted

a.m. peak hour. The traffic signal shall be placed at its ultimate buildout location. This traffic signal is included in the TSMI fee and can be credited/reimbursed.

Palm Avenue/Bullard Avenue: The addition of a second eastbound through lane would mitigate the significant project impact. This intersection is not on the City's TSMI list.

Grantland Avenue/Barstow Avenue: The installation of a traffic signal at Grantland Avenue/Barstow Avenue would mitigate the significant project impact. The traffic signal shall include ITS interconnect with a 2070 controller per the PW ITS Standards and an ITS camera for operation monitoring. The traffic signal shall be placed at its ultimate buildout location. This traffic signal is included in the TSMI fee and can be credited/reimbursed.

SR 99 southbound ramps/Shaw Avenue: Widen the eastbound approach and construct a second eastbound through lane. This improvement has already been identified through Caltrans District 6 and Phases 2A and 2B would contribute its fair share (Combined Formula as provided in the Interim Agreement between the City and Caltrans) toward this improvement.

Golden State Boulevard/Shaw Avenue: A traffic signal modification to provide right turn overlap phasing for the northbound right turn movement is required to mitigate this significant impact. This traffic signal is included in the TSMI Fee and can be credited/reimbursed.

Brawley Avenue/Shaw Avenue: This intersection is built out to its ultimate configuration (dual left turn lanes and right turn lanes on all approaches) and there is no available right-of-way to provide mitigation. Therefore, addition of Phases 2A and 2B traffic to this intersection would be a significant unavoidable impact.

Marks Avenue/Shaw Avenue: Modify the Marks Avenue/Shaw Avenue traffic signal to provide overlap phasing for the southbound right turn lane. This intersection is not on the City's TSMI list.

SR 99 southbound ramps/Ashlan Avenue: Re-stripe the northbound approach and convert the left turn lane to a shared left- plus right turn lane. This improvement would need to be reviewed with Caltrans District 6 and Phases 2A and 2B would contribute their fair share (Combined Formula as provided in the Interim Agreement between the City and Caltrans) toward this improvement.

Significant Intersection Queuing Impacts

Based on the 2012 plus Phases 1 and 2 traffic analysis discussed above, the following study intersections are forecast to have significant impacts to lane storage queues when compared to the 2012 baseline condition. The following are improvements required to mitigate these impacts:

TRAF-15 Prior to obtaining a Certificate of Occupancy, all Phases 2A and 2B shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study intersection queues in the 2012 plus Phases 1 and 2 condition:

Parkway Drive/Herndon Avenue: The northbound right turn lane would need to be extended by 95 feet to 245 feet; and the westbound left turn lane would need to be extended by 435 feet to 685 feet, or provide a dual left turn lane. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to

mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

SR 99 northbound off-ramp/Herndon Avenue: Per TRAF-7 (2010 plus Phase 1), the northbound off-ramp shall be widened to three lanes to provide dual-right-turn lanes and a left-turn lane. The length of the additional right-turn lane shall be calculated based on the 95th percentile queue in 2025 (510 feet). This traffic signal and off-ramp widening is included in TSMI Fee and can be credited/reimbursed. The 2012 plus Phases 1 and 2 queue at this intersection is 961 feet in the p.m. peak hour.

Golden State Boulevard/Herndon Avenue: In addition to the already funded 2009 geometric improvements slated for this intersection, additional extensions of the planned turn lanes are required as follows: extend the dual northbound left turn lane by 215 feet to 360 feet; extend the northbound right turn lane by 430 feet to 580 feet; extend the southbound dual left turn lane by 265 feet to 415 feet; extend the southbound right turn lane by 70 feet to 215 feet; extend the westbound left turn lane by 335 feet to 500 feet; and extend the westbound right turn lane by 275 feet to 355 feet. Since these extensions are beyond the City's standard 250 foot left turn lane, this mitigation would not be reimbursable/credited under the FMSI fee.

Bryan Avenue/Herndon Avenue: Per TRAF-7 (2010 plus Phase 1), this intersection will be constructed to its ultimate configuration with 250 foot dual left turn lanes at all approaches. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Based on the queuing analysis, the northbound dual left turn lane would require an extension of 125 feet to 375 feet; the southbound right turn lane wound require an extension of 25 feet to 275 feet; and the eastbound dual left turn lane would require an extension of 100 feet to 265 feet.

Milburn Avenue/Herndon Avenue: The southbound left turn lane would need to be extended by 130 feet to 360 feet; the southbound right turn lane would need to be extended by 135 feet to 235 feet; the eastbound left turn lane would need to be extended by 120 feet to 350 feet; and the westbound right turn would need to be extended by 245 feet to 385 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Brawley Avenue/Herndon Avenue: The northbound dual left turn lane would need to be extended by 465 feet to 570 feet; the northbound right turn lane would need to be extended by 225 feet to 300 feet; the southbound dual left turn lane would need to be extended by 50 feet to 130 feet; the eastbound right turn lane would need to be extended by 200 to 350 feet; and the westbound dual left turn lane would need to be extended by 65 feet to 375 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the extension of the southbound dual left turn lane would be reimbursable/credited towards the FMSI fee.

Marks Avenue/Herndon Avenue: The northbound right turn lane would need to be extended by 145 feet to 270 feet; the southbound left turn lane would need to be extended by 40 feet to 200 feet; the southbound right turn lane would need to be extended by 230 feet to

390 feet; and the eastbound left turn lane would need to be extended by 35 feet to 180 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the southbound and eastbound left turn lane extensions would be reimbursable/credited towards the FMSI fee.

West Avenue/Herndon Avenue: The northbound right turn lane would need to be extended by 620 feet to 685 feet; and the southbound left turn lane would need to be extended by 255 feet to 440 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Palm Avenue/Herndon Avenue: The northbound left turn lane would need to be extended by 30 feet to 175 feet; the southbound dual left turn lane would need to be extended by 30 feet to 280 feet; the southbound right lane would need to be extended by 1,385 feet to 1,615 feet; the eastbound dual left turn lane would need to be extended by 485 feet to 730 feet; and the westbound right turn lane would need to be extended by 215 feet to 360 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the northbound dual left turn lane extension would be reimbursable/credited towards the FMSI fee.

Blackstone Avenue/Herndon Avenue: The southbound right turn lane would need to be extended by 505 feet to 595 feet; the eastbound right turn lane would need to be extended by 30 feet to 190 feet; and the westbound right turn lane would need to be extended by 65 feet to 165 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Bryan Avenue/Palo Alto Avenue: The northbound left turn would need to be extended by 80 feet to 330 feet; and southbound left turn lane would need to be extended by 90 feet to 340 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Bullard Avenue/Carnegie Avenue: The northbound left turn lane would need to be extended by 375 feet to 600 feet, or construct a dual left turn lane; the eastbound left turn lane would need to be extended by 65 feet to 215 feet; and the eastbound right turn lane would need to be extended by 55 feet to 670 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Golden State Boulevard/Carnegie Avenue: The northbound right turn lane would need to be extended by 215 feet to 315 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Palm Avenue/Bullard Avenue: The northbound left turn lane would need to be extended by 145 feet to 265 feet; the northbound right turn lane would need to be extended by 45 feet to 100 feet; the southbound left turn lane would need to be extended 60 feet to 150 feet; the eastbound left turn lane would need to be extended by 105 feet to 255 feet; and the westbound left turn lane would need to be extended by 65 feet to 205 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the extension of the southbound left turn lane would be reimbursable/credited towards the FMSI fee.

SR 99 southbound ramps/Shaw Avenue: The westbound left turn lane would need to be extended by 365 feet to 475 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

SR 99 northbound ramps/Shaw Avenue: The southbound right turn lane would need to be extended by 195 feet to 245 feet; and the eastbound left turn lane would need to be extended by 55 feet to 175 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the eastbound left turn lane would be reimbursable/credited towards the FMSI fee.

Golden State Boulevard/Shaw Avenue: The northbound right turn lane would need to be extended by 1,135 feet to 1,275 feet; the southbound left turn lane would need to be extended by 375 feet to 540 feet; and the westbound left turn lane would need to be extended by 320 feet to 510 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Brawley Avenue/Shaw Avenue: The southbound dual left turn lane would need to be extended by 150 feet to 370 feet; and the westbound right turn lane would need to be extended by 80 feet to 200 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Marks Avenue/Shaw Avenue: The northbound dual left turn lane would need to be extended by 100 feet to 290 feet; the northbound right turn lane would need to be extended by 145 feet to 250 feet; and the dual eastbound left turn lane would need to be extended by 145 feet to 380 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

West Avenue/Shaw Avenue: The northbound right turn lane would need to be extended by 45 feet to 120 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

SR 99 southbound ramps/Ashlan Avenue: With the intersection geometric mitigation proposed above in TRAF-14 implemented, there would be no significant queuing impacts at this intersection.

SR 99 northbound ramps/Ashlan Avenue: The northbound left turn lane would need to be extended by 435 feet to 675 feet; the northbound right turn lane would need to be extended by 130 feet to 650 feet; the southbound right turn lane would need to be extended by 210 feet to 420 feet; the eastbound left turn lane would need to be extended by 90 feet to 410 feet; and the westbound right turn lane would need to be extended by 720 feet to 805 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Figure 9-10 illustrates the mitigation measures needed for the significant traffic impacts created by the addition of Phases 1 and 2 traffic to the 2012 baseline condition. Table 9-24 shows the improved levels of service with the implementation of the mitigation measures.

Significant Roadway Segment Impacts

Based on the 2012 plus Phases 1 and 2 traffic analysis discussed above, the following study roadway segments are forecast to have significant impacts with addition of Phases 2A and 2B traffic. The following are improvements required to mitigate these impacts:

TRAF-16 Prior to obtaining a Certificate of Occupancy, Phases 2A and 2B shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study roadway segments in the 2012 plus Phases 1 and 2 condition:

Herndon Avenue, Parkway Drive to SR 99 southbound off-ramp: Construct the eastbound direction of Herndon Avenue to two lanes between Parkway Drive and the SR 99 undercrossing. As part of mitigation measure TRAF-7 (2010 plus Phase 1), the SR 99 southbound off-ramp at this location will be removed for improved operations at this interchange. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Herndon Avenue, SR 99 southbound off-ramp to SR 99 northbound off-ramp: Based on field reconnaissance of the Herndon Avenue undercrossing of SR 99, there are no feasible measures to widen the existing bridge structure to accommodate additional capacity (lanes). Therefore, the project would create a significant unavoidable impact at this location in the eastbound direction during the p.m. peak hour.

Herndon Avenue, Golden State Boulevard to Phase 1 Secondary Driveway (former Weber Avenue): Construct Herndon Avenue to six lanes with a raised landscaped median island between Golden State Boulevard and Hayes Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited. With this section built-out to three lanes in each direction per the General Plan Expressway and/or Super Arterial designation, this segment would continue to operate at LOS F in the p.m. peak hour in the eastbound direction. Therefore, the project would create a significant unavoidable impact at this location in the eastbound direction during the p.m. peak hour; however, *this segment of*

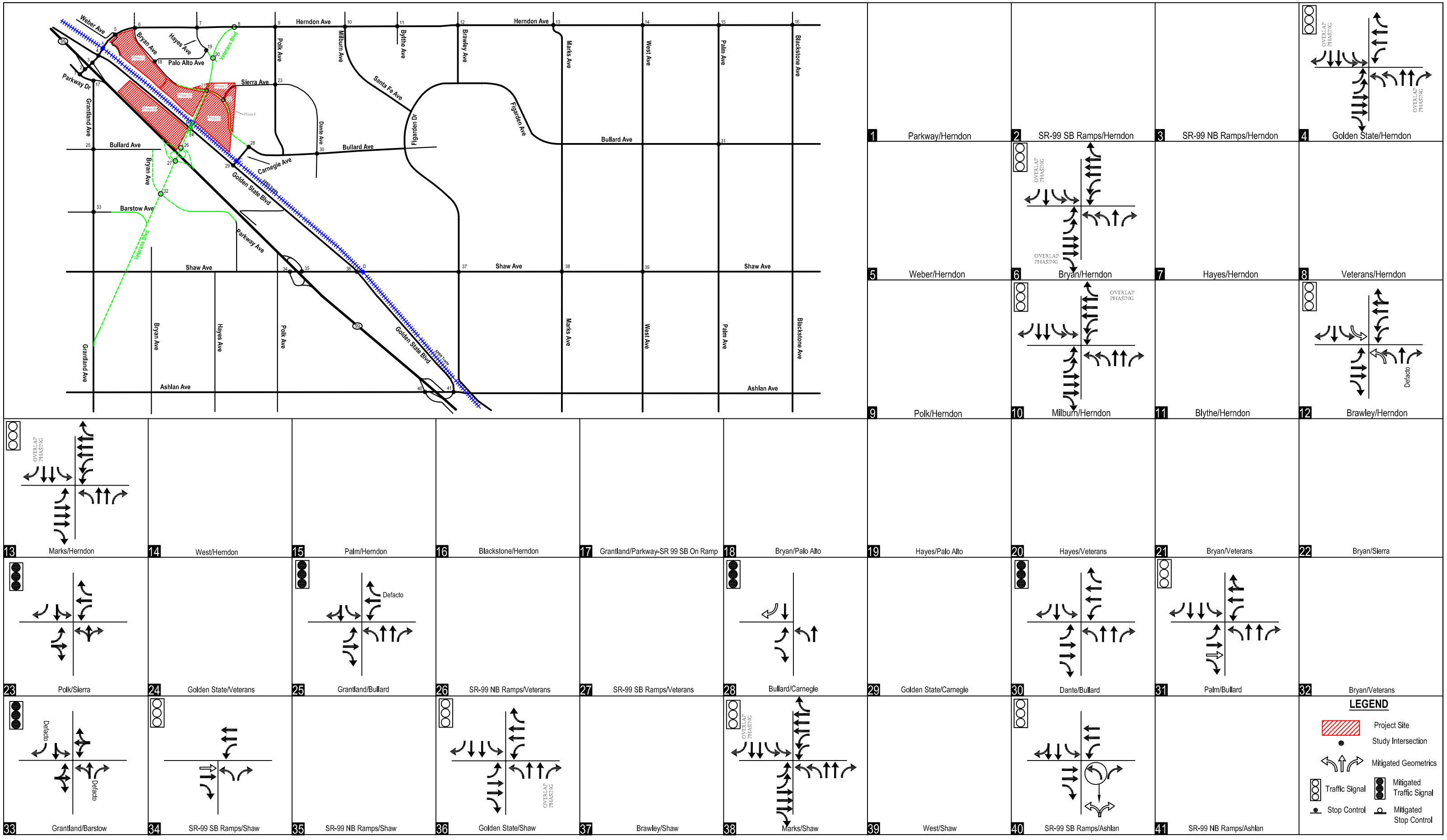

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Figure 9-10
2012 + Phases 1 & 2 Mitigated Geometrics and Traffic Controls

Table9-24 - Year 2012 plus Phase 1 & 2 Intersection Levels of Service with Mitigation Measures

			2012 Baseline + Project Phases 1-2				With Mitigation			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	Parkway/Herndon	signal	12.7	B	20.8	C				
2	99 SB Ramps/Herndon	signal	--	--	--	--				
3	99 NB Ramps/Herndon	signal	>80	F	>80	F				
4	Golden State/Herndon	signal	33.0	C	71.9	E	31.6	C	51.6	D
5	Weber/Herndon	unsignalized	17.8	C	>50	F	*no feasible mitigaiton*			
6	Bryan/Herndon	signal	34.0	C	61.8	E	32.0	C	56.0	E
7	Hayes/Herndon	signal	25.4	C	27.7	C				
8	Veterans/Herndon	signal	5.2	A	10.0	A				
9	Polk/Herndon	signal	25.7	C	36.7	D				
10	Milburn/Herndon	signal	32.2	C	63.8	E	31.7	C	55.8	E
11	Blythe/Herndon	signal	10.7	B	13.1	B				
12	Brawley/Herndon	signal	38.3	D	74.6	E	30.4	C	43.3	D
13	Marks/Herndon	signal	38.9	D	56.0	E	41.6	D	50.0	D
14	West/Herndon	signal	73.5	E	>80	F				
15	Palm/Herndon	signal	63.7	E	>80	F	*no feasible mitigaiton*			
16	Blackstone/Herndon	signal	33.0	C	53.2	D				
17	Grantland/Parkway	signal	10.6	B	13.5	B				
18	Bryan/Palo Alto	signal	22.6	C	30.7	C				
19	Hayes/Palo Alto	unsignalized	19.2	C	11.0	B				
20	Veterans/Hayes	signal	8.0	A	14.2	B				
21	Veterans/Bryan	signal	10.4	B	19.6	C				
22	Bryan/Sierra	signal	9.4	A	11.6	B				
23	Polk/Sierra	*signal*	16.6	C	>50	F	7.2	A	7.7	A
24	Golden State/Veterans	signal	--	--	--	--				
25	Grantland/Bullard	unsignalized	>50	F	>50	F	>50	F	>50	F
26	99 NB Ramps/Veterans	signal	--	--	--	--				
27	99 SB Ramps/Veterans	signal	--	--	--	--				
28	Carnegie/Bullard	signal	22.6	C	>80	F	13.2	B	79.4	E
29	Golden State/Carnegie	signal	34.4	C	67.5	E				
30	Dante/Bullard	signal	19.0	C	>50	F	6.6	A	6.0	A
31	Palm/Bullard	signal	>80	F	69.6	E	27.2	C	49.3	D
32	Veterans/Bryan	signal	--	--	--	--				
33	Grantland/Barstow	*signal*	15.9	B	>50	F	6.8	A	8.4	A
34	99 SB Ramps/Shaw	signal	>80	F	48.5	D	35.3	D	25.8	C
35	99 NB Ramps/Shaw	signal	40.2	D	32.8	C				
36	Golden State/Shaw	signal	54.5	D	>80	F	50.2	D	>80	F
37	Brawley/Shaw	signal	25.8	C	67.8	E	*no feasible mitigaiton*			
38	Marks/Shaw	signal	32.4	C	60.2	E	29.2	C	53.5	D
39	West/Shaw	signal	26.7	C	33.7	C				
40	99 SB Ramps/Ashlan	signal	63.8	E	48.8	D	38.8	D	25.1	C
41	99 NB Ramps/Ashlan	signal	37.4	D	>80	F				

Notes:

XXX Denotes delay that exceeds thresholds

XXX Denotes significant project impact

Herndon Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition.

Herndon Avenue, Phase 1 Secondary Driveway (former Weber Avenue) to Bryan Avenue: Construct Herndon Avenue to six lanes with a raised landscaped median island between Golden State Boulevard and Hayes Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited. With this section built-out to three lanes in each direction per the General Plan Expressway and/or Super Arterial designation, this segment would continue to operate at LOS F in the p.m. peak hour in both directions. Therefore, the project would create a significant unavoidable impact at this location in both directions during the p.m. peak hour; however, *this segment of Herndon Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Herndon Avenue, Brawley Avenue to Marks Avenue: With the construction of Herndon Avenue to six lanes with a raised landscaped median island in this segment, this roadway segment is still forecast to operate with unsatisfactory LOS in both directions during the a.m. and/or p.m. peak hours. Therefore, the project would create a significant unavoidable impact at this location in the eastbound direction in both peak hours, however; *this segment of Herndon Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Herndon Avenue, Marks Avenue to West Avenue: This roadway segment is already built to its ultimate General Plan configuration. Therefore, the project would create a significant unavoidable impact at this location in the eastbound direction in the p.m. peak hour. However, *this segment of Herndon Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Herndon Avenue, West Avenue to Palm Avenue: This roadway segment is already built to its ultimate General Plan configuration. Therefore, the project would create a significant unavoidable impact at this location in the westbound direction in the a.m. peak hour. However, *this segment of Herndon Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Herndon Avenue, Palm Avenue to Blackstone Avenue: This roadway segment is already built to its ultimate General Plan configuration. Therefore, the project would create a significant unavoidable impact at this location in the eastbound direction in the p.m. peak hour. However, *this segment of Herndon Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Parkway Drive, Herndon Avenue to Grantland Avenue: Construct Parkway Drive to two lanes in the northbound direction between Herndon Avenue and Grantland Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Sierra Avenue, Bryan Avenue to Polk Avenue: Construct Sierra Avenue to two lanes in the westbound direction between Bryan Avenue and Polk Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Golden State Boulevard, Herndon Avenue to Veterans Boulevard: Construct Golden State Boulevard to two lanes in each direction between Herndon Avenue and Veterans

Boulevard. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Golden State Boulevard, Carnegie Avenue to Shaw Avenue: Construct Golden State Boulevard to two lanes in the southbound direction between Carnegie Avenue and Shaw Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Golden State Boulevard, Carnegie Avenue to Shaw Avenue: Construct Golden State Boulevard to two lanes in the southbound direction between Carnegie Avenue and Shaw Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Shaw Avenue, Golden State Boulevard to Brawley Avenue: This roadway segment is already built to its ultimate General Plan configuration. Therefore, the project would create a significant unavoidable impact at this location in both directions in both peak hours. However, *this segment of Shaw Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Shaw Avenue, Brawley Avenue to Marks Avenue: This roadway segment is already built to its ultimate General Plan configuration. Therefore, the project would create a significant unavoidable impact at this location in both directions in both peak hours. However, *this segment of Shaw Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Grantland Avenue, Parkway Drive to Bullard Avenue: Construct Grantland Avenue to four lanes with a raised landscaped median island in this segment. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Grantland Avenue, Bullard Avenue to Barstow Avenue: Construct Grantland Avenue to two lanes in the southbound direction with a raised landscaped median island in this segment. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Carnegie Avenue, Golden State Boulevard to Bullard Avenue: Construct Carnegie Avenue to two lanes in the westbound direction.

Significant Caltrans Facility Impacts

Based on the 2012 plus Phases 1 and 2 traffic analysis discussed above, the following study area Caltrans facilities are forecast to have significant impacts with addition of Phases 2A and 2B traffic. The following are improvements required to mitigate these impacts:

TRAF-17 Prior to obtaining a Certificate of Occupancy, Phases 2A and 2B shall pay their fair-share contribution towards improvements to Caltrans facilities noted below. The fair-share contribution shall be calculated per the February 2006 *Mutual Release and Settlement Agreement* between the City of Fresno and Caltrans District 6 (otherwise known as the "Interim Agreement"). This Interim Agreement provides guidance on the method for calculating a fair share to mitigate for impacts to State highways. Since Phase 1 will require a General Plan Amendment (GPA), and the GPA will increase trips over the existing use, the

"Combined Formula" was used to calculate fair share. The Combined Formula is provided below:

P = (P1/F1) + (P2 – P1)/F2, where:

P = fair share percentage
P1 = the higher of the a.m. or p.m. peak hour project trips without GPA
P2 = the higher of the a.m. or p.m. peak hour project trips with GPA
F1 = total 2025 corresponding future peak hour traffic without project
F2 = total 2025 corresponding future peak hour traffic with project

Table 9-25 shows the calculated Combined Share costs for impacted Caltrans facilities. The following are improvements for the impacted State facilities in the 2012 plus Phases 1 and 2 condition. As noted, some of these facilities are also part of the City's TSMI and FMSI fee programs. For all other facilities, payment of the fair-share cost based on the Combined Share formula would mitigate project impacts.

Mitigation measures to the following Caltrans facilities have been discussed above, either in the measures for intersections, queuing, and/or roadway segments. For facilities not previously discussed, the needed mitigation measures are provided below.

- Parkway Drive/Herndon Avenue (impacts to queuing discussed above)
- SR 99 northbound off-ramp/Herndon Avenue (impacts to queuing discussed above)
- SR 99 southbound ramps/Shaw Avenue (impacts to intersection LOS and queuing discussed above)
- SR 99 northbound ramps/Shaw Avenue (impacts to queuing discussed above)
- SR 99 southbound ramps/Ashlan Avenue (impacts to intersection LOS and queuing discussed above)
- SR 99 northbound ramps/Ashlan Avenue (impacts to queuing discussed above)
- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (impacts to roadway segment discussed above)
- SR 99 mainline northbound, Dakota Avenue to Ashlan Avenue: Phase 2 shall contribute its Combined Share percentage of cost to widen this segment of SR 99 to four lanes to mitigate cumulative impacts to mainline LOS.
- SR 99 mainline southbound, Dakota Avenue to Ashlan Avenue: Phase 2 shall contribute its Combined Share percentage of cost to widen this segment of SR 99 to four lanes to mitigate cumulative impacts to mainline LOS.
- SR 99 mainline northbound weaving section, Shaw Avenue to Herndon Avenue: Phase 2 shall contribute its Combined Share percentage of cost to widen this weaving section to three lanes to mitigate cumulative impacts to this weaving section.
- SR 99 mainline southbound weaving section, Shaw Avenue to Herndon Avenue: Phase 2 shall contribute its Combined Share percentage of cost to widen this weaving section to three lanes to mitigate significant cumulative impacts to this weaving section.

Table 9-25 – Phases 2A and 2B Combined Share Percentages for Impacted Caltrans Facilities

Location	GP Zone P1	Proposed Phases 2A-2B P2	2025 GP (No proj) F1	2025 + GPA (Phases 2A-2B) F2	Combined-Share P
RAMP INTERSECTIONS					
- SR 99 NB off-ramp/Herndon Avenue	32	1,019	1,432	3,435	30.97%
- Parkway Drive/Herndon Avenue	10	788	807	2,295	35.14%
- Parkway Dr/Grantland-SR 99 SB on-ramp	10	727	785	2,196	33.92%
- SR 99 SB ramps/Shaw Avenue	2	53	5,276	5,378	0.99%
- SR 99 NB ramps/Shaw Avenue	1	38	5,815	5,904	0.64%
- SR 99 SB ramps/Ashlan Avenue	5	36	3,466	3,585	1.01%
- SR 99 NB ramps/Ashlan Avenue	7	0	4,686	4,686	0.00%
- SR 99 SB off-ramp to Parkway Drive	7	4	1,170	1,178	0.34%
OVER-/UNDERCROSSINGS					
- Shaw Ave overcrossing EB direction	1	22	1,710	1,750	1.26%
- Ashlan Ave overcrossing EB direction	7	19	1,672	1,720	1.12%
AUXILIARY LANES					
- SR 99 NB off-ramp to Herndon Ave (aux lane)	19	227	672	1,179	20.47%
- SR 99 SB on-ramp from Parkway Dr (aux lane)	5	280	586	1,144	24.89%
MAINLINE LANES					
- SR 99 NB n/o Herndon Avenue	2	234	5,270	5,611	4.17%
- SR 99 SB n/o Herndon Avenue	6	51	4,913	4,998	1.02%
- SR 99 NB (future) Veterans Blvd to Herndon Ave	19	470	4,974	5,820	8.13%
- SR 99 SB Herndon Ave to (future) Veterans Blvd	5	898	4,666	6,056	14.85%
- SR 99 NB Shaw Ave to (future) Veterans Blvd	72	470	6,077	6,923	6.93%
- SR 99 SB (future) Veterans Blvd to Shaw Ave	28	898	5,912	7,302	12.39%
- SR 99 NB Ashlan Ave to Shaw Ave	72	337	6,301	6,887	4.99%
- SR 99 SB Shaw Ave to Ashlan Ave	26	652	6,031	7,138	9.20%
- SR 99 NB s/o Ashlan Avenue	64	214	7,014	7,313	2.96%
- SR 99 SB s/o Ashlan Avenue	22	615	7,057	8,025	7.70%

Note:

- "Combined" share percentage is determined by the following formula: P=(P1/F1)+(P2-P1)/F2.

Significant On-Site Circulation, Access, and Parking Impacts

TRAF-18 Prior to issuance of a Certificate of Occupancy, Phases 2A and 2B shall submit a site plan for review and approval by the City Traffic Engineering Division of Public Works. In addition to the site plan, each Phase will need a focused traffic analysis that addresses pedestrian/cyclist circulation through, to and from, each Phase of the Master Plan. The traffic analysis will also evaluate exact driveway locations, storage/queue under a 20 year horizon scenario, site distance (due to horizontal and vertical curves of the major streets in the area).

Year 2017 plus Phases 1, 2, 3, and 4

Traffic Volumes and Geometrics

Figure 9-11 illustrates the study area intersection geometrics and traffic control for the 2017 plus Phases 1, 2, 3, and 4 condition. As previously indicated, for the 2017 baseline condition, the City is planning to extend Veterans Boulevard from Bryan Avenue to west of (and beyond) SR 99. As part of the planned extension, the City would also construct a grade-separated overcrossing of Veterans Boulevard over the UPRR tracks and Golden State Boulevard, with ramp access to Veterans Boulevard. In that same period, the City and Caltrans will also have constructed a new partial cloverleaf interchange at SR 99/Veterans Boulevard. In addition, mitigation measures required from Phases 1 and 2 (notably SR 99/Herndon Avenue ramp improvements and Veterans Boulevard extension from Herndon Avenue to Bryan Avenue) were included in this impact analysis.

Traffic in this scenario was developed by adding the land uses of Phases 1, 2, 3, and 4 directly into Fresno COG's 2017 travel model. Peak hour turning volumes were derived based on specific post-processing methodology approved in the COG's *Recommended Procedures for Using Traffic Projections from the Fresno COG Travel Model*. Figure 9-12 illustrates the resulting Year 2017 plus Phases 1, 2, 3, and 4 peak hour traffic volumes.

Intersection Levels of Service

Table 9-26 presents the results of the year 2017 plus Phases 1 through 4 intersection LOS for the weekday peak hours as calculated in Synchro. In addition, the table also compares the Phases 1 through 4 LOS with the year 2017 baseline LOS and also indicates the project contribution at those intersections that are forecast to operate, or continue to operate, with unsatisfactory LOS (i.e., LOS E or F).

According to the table and based on the City's significance criteria, the following study intersections would be significantly impacted by the addition of Phases 1 through 4 to 2017 baseline traffic. Therefore, the proposed project would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or more at LOS E or F) at the following study intersections:

- SR 99 northbound ramps/Herndon Avenue (LOS C to F in p.m.)
- Palm Avenue/Herndon Avenue (LOS D to E in a.m., and additional delay ≥5 seconds to LOS F in p.m.)
- Hayes Avenue/Palo Alto Avenue (LOS C to E in p.m.)
- Bryan Avenue/Veterans Boulevard (LOS C to F in p.m.)
- Golden State Boulevard/Veterans Boulevard (LOS E to F in p.m.)
- Carnegie Avenue/Bullard Avenue (additional delay to LOS F in p.m.)
- Golden State Boulevard/Carnegie Avenue (additional delay ≥5 seconds to LOS F in p.m.)
- Palm Avenue/Bullard Avenue (additional delay to LOS F in p.m.)
- Golden State Boulevard/Shaw Avenue (additional delay ≥5 seconds to LOS F in p.m.)
- SR 99 southbound ramps/Ashlan Avenue (LOS E to LOS F in p.m.)
- SR 99 northbound ramps/Ashlan Avenue (LOS D to E in p.m.)

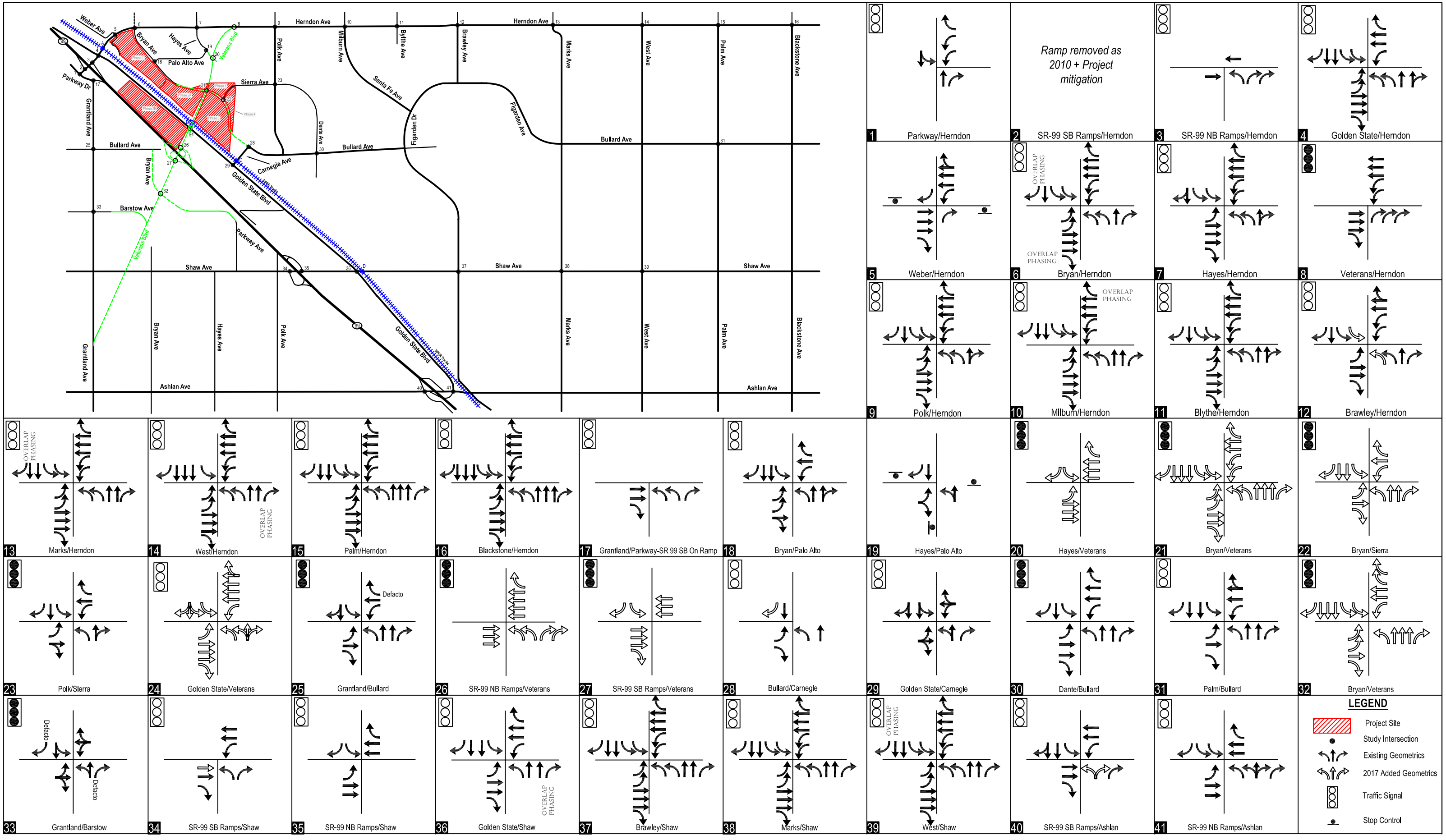

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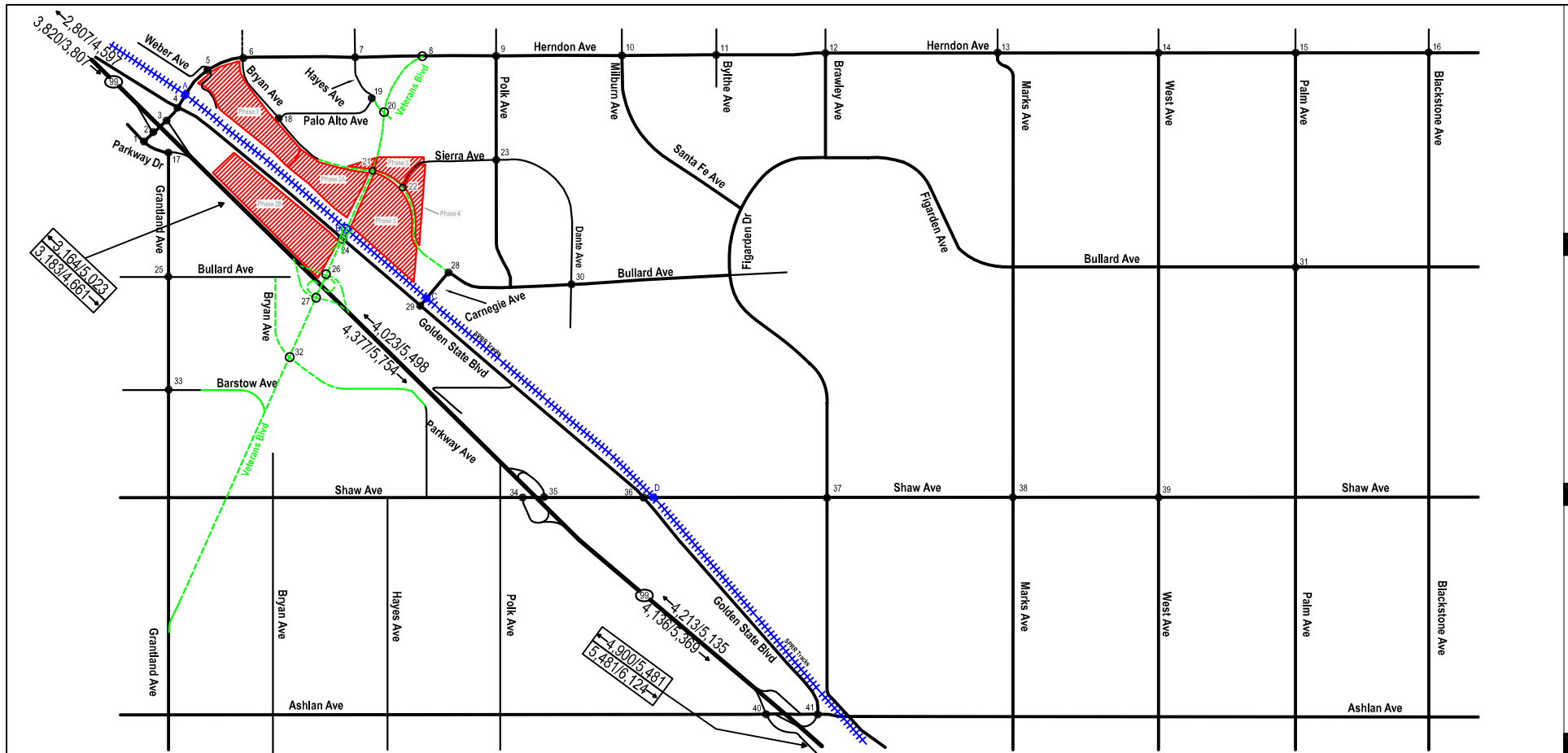
Figure 9-11
Year 2017 + Phase 1, 2, 3, and 4 Intersection Geometrics and Traffic Control



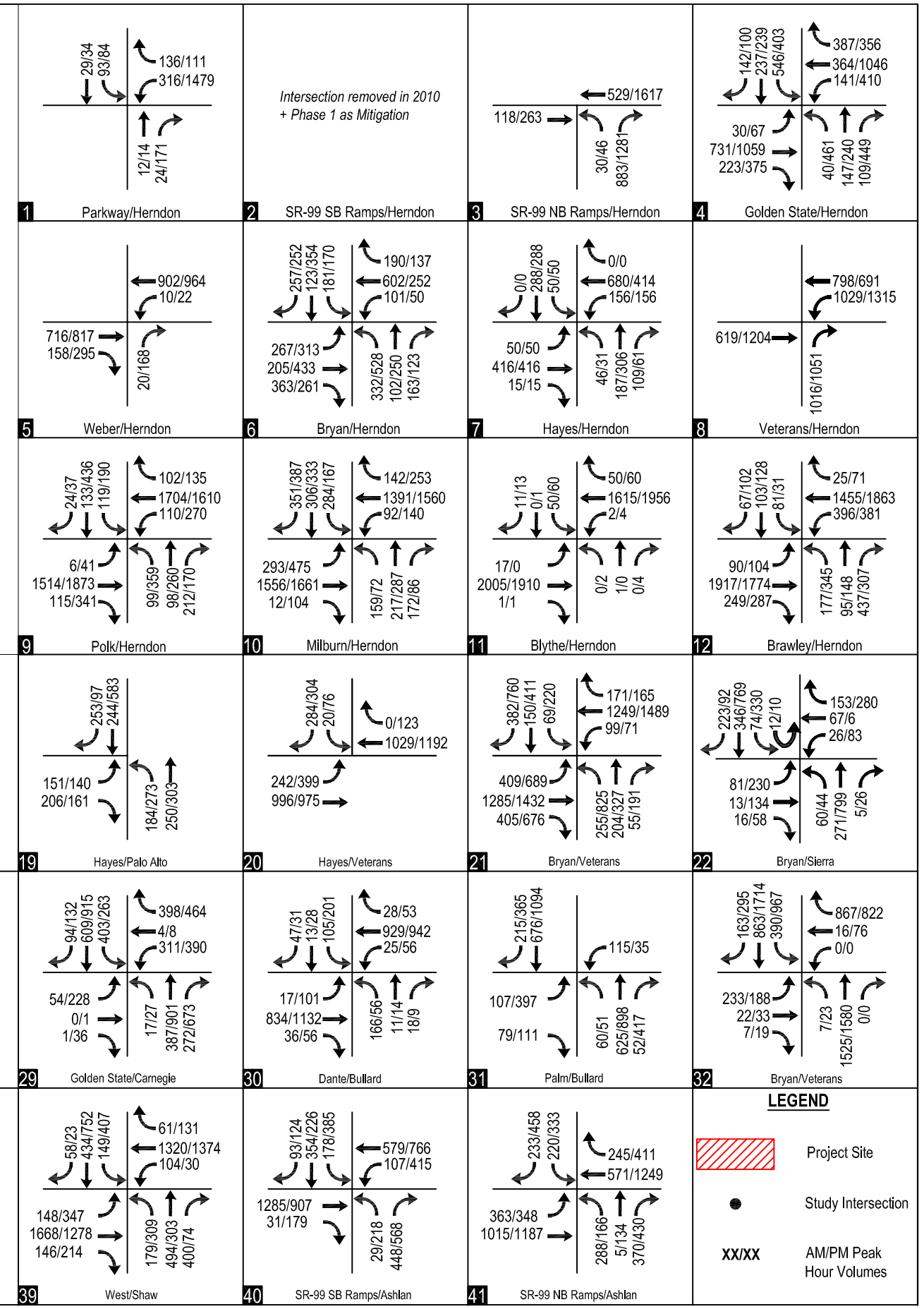


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Figure 9-12
Year 2017 + Phases 1, 2, 3, and 4 Weekday AM and PM Peak Hour Traffic Volumes

Table 9-26- Year 2017 Baseline plus Phases 1,2,3, & 4 Weekday AM and PM Peak Hour LOS Summary

		2017 Baseline				2017 + Project Phase 1-4			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	signal	10.1	B	14.7	B	10.8	B	53.0	D
2 99 SB Ramps/Herndon		36.3	E	26.6	D	--	--	--	--
3 99 NB Ramps/Herndon	signal	29.5	D	22.8	C	12.3	B	>80	F
4 Golden State/Herndon	signal	15.9	B	18.7	B	34.5	C	41.0	D
5 Weber/Herndon	unsignalized	10.2	B	9.9	A	10.0	A	11.9	B
6 Bryan/Herndon	signal	31.8	C	36.6	D	26.8	C	28.9	C
7 Hayes/Herndon	signal	20.4	C	19.5	B	20.4	C	23.0	C
8 Veterans/Herndon	signal	6.1	A	6.4	A	6.6	A	10.4	B
9 Polk/Herndon	signal	18.7	B	22.0	C	19.2	B	47.4	D
10 Milburn/Herndon	signal	28.3	C	31.0	C	29.2	C	30.5	C
11 Blythe/Herndon	signal	14.2	B	15.9	B	13.1	B	12.3	B
12 Brawley/Herndon	signal	45.4	D	59.6	E	46.7	D	49.2	D
13 Marks/Herndon	signal	28.9	C	38.5	D	30.5	C	42.2	D
14 West/Herndon	signal	36.0	D	33.3	C	37.6	D	34.8	C
15 Palm/Herndon	signal	51.9	D	>80	F	77.4	E	>80	F
16 Blackstone/Herndon	signal	25.3	C	32.3	C	29.3	C	31.7	C
17 Grantland/Parkway	signal	13.6	B	12.6	B	14.5	B	19.7	B
18 Bryan/Palo Alto	signal	11.3	B	9.4	A	21.8	C	47.7	D
19 Hayes/Palo Alto	unsignalized	19.0	C	16.4	C	21.3	C	40.0	E
20 Veterans/Hayes	signal	9.3	A	12.5	B	11.0	B	15.6	B
21 Veterans/Bryan	signal	19.6	B	43.9	D	25.6	C	>80	F
22 Bryan/Sierra	signal	12.1	B	10.5	B	18.3	B	31.6	C
23 Polk/Sierra	signal	11.0	B	13.6	B	7.0	A	10.3	B
24 Golden State/Veterans	signal	20.0	C	56.5	E	51.9	D	>80	F
25 Grantland/Bullard	unsignalized	10.9	B	10.4	B	14.3	B	17.1	B
26 99 NB Ramps/Veterans	signal	8.2	A	14.6	B	22.0	C	>80	F
27 99 SB Ramps/Veterans	signal	3.4	A	7.3	A	3.5	A	>80	F
28 Carnegie/Bullard	signal	>50	F	>50	F	22.6	C	>80	F
29 Golden State/Carnegie	signal	>50	F	>50	F	>80	F	>80	F
30 Dante/Bullard	unsignalized	29.6	D	>50	F	7.4	A	8.0	A
31 Palm/Bullard	signal	60.9	E	>80	F	26.3	C	>80	F
32 Veterans/Bryan	signal	21.4	C	26.0	C	29.9	C	33.7	C
33 Grantland/Barstow	signal	12.9	B	11.8	B	7.3	A	8.8	A
34 99 SB Ramps/Shaw	signal	11.1	B	10.5	B	10.9	B	9.6	A
35 99 NB Ramps/Shaw	signal	11.4	B	11.2	B	11.0	B	14.5	B
36 Golden State/Shaw	signal	>80	F	>80	F	69.3	E	>80	F
37 Brawley/Shaw	signal	24.7	C	41.6	D	22.8	C	48.5	D
38 Marks/Shaw	signal	31.6	C	61.2	E	29.4	C	64.7	E
39 West/Shaw	signal	26.9	C	33.8	C	26.7	C	35.8	D
40 99 SB Ramps/Ashlan	signal	35.2	D	56.0	E	32.4	C	>80	F
41 99 NB Ramps/Ashlan	signal	36.4	D	53.9	D	35.3	D	77.2	E

Notes:

XXX Denotes delay that exceeds thresholds

XXX Denotes significant project impact

Queuing Analysis

Table 9-27 presents the results of the 2017 plus Phases 1 through 4 weekday a.m. and p.m. peak hour queuing analyses based on the Synchro LOS analysis and the calculated 95th percentile queue lengths for each left- and/or right turn storage lane for each study area intersection. Based on the queuing analysis, the addition of Phases 1 through 4 traffic to the 2017 baseline condition would create new significant queues and/or exacerbate significant baseline queues by more than one vehicle (or 25 feet), and that would exceed a storage lane's capacity during the weekday peak hours:

- Golden State Boulevard/Herndon Avenue (EBR and WBL in p.m.)
- Polk Avenue/Herndon Avenue (NBL in p.m.)
- Milburn Avenue/Herndon Avenue (SBR in both peak hours)
- Brawley Avenue/Herndon Avenue (NBL and WBL in both peak hours; NBR in a.m.; EBR in p.m.)
- Marks Avenue/Herndon Avenue (NBR and EBR in a.m.; SBR and WBR in p.m.; EBL in both peak hours)
- West Avenue/Herndon Avenue (NBR in a.m.; SBL in both peak hours)
- Palm Avenue/Herndon Avenue (NBL, SBR, and EBL in both peak hours; WBR in a.m.)
- Blackstone Avenue/Herndon Avenue (WBR in both peak hours; SBR in p.m.)
- Bryan Avenue/Palo Alto Avenue (NBL in both peak hours; SBL in a.m.; EBL and WBL in p.m.)
- Hayes Avenue/Veterans Boulevard (EBL in p.m.)
- Bryan Avenue/Veterans Boulevard (NBL, SBR, and EBL in p.m.; and EBR in both peak hours)
- Bryan Avenue/Sierra Avenue (SBL, EBL, and WBL in p.m.)
- Golden State Boulevard/Veterans Boulevard (NBL and EBL in both peak hours; SBL in p.m.)
- Bullard Avenue/Carnegie Avenue (NBL and EBL in both peak hours; EBR in p.m.)
- Golden State Boulevard/Carnegie Avenue (NBR in both peak hours)
- Palm Avenue/Bullard Avenue (WBL in a.m.; NBL, NBR, SBL, SBR, and EBL in p.m.)
- Bryan Avenue (West)/Veterans Boulevard (SBL and WBR in both peak hours)
- Golden State Boulevard/Shaw Avenue (NBR, SBL, WBL, and WBR in both peak hours)
- Brawley Avenue/Shaw Avenue (SBL in p.m.)
- Marks Avenue/Shaw Avenue (NBR and SBR in both peak hours; NBL, EBL, WBL in p.m.)
- West Avenue/Shaw Avenue (NBR in a.m.)
- SR 99 southbound ramps/Ashlan Avenue (NBR in both peak hours; SBL, EBR, and WBL in p.m.)
- SR 99 northbound ramps/Ashlan Avenue (EBL in both peak hours; NBR, SBL, SBR, and WBR in p.m.)

Table 9-27 - 2019 Baseline plus Project Phases 1,2,3, & 4 Intersection Queuing Analysis Summary

Signalized Intersection		Storage & 95th Percentile Queue Lengths (ft)							
		NBL	NBR	SBL	SBR	EBL	EBR	WBL	WBR
1 Parkway/Herndon	Storage Length[1]	--	150	--	--	--	--	340	340
	AM Queue[1]	--	4	--	--	--	--	52	26
	PM Queue[1]	--	34	--	--	--	--	290	2
3 SR-99 NB Ramps/Herndon	Storage Length[1]	250	500	--	--	--	--	--	--
	AM Queue[1]	18	32	--	--	--	--	--	--
	PM Queue[1]	70	293	--	--	--	--	--	--
4 Golden State/Herndon	Storage Length[1]	310	--	330	200	330	200	330	200
	AM Queue[1]	23	--	212	26	20	55	137	131
	PM Queue[1]	242	--	198	78	43	246	446	50
6 Bryan/Herndon	Storage Length[1]	250	250	250	250	165	165	165	165
	AM Queue[1]	106	37	72	125	128	1	47	48
	PM Queue[1]	171	34	68	97	146	63	29	47
7 Hayes/Herndon	Storage Length[1]	140	--	100	--	350	250	250	150
	AM Queue[1]	23	--	24	--	48	12	56	0
	PM Queue[1]	36	--	58	--	48	12	143	0
8 Veterans/Herndon	Storage Length[1]	--	250	--	--	--	--	250	--
	AM Queue[1]	--	88	--	--	--	--	146	--
	PM Queue[1]	--	132	--	--	--	--	294	--
9 Polk/Herndon	Storage Length[1]	140	--	200	160	225	100	250	100
	AM Queue[1]	44	--	59	16	7	28	54	37
	PM Queue[1]	232	--	133	31	21	89	179	64
10 Milburn/Herndon	Storage Length[1]	225	100	230	100	230	135	230	140
	AM Queue[1]	81	61	138	196	131	11	44	27
	PM Queue[1]	41	36	103	184	212	32	82	100
11 Blythe/Herndon	Storage Length[1]	235	235	120	120	220	140	220	140
	AM Queue[1]	0	0	34	0	15	2	4	22
	PM Queue[1]	4	0	39	16	15	2	6	21
12 Brawley/Herndon	Storage Length[1]	105	75	80	80	290	150	310	100
	AM Queue[1]	148	266	72	41	122	128	521	17
	PM Queue[1]	256	89	31	52	145	172	533	46
13 Marks/Herndon	Storage Length[1]	245	125	160	160	145	50	280	190
	AM Queue[1]	104	138	107	121	167	164	126	100
	PM Queue[1]	140	67	131	500	329	97	71	212
14 West/Herndon	Storage Length[1]	175	65	185	350	260	200	275	140
	AM Queue[1]	57	280	336	29	43	68	56	71
	PM Queue[1]	70	24	217	83	34	43	100	59
15 Palm/Herndon	Storage Length[1]	145	280	250	230	245	190	210	145
	AM Queue[1]	152	40	95	298	517	58	114	280
	PM Queue[1]	222	35	172	593	599	39	68	116
16 Blackstone/Herndon	Storage Length[1]	250	110	240	90	250	160	250	100
	AM Queue[1]	19	39	113	41	162	41	110	136
	PM Queue[1]	86	59	100	95	67	164	215	132
17 Grantland/Parkway	Storage Length[1]	420	80	--	--	--	150	--	--
	AM Queue[1]	12	23	--	--	--	30	--	--
	PM Queue[1]	95	79	--	--	--	20	--	--
18 Bryan/Palo Alto	Storage Length[1]	150	150	150	150	150	--	150	150
	AM Queue[1]	163	5	262	25	45	0	9	65
	PM Queue[1]	612	11	119	96	244	12	218	42
20 Hayes/Veterans	Storage Length[1]	--	--	150	150	150	--	--	150
	AM Queue[1]	--	--	21	52	146	--	--	0
	PM Queue[1]	--	--	58	57	309	--	--	33
21 Bryan/Veterans	Storage Length[1]	150	150	150	150	150	150	150	150
	AM Queue[1]	353	32	93	103	489	285	121	82
	PM Queue[1]	1,348	110	260	923	1,147	814	178	133
22 Bryan/Sierra	Storage Length[1]	150	150	150	150	150	150	150	150
	AM Queue[1]	54	7	74	49	67	13	33	46
	PM Queue[1]	58	22	384	37	254	31	95	69
23 Polk/Sierra	Storage Length[1]	150	--	150	60	150	--	135	135
	AM Queue[1]	45	--	32	20	18	--	8	15
	PM Queue[1]	95	--	77	36	33	--	20	17
24 Golden State/Veterans	Storage Length[1]	310	--	300	--	380	250	320	--
	AM Queue[1]	369	--	162	--	447	147	333	--
	PM Queue[1]	704	--	871	--	1,007	120	644	--
25 Grantland/Bullard	Storage Length[1]	250	--	250	--	250	100	100	100
	AM Queue[1]	1	--	3	--	2	1	0	16
	PM Queue[1]	1	--	3	--	2	1	0	16
26 SR 99 NB Ramps/Veterans	Storage Length[1]	1,000	1,000	--	--	--	--	--	380
	AM Queue[1]	43	353	--	--	--	--	--	21
	PM Queue[1]	92	793	--	--	--	--	--	38
27 SR 99 SB Ramps/Veterans	Storage Length[1]	--	--	1,000	1,000	--	400	--	--
	AM Queue[1]	--	--	22	44	--	0	--	--
	PM Queue[1]	--	--	156	651	--	0	--	--
28 Bullard/Carnegie	Storage Length[1]	225	--	--	150	250	615	--	--
	AM Queue[1]	530	--	--	16	307	85	--	--
	PM Queue[1]	801	--	--	26	757	468	--	--
29 Golden State/Carnegie	Storage Length[1]	--	100	--	--	--	--	--	--
	AM Queue[1]	--	58	--	--	--	--	--	--
	PM Queue[1]	--	507	--	--	--	--	--	--
30 Dante/Bullard	Storage Length[1]	130	85	145	145	250	150	220	150
	AM Queue[1]	58	8	39	15	10	10	14	9
	PM Queue[1]	38	9	117	16	62	12	38	11
31 Palm/Bullard	Storage Length[1]	120	55	90	70	150	150	140	--
	AM Queue[1]	72	22	35	43	120	26	129	--
	PM Queue[1]	130	279	175	159	612	32	67	--
32 Bryan (West)/Veterans[2]	Storage Length[1]	150	150	150	150	150	150	150	150
	AM Queue[1]	21	0	175	13	117	12	0	472
	PM Queue[1]	49	0	590	22	113	20	0	372
33 Grantland/Barstow	Storage Length[1]	--	100	--	100	--	--	--	--
	AM Queue[1]	--	3	--	3	--	--	--	--
	PM Queue[1]	--	0	--	7	--	--	--	--
34 99 SB Ramps/Shaw[2]	Storage Length[1]	--	--	1,000	1,000	--	150	--	--
	AM Queue[1]	--	--	81	13	--	0	--	--
	PM Queue[1]	--	--	85	17	--	0	--	--
35 99 NB Ramps/Shaw[2]	Storage Length[1]	1,430	1,000	--	--	--	150	--	150
	AM Queue[1]	279	23	--	--	--	0	--	0
	PM Queue[1]	402	68	--	--	--	0	--	250
36 Golden State/Shaw	Storage Length[1]	140	140	165	165	180	180	190	190
	AM Queue[1]	38	734	737	6	27	37	461	204
	PM Queue[1]	83	1,080	923	14	16	64	708	826
37 Brawley/Shaw	Storage Length[1]	260	100	220	130	220	130	200	120
	AM Queue[1]	86	27	10	34	22	1	43	22
	PM Queue[1]	223	78	239	59	183	97	69	46
38 Marks/Shaw	Storage Length[1]	190	105	240	270	235	135	275	155
	AM Queue[1]	93	128	123	330	53	35	88	22
	PM Queue[1]	253	454	131	937	302	81	276	96
39 West/Shaw	Storage Length[1]	240	75	185	115	240	155	210	125
	AM Queue[1]	95	277	86	26	74	37	54	23
	PM Queue[1]	174	36	196	11	191	48	24	62
40 99 SB Ramps/Ashlan	Storage Length[1]	--	100	360	--	--	100	575	--
	AM Queue[1]	--	108	173	--	--	25	175	--
	PM Queue[1]	--	400	576	--	--	149	611	--
41 99 NB Ramps/Ashlan	Storage Length[1]	240	520	210	210	320	--	--	85
	AM Queue[1]	213	195	105	63	378	--	--	120
	PM Queue[1]	220	390	268	306	529	--	--	348

Notes:
[1] Storage length determined by field measurement and review of scaled aerial photography. AM & PM queue lengths determined in *Synchro* .
[2] Intersection is not existing, storage lengths were based upon 95th Percentile Queue.
XXX-Denotes 95th percentile queue that would exceed the lane's storage capacity.

Roadway Level of Service Analysis

Table 9-28 presents the results of the 2017 plus Phases 1 through 4 roadway level of service analysis for the weekday a.m. and p.m. peak hours. In addition, the table provides a comparison of the 2017 Baseline and 2017 plus Phases 1 through 4 roadway levels of service. The addition of the Phases 1 through 4 trips to the following roadway segments would be considered a significant impact since the LOS changes from satisfactory conditions (LOS D or better) in 2017 Baseline condition to unsatisfactory (i.e. LOS E or F) levels with the addition of traffic from Phases 1 through 4:

- Herndon Avenue: Parkway Drive to SR 99 southbound ramps (LOS C to LOS F westbound p.m.)
- Herndon Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS C to LOS F westbound p.m.)
- Herndon Avenue: SR 99 northbound ramps to Golden State Boulevard (LOS D to LOS F eastbound a.m.; LOS C to F eastbound and westbound p.m.)
- Herndon Avenue: Brawley Avenue to Marks Avenue (LOS D to LOS E eastbound a.m.; LOS D to LOS E westbound p.m.)
- Herndon Avenue: Marks Avenue to West Avenue (LOS D to LOS E eastbound a.m.)
- Parkway Drive: Herndon Avenue to Grantland Avenue (LOS C to LOS F westbound p.m.)
- Veterans Boulevard: Golden State Boulevard to Bryan Avenue (LOS C to LOS F eastbound a.m.; LOS D to LOS F eastbound p.m.)
- Veterans Boulevard: SR 99 northbound ramps to Golden State Boulevard (LOS D to LOS F eastbound p.m.)
- Veterans Boulevard: SR 99 southbound ramps to SR 99 northbound ramps (LOS D to LOS F eastbound p.m.)
- Veterans Boulevard: Bryan Avenue to SR 99 southbound ramps (LOS D to LOS F eastbound a.m.; LOS D to LOS F eastbound p.m.)
- Sierra Avenue: Bryan Avenue to Polk Avenue (LOS C to F westbound a.m.; LOS C to F eastbound p.m.)
- Polk Avenue: Herndon Avenue to Sierra Avenue (LOS C to E northbound p.m.; LOS C to F southbound p.m.)
- Golden State Boulevard: Herndon Avenue to Veterans Boulevard (LOS E to F southbound a.m.; LOS C to F northbound p.m.; LOS D to F southbound p.m.)
- Golden State Boulevard: Veterans Boulevard to Carnegie Avenue (LOS C to F northbound a.m.)
- Golden State Boulevard: Shaw Avenue to Ashlan Avenue (LOS D to E southbound a.m.; LOS D to F southbound p.m.)
- Shaw Avenue: west of SR 99 southbound ramps (LOS D to F eastbound p.m.)
- Shaw Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS D to F westbound a.m.)
- Shaw Avenue: Golden State Boulevard to Brawley Avenue (LOS D to F westbound p.m.)
- Shaw Avenue: Brawley Avenue to Marks Avenue (LOS E to F westbound p.m.)

Table 9-28 - Year 2017 Baseline plus Project Phase 1, 2, & 3 Roadway Segment Level of Service Summary

		2012 plus Phase 1-3											
		AM Peak Hour						PM Peak Hour					
Roadway Segment	No. of Lanes	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]
Herndon Avenue													
Parkway to SR 99 SB Ramps	1	118	C		555	C		255	C		1,656	F	1.30
SR 99 SB Ramps to SR 99 NB Ramps	1	118	C		559	C		263	C		1,617	F	
SR 99 NB Ramps to Golden State	1	1,001	F	0.27	529	C		1,544	F	1.02	1,617	F	1.33
Golden State to Weber	3	1,386	C		917	C		1,917	C		1,812	C	
Weber to Bryan	3	835	C		1,191	C		1,129	C		1,032	C	
Bryan to Hayes	3	549	C		893	C		729	C		439	C	
Hayes to Veterans	3	575	C		836	C		1,204	C		691	C	
Veterans to Polk	3	1,635	C		1,827	C		2,255	D		2,006	C	
Polk to Milburn	3	1,861	C		1,916	C		2,240	D		2,019	C	
Milburn to Blythe	3	2,023	C		1,626	C		1,914	C		1,971	C	
Blythe to Brawley	3	2,256	D		1,699	C		2,165	D		2,310	D	
Brawley to Marks	3	2,643	E	0.05	1,944	C		2,277	D		2,629	E	0.05
Marks to West	3	2,643	E	0.05	2,041	C		2,178	D		2,570	D	
West to Palm	3	2,971	F	0.10	2,187	D		2,204	D		2,842	F	0.01
Palm to Blackstone	3	2,334	D		1,812	C		1,743	C		2,226	D	
e/o Blackstone	3	1,925	C		2,221	D		1,733	C		2,235	D	
Parkway Drive													
Herndon and Grantland	1	78	C		556	D		211	C		1,549	F	1.33
Bryan Avenue													
Herndon to Palo Alto	2	633	C		642	C		1,129	D		723	C	
Palo Alto to Veterans	2	865	C		601	C		1,467	D		1,197	D	
Veterans to Sierra	2	514	C		655	C		1,364	D		1,210	D	
Sierra and Carnegie	2	848	C		604	C		974	C		1,152	D	
Carnegie to Dante	2	1,117	C		834	C		1,031	C		1,300	D	
Palo Alto Avenue													
Bryan to Hayes	1	357	C		456	C		301	C		356	C	
Hayes Avenue													
Herndon to Palo Alto	1	401	C		516	D		443	C		393	C	
Palo Alto to Veterans	1	434	C		450	C		576	D		471	C	
Veterans Avenue													
Hayes to Herndon	3	1,016	C		1,029	C		1,051	C		1,315	C	
Bryan to Hayes	3	1,238	C		1,313	C		1,374	C		1,496	C	
Golden State to Bryan	3	2,756	F	0.48	2,344	D		3,588	F	0.56	4,048	F	0.43
SR 99 NB Ramps to GS	3	3,155	F	0.41	2,443	D		3,578	F	0.43	4,501	F	0.29
SR 99 SB Ramps to SR 99 NB Ramps	3	2,274	D		2,269	D		2,687	F		4,105	F	
Bryan(2) to SR 99 SB Ramps	3	2,615	F	0.11	1,416	C		2,650	F	0.09	2,975	F	0.09
Sierra Avenue													
Bryan to Polk	1	311	C		1,334	F	1.16	813	F	0.61	2,174	F	1.30
Polk Avenue													
Herndon to Sierra	1	409	C		350	C		789	E	0.50	912	F	0.66
Golden State Boulevard													
Herndon to Veterans	1	461	C		847	F	0.08	1,150	F	1.11	1,202	F	0.75
Veterans to Carnegie	1	839	F	0.45	1,106	F	0.09	1,593	F	0.58	1,310	F	0.58
Carnegie to Shaw	1	719	D		1,008	F	0.17	1,745	F	0.85	1,415	F	0.64
Shaw to Ashlan	1	941	F	0.13	809	E	0.36	1,729	F	0.26	1,671	F	1.14
Shaw Avenue													
w/o SR 99 SB Ramps	1	723	D		747	D		885	F	0.40	965	F	-0.11
SR 99 SB Ramps to SR 99 NB Ramps	1-2	888	F		1,476	D		1,047	F		1,746	F	
SR 99 NB Ramps to Golden State	2	731	C		1,350	D		1,064	C		2,065	F	0.16
Golden State to Brawley	3	1,788	D		1,554	C		2,379	D		2,827	F	0.20
Brawley to Marks	3	1,938	D		1,824	D		2,363	D		2,585	F	0.05
Marks to West	3	2,207	D		1,557	C		2,152	D		2,098	D	
e/o West	3	2,217	D		1,485	C		1,759	D		1,535	C	
Grantland Avenue													
Parkway to Bullard	1	300	C		82	C		357	C		392	C	
Bullard to Barstow	1	71	C		196	C		150	C		302	C	
Palm Avenue													
Herndon to Bullard	2	1,271	D		1,659	E	0.11	1,391	D		1,569	D	
Dante Avenue													
Polk to Bullard	1	261	C		390	C		725	C		465	C	
Carnegie Avenue													
Golden State to Bullard	1	679	D		718	D		953	F	0.21	862	F	0.38
Ashlan Avenue													
SR 99 SB Ramps to SR 99 NB Ramps	2	1,911	F		1,092	C		1,860	F		1,873	F	

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* , for State Two-Way Arterials (Class II) & Non-State Roadways.

[2] V/C based on LOS F capacities in the Florida Tables

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact (v/c ≥ 0.15 per the City of Fresno General Plan Transportation Policy B-3)

- Palm Avenue: Herndon Avenue to Bullard Avenue (LOS D to E westbound a.m.)
- Carnegie Avenue: Golden State Boulevard to Bullard Avenue (LOS E to F eastbound p.m.; LOS D to F westbound p.m.)
- Ashlan Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS E to F westbound p.m.)

Freeway Level of Service Analyses

Year 2017 plus Phases 1, 2, 3, and 4 freeway segment traffic volume forecasts were post-processed by DKS using the Fresno COG 2017 travel model.

Mainline Levels of Service

Table 9-29 provides the Year 2012 plus Phases 1 and 2 freeway level of service summary.

Table 9-29 – Year 2017 plus Phases 1, 2, 3, and 4 Freeway Segment Level of Service Summary

Freeway	From	To	Density	LOS
Northbound AM				
SR 99	Herndon Avenue	Avenue 7	17.0	B
	Veterans Boulevard	Herndon Avenue	19.9	C
	Shaw Avenue	Veterans Boulevard	25.4	C
	Ashlan Avenue	Shaw Avenue	26.2	D
	Dakota Avenue	Ashlan Avenue	32.4	D
Southbound AM				
SR 99	Avenue 7	Herndon Avenue	23.2	C
	Herndon Avenue	Veterans Boulevard	20.0	C
	Veterans Boulevard	Shaw Avenue	27.9	D
	Shaw Avenue	Ashlan Avenue	25.6	C
	Ashlan Avenue	Dakota Avenue	28.6	D
Northbound PM				
SR 99	Herndon Avenue	Avenue 7	28.8	D
	Veterans Boulevard	Herndon Avenue	33.7	D
	Shaw Avenue	Veterans Boulevard	39.9	E
	Ashlan Avenue	Shaw Avenue	34.5	D
	Dakota Avenue	Ashlan Avenue	39.7	E
Southbound PM				
SR 99	Avenue 7	Herndon Avenue	23.1	C
	Herndon Avenue	Veterans Boulevard	30.2	D
	Veterans Boulevard	Shaw Avenue	44.5	E
	Shaw Avenue	Ashlan Avenue	37.4	E
	Ashlan Avenue	Dakota Avenue	>45.0	F

According to the table, the addition of Phases 1 through 4 trips to SR 99 would create a significant impact to the following segments:

- SR 99 northbound between Shaw Avenue and Ashlan Avenue (LOS C to LOS D in the a.m. peak hour)
- SR 99 northbound between Ashlan Avenue and Dakota Avenue (LOS C to LOS D in the a.m. peak hour)
- SR 99 southbound between Herndon Avenue and Veterans Boulevard (LOS C to LOS D in the p.m. peak hour)
- SR 99 southbound between Veterans Boulevard to Shaw Avenue (LOS C to LOS E in the p.m. peak hour)

Weaving Section Levels of Service

The SR 99 mainline and ramp entry and exit volumes for the 2017 plus Phases 1 through 4 scenario were analyzed using Figure 504.7A from the HDM. Results from this analysis are shown in Table 9-30. In addition, the table also shows a comparison with the 2017 baseline scenario, as well as indicates the LOS for mitigation measures (if needed). Detailed calculations on the Leisch nomographs are provided in Appendix F.

Table 9-30 – Year 2017 plus Phases 1 through 4 Freeway Weaving Level of Service Summary

	2017 Baseline			2017 + Phases 1-4							
		LOS			LOS without Mitigation				LOS with Mitigation		
Segment	No. of Lanes	AM	PM	No. of Lanes	AM	Significant Impact	PM	Significant Impact	No. of Lanes	AM	PM
SR 99 northbound											
Shaw Ave to Veterans Blvd	3	B	E	3	D	yes	F	yes	4 (w/ aux)	C	D
Veterans Blvd to Herndon Ave	3	B	D	3	C	no	E	yes	--	--	--
SR 99 southbound											
Herndon Ave to Veterans Blvd	3	B	C	3	B	no	E	yes	4 (w/ aux)	A	C
Veterans Blvd to Shaw Ave	3	D	E	3	D	no	E	no	--	--	--

As shown in the table, addition of Phases 1, 2, 3, and 4 traffic to SR 99 would create new significant impacts at the following weaving sections:

- SR 99 northbound: Shaw Avenue to Veterans Boulevard (LOS B to D in the a.m. peak hour; LOS E to F in the p.m. peak hour)
- SR 99 southbound: Herndon Avenue to Veterans Boulevard (LOS C to E in the p.m. peak hour).

At-Grade Railroad Crossing Analysis

Using the HCM "Back of Queue" queuing methodology to analyze the vehicular queuing, Table 9-31 presents the at-grade railroad crossing analysis summary for the 2017 plus Phases 1, 2, 3, and 4 condition. The HCM calculation sheets are provided in Appendix H.

According to the table, addition of Phases 1, 2, 3, and 4 traffic would not cause new queuing impacts (i.e., new impacts to adjacent major intersections from the baseline condition) at the study area crossings.

Table 9-31 – Year 2017 plus Phases 1, 2, 3, and 4 At-Grade Railroad Crossing Analysis Summary

Crossing Location	Peak Hour [1]	Rail Crossing Time (seconds) [2]	Vehicular Queue (feet) [3]		Impact to Adjacent Major Intersection [4]		Significant Project Impact?	
			e/o tracks	w/o tracks	e/o tracks	w/o tracks	e/o tracks	w/o tracks
Herndon Avenue	*Grade Separated Underpass Improvement*							
Carnegie Avenue	AM	243	1,203	1,385	Yes	Yes	No	No
	PM	110	658	950	No	Yes	No	No
Shaw Avenue	AM	300	2,668	3,518	Yes	Yes	No	No
	PM	235	9,009	5,191	Yes	Yes	No	No

[1] - Based on observed train crossings in 2007 within the AM and PM peak commute hours.

[2] - Based on time that train crossing gate arms go down, to time gate arms go up.

[3] - Vehicle queue determined using *Highway Capacity Manual* (HCM) "Back of Queue Equation".

[4] – Impact based on whether vehicular queue would extend to an adjacent major intersection. For Herndon and Shaw Avenues the major intersection west of tracks will be the northbound ramp intersections with SR 99, rather than the closely spaced intersections with Golden State Blvd/Herndon Ave (125 ft) and Golden State Blvd/Shaw Ave (50 ft).

Mitigation Measures

TRAF-19 Phases 3 and 4 shall pay their Traffic Signal Mitigation Impact (TSMI) Fee of $45.98 per average daily trip (ADT) at the time of building permit. This fee is reviewed and updated yearly and the applicant pays the TSMI fee in place at the time of the building permit. Based on the Phase 3 ADT of 10,908 and the current TSMI fee Phase 3 shall pay $501,549.84. Based on the Phase 4 ADT of 6,016, Phase 2B shall pay $276,615.68.

This TSMI fee is credited against signal installation and Intelligent Transportation System (ITS) improvements (constructed at their ultimate location) anticipated to buildout of the 2025 General Plan Circulation Element and included in the *Nexus Study* for the TSMI fee. Project specific impacts that are not consistent with the 2025 General Plan, Public Works P69 standards, and/or already incorporated into the TSMI fees infrastructure costs are not reimbursable unless the City Engineer and City Traffic Engineer include the new traffic signal and/or ITS infrastructure in the next update, and the applicant agrees to pay the new calculated TSMI fee that includes the new infrastructure.

TRAF-20 Phases 3 and 4 shall pay their Fresno Major Street Impact (FMSI) Fee which will be determined at time of building permit. Effective July 1, 2008, the appropriate FMSI fees would contain the City Wide Street Impact Fee plus the New Growth Area Major Street Impact Fee.

Significant Impacts at Intersections

Based on the 2017 plus Phases 1,2, 3, and 4 traffic analysis discussed above, the proposed project would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or more at LOS E or F) in the weekday a.m. and/or p.m. peak hours to the study intersections. The following are improvements required to mitigate these impacts:

TRAF-21 Prior to obtaining a Certificate of Occupancy, Phase 3 and 4 shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study intersections in the 2017 plus Phases 1, 2, 3, and 4 condition:

SR 99 northbound ramps/Herndon Avenue: Based on the forecast 2017 p.m. peak hour volumes, a high volume of northbound right turns from the off-ramp is forecast. This intersection would be built out to its ultimate configuration (left turn lane and dual right turn lanes on off-ramp approach) and a free right turn lane is not recommended at this ramp due to the close intersection spacing between the off-ramp and Golden State Boulevard. Therefore, addition of Phases 3 and 4 traffic to this intersection would be a significant unavoidable impact.

Palm Avenue/Herndon Avenue: Widen the southbound approach and construct a third southbound through lane. This intersection is not on the City's TSMI list.

Hayes Avenue/Palo Alto Avenue: Widen and re-stripe the northbound approach to provide a dedicated left turn lane and through lane. This intersection is not on the City's TSMI list.

Bryan Avenue/Veterans Boulevard: This signalized intersection would be built out to its ultimate configuration and there is limited- to no available right-of-way for additional improvements. As such, no feasible mitigation can be recommended. Therefore, the project would create a significant unavoidable impact at this location; however, *this segment of Veterans Boulevard has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Golden State Boulevard/Veterans Boulevard: This signalized intersection would be built out to its ultimate configuration and there is limited- to no available right-of-way for additional improvements. As such, no feasible mitigation can be recommended. Therefore, the project would create a significant unavoidable impact at this location; however, *this segment of Veterans Boulevard has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Bullard Avenue/Carnegie Avenue: Perform a traffic signal modification to provide protected left turn phasing for the northbound left turn movement. In addition, widen the eastbound approach and construct a second (dual) left turn lane. This traffic signal is included in the TSMI Fee and can be credited/reimbursed.

Golden State Boulevard/Carnegie Avenue: Widen the westbound approach and construct a dedicated left turn lane. This intersection is on the City's TSMI list and improvements can be credited/reimbursed.

Palm Avenue/Bullard Avenue: Widen the eastbound approach and construct a second (dual) left turn lane. This intersection is not on the City's TSMI list.

Golden State Boulevard/Shaw Avenue: Widen the southbound and westbound approaches and construct second (dual) left turn lanes. This traffic signal is included in the TSMI Fee and can be credited/reimbursed.

SR 99 southbound ramps/Ashlan Avenue: Widen the southbound approach and construct a second (dual) left turn lane. This improvement would need to be reviewed with Caltrans District 6 and Phases 3 and 4 would contribute its fair share (Combined Formula as provided in the Interim Agreement between the City and Caltrans) toward this improvement.

SR 99 northbound ramps/Ashlan Avenue: Widen the eastbound approach and construct a second (dual) left turn lane. This improvement would need to be reviewed with Caltrans

District 6 and Phases 3 and 4 would contribute its fair share (Combined Formula as provided in the Interim Agreement between the City and Caltrans) toward this improvement.

Significant Intersection Queuing Impacts

Based on the 2017 plus Phases 1 through 4 traffic analysis discussed above, the following study intersections are forecast to have significant impacts to lane storage queues when compared to the 2017 baseline condition. The following are improvements required to mitigate these impacts:

TRAF-22 Prior to obtaining a Certificate of Occupancy, all Phases 3 and 4 shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study intersection queues in the 2017 plus Phases 1 through 4 condition:

Golden State Boulevard/Herndon Avenue: Extend the eastbound right turn lane by 45 feet to 245 feet; and extend the westbound left turn lane by 115 feet to 445 feet. Since the left turn extension is beyond the City's standard 250 foot left turn lane, this mitigation would not be reimbursable/credited under the FMSI fee.

Polk Avenue/Herndon Avenue: The northbound dual left turn lane would need to be extended by 90 feet to 230 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the extension of the northbound dual left turn lane is reimbursable/credited towards the FMSI fee.

Milburn Avenue/Herndon Avenue: The southbound right turn lane would need to be extended by 95 feet to 195 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Brawley Avenue/Herndon Avenue: The northbound left turn lane would need to be extended by 150 feet to 255 feet; the northbound right turn lane would need to be extended by 190 feet to 265 feet; and westbound left turn lane would need to be extended by 225 feet to 535 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Marks Avenue/Herndon Avenue: The southbound right turn lane would need to be extended by 340 feet to 500 feet; the eastbound left turn lane would need to be extended by 185 feet to 330 feet; and the eastbound right turn lane would need to be extended by 115 feet to 165 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

West Avenue/Herndon Avenue: The northbound right turn lane would need to be extended by 215 feet to 280 feet; and the southbound left turn lane would need to be extended by 150 feet to 335 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Palm Avenue/Herndon Avenue: The northbound dual left turn lane would need to be extended by 75 feet to 220 feet; the southbound right lane would need to be extended by 365 feet to 595 feet; the eastbound dual left turn lane would need to be extended by 355 feet to 600 feet; and the westbound right turn lane would need to be extended by 135 feet to 280 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the northbound left turn lane extension would be reimbursable/credited towards the FMSI fee.

Blackstone Avenue/Herndon Avenue: The westbound right turn lane would need to be extended by 35 feet to 135 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Bryan Avenue/Palo Alto Avenue: The northbound left turn would need to be extended by 460 feet to 610 feet, or dual left turn lanes can be constructed; southbound left turn lane would need to be extended by 110 feet to 260 feet; the eastbound left turn lane would need to be extended by 95 feet to 245 feet; and the westbound dual left turn lane would need to be to be extended by 70 feet to 220 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Hayes Avenue/Veterans Boulevard: The eastbound left turn lane would need to be extended by 160 feet to 310 feet, or dual left turn lanes can be constructed. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Bryan Avenue/Sierra Avenue: The southbound left turn lane would need to be extended by 135 feet to 385 feet, or dual left turn lanes can be constructed. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Bryan Avenue/Veterans Boulevard: The northbound dual left turn lane would need to be extended by 350 feet to 600 feet; the southbound right turn lane would need to be extended by 800 feet to 950 feet; the eastbound dual left turn lane would need to be extended by 270 feet o 520 feet; and the eastbound right turn lane would need to be extended by 685 feet to 835 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Golden State Boulevard/Veterans Boulevard: This intersection will be located above-grade due to the Veterans Boulevard overpass with SR 99 and the UPRR tracks therefore; there will be limited geometric constraints. The northbound left turn lane would need to be extended by 395 feet to 705 feet; the southbound left turn lane would need to be extended by 570 feet to 870 feet; and the eastbound left turn lane would need to be extended by 630 feet to 1,010 feet. Upon completion of the design of this grade-separated interchange, the possibility of adding dual left turn lanes all-around should be investigated. The FMSI fee assumes that a

left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Bullard Avenue/Carnegie Avenue: The northbound left turn lane would need to be extended by 490 feet to 715 feet, or construct a dual left turn lane; and the eastbound dual left turn lane would need to be extended by 80 feet to 330 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Golden State Boulevard/Carnegie Avenue: The northbound right turn lane would need to be extended by 210 feet to 310 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Palm Avenue/Bullard Avenue: The northbound right turn lane would need to be extended by 240 feet to 295 feet; the southbound right turn lane would need to be extended 105 feet to 175 feet; the eastbound dual left turn lane would need to be extended by 145 feet to 295 feet; and the westbound left turn lane would need to be extended by 40 feet to 180 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the extension of the westbound left turn lane would be reimbursable/credited towards the FMSI fee.

Bryan Avenue (west)/Veterans Boulevard: The southbound dual left turn lane would need to be extended by 340 feet to 590 feet; and the westbound right turn lane would need to be extended by 320 feet to 470 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Golden State Boulevard/Shaw Avenue: The northbound right turn lane would need to be extended by 895 feet to 1,035 feet; the southbound dual left turn lane would need to be extended by 255 feet to 420 feet; the westbound dual left turn lane would need to be extended by 45 feet to 235 feet; and the westbound right turn lane would need to be extended by 635 feet to 825 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the extension of the westbound dual left turn lane would be reimbursable/credited towards the FMSI fee.

Brawley Avenue/Shaw Avenue: With the geometric improvements constructed at the adjacent intersections of Golden State Boulevard/Shaw Avenue and Marks Avenue/Shaw Avenue, queuing impacts at Brawley Avenue/Shaw Avenue would be less than significant (i.e., less than one car length).

Marks Avenue/Shaw Avenue: The northbound dual left turn lane would need to be extended by 65 feet to 255 feet; the northbound right turn lane would need to be extended by

350 feet to 455 feet; the southbound right turn lane would need to be extended by 665 feet to 935 feet; and the dual eastbound left turn lane would need to be extended by 65 feet to 300 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

West Avenue/Shaw Avenue: The northbound right turn lane would need to be extended by 200 feet to 275 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

SR 99 southbound ramps/Ashlan Avenue: The northbound right turn lane would need to be extended by 250 feet to 350 feet; and the eastbound right turn lane would need to be extended by 30 feet to 130 feet. All other impacted turn lanes would have less than significant queuing impacts due to the improved operations at adjacent intersections due to other mitigation measures.

SR 99 northbound ramps/Ashlan Avenue: The southbound right turn lane would need to be extended by 170 feet to 380 feet; and the westbound right turn lane would need to be extended by 180 feet to 265 feet. All other impacted turn lanes would have less than significant queuing impacts due to the improved operations at adjacent intersections due to other mitigation measures.

Figure 9-13 illustrates the mitigation measures needed for the significant traffic impacts created by the addition of Phases 3 and 4 traffic to the 2017 baseline condition. Table 9-32 shows the improved levels of service with the implementation of the mitigation measures.

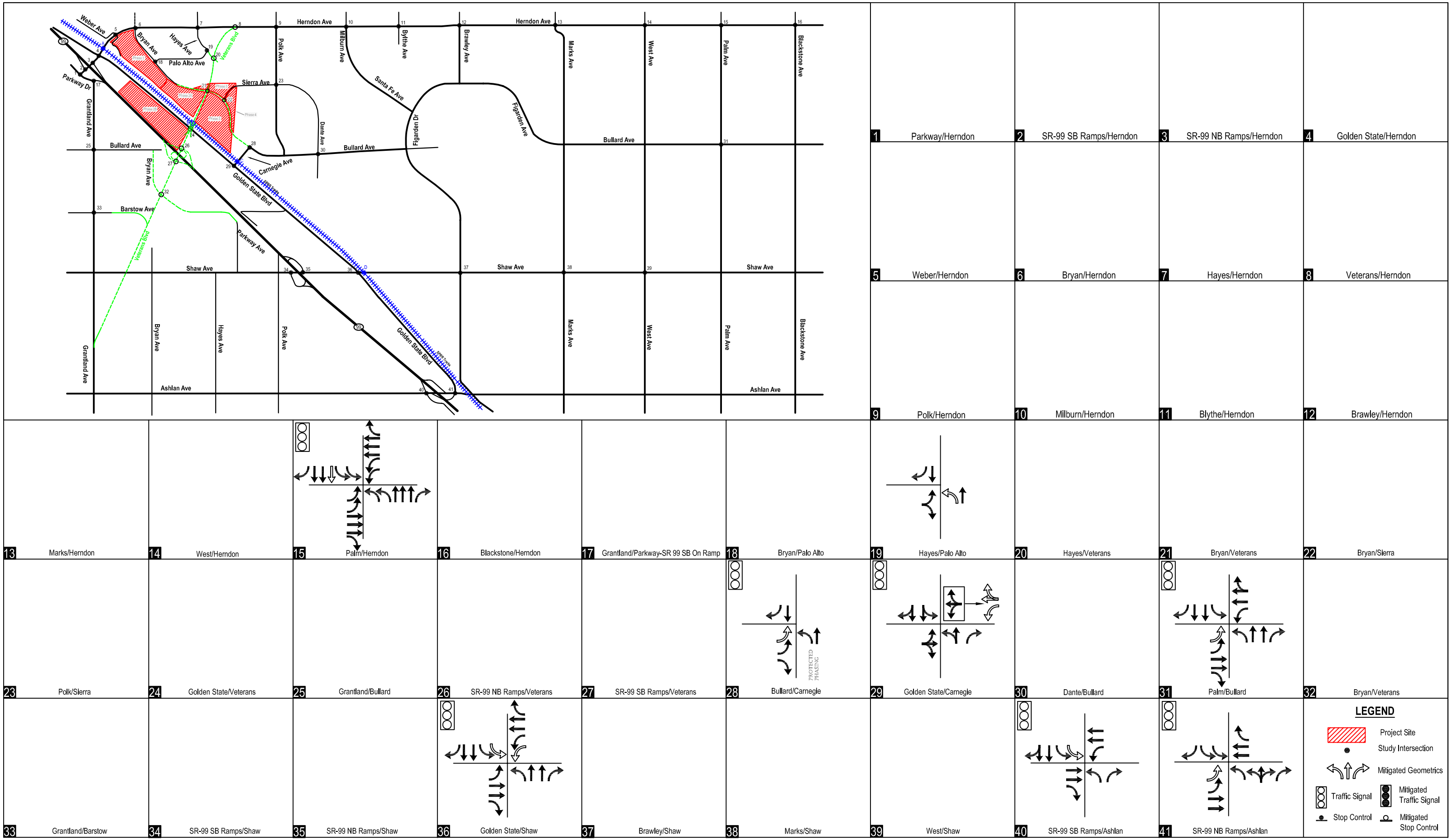
Significant Roadway Segment Impacts

Based on the 2017 plus Phases 1 through 4 traffic analysis discussed above, the following study roadway segments are forecast to have significant impacts with addition of Phases 3 and 4 traffic. The following are improvements required to mitigate these impacts:

TRAF-23 Prior to obtaining a Certificate of Occupancy, Phases 3 and 4 shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study roadway segments in the 2017 plus Phases 1 through 4 condition:

Herndon Avenue, Parkway Drive to SR 99 southbound off-ramp: Construct the westbound direction of Herndon Avenue to two lanes between Parkway Drive and the SR 99 undercrossing. As part of mitigation measure TRAF-7 (2010 plus Phase 1), the SR 99 southbound off-ramp at this location will be removed for improved operations at this interchange. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Herndon Avenue, SR 99 southbound off-ramp to SR 99 northbound off-ramp: Based on field reconnaissance of the Herndon Avenue undercrossing of SR 99, there are no feasible measures to widen the existing bridge structure to accommodate additional capacity (lanes). Therefore, the project would create a significant unavoidable impact at this location in the westbound direction during the p.m. peak hour.



1 Parkway/Herndon
2 SR-99 SB Ramps/Herndon
3 SR-99 NB Ramps/Herndon
4 Golden State/Herndon
5 Weber/Herndon
6 Bryan/Herndon
7 Hayes/Herndon
8 Veterans/Herndon
9 Polk/Herndon
10 Milburn/Herndon
11 Blythe/Herndon
12 Brawley/Herndon
13 Marks/Herndon
14 West/Herndon
15 Palm/Herndon
16 Blackstone/Herndon
17 Grantland/Parkway-SR 99 SB On Ramp
18 Bryan/Palo Alto
19 Hayes/Palo Alto
20 Hayes/Veterans
21 Bryan/Veterans
22 Bryan/Sierra
23 Polk/Sierra
24 Golden State/Veterans
25 Grantland/Bullard
26 SR-99 NB Ramps/Veterans
27 SR-99 SB Ramps/Veterans
28 Bullard/Carnegie
29 Golden State/Carnegie
30 Dante/Bullard
31 Palm/Bullard
32 Bryan/Veterans
33 Grantland/Barstow
34 SR-99 SB Ramps/Shaw
35 SR-99 NB Ramps/Shaw
36 Golden State/Shaw
37 Brawley/Shaw
38 Marks/Shaw
39 West/Shaw
40 SR-99 SB Ramps/Ashlan
41 SR-99 NB Ramps/Ashlan

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Figure 9-13
Year 2017 + Phases 1, 2, 3, and 4 Mitigation Measures

Table 9-32 - Year 2017 plus Phase 1,2,3, & 4 Intersection Levels of Service with Mitigation Measures

			2017 Baseline + Project Phases 1-4				With Mitigation			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	Parkway/Herndon	signal	10.8	B	53.0	D				
2	99 SB Ramps/Herndon		--	--	--	--				
3	99 NB Ramps/Herndon	signal	12.3	B	>80	F	*no feasible mitigaiton*			
4	Golden State/Herndon	signal	33.5	C	40.0	D				
5	Weber/Herndon	unsignalized	10.0	A	11.9	B				
6	Bryan/Herndon	signal	26.8	C	28.9	C				
7	Hayes/Herndon	signal	20.4	C	23.0	C				
8	Veterans/Herndon	signal	6.6	A	10.4	B				
9	Polk/Herndon	signal	19.2	B	47.4	D				
10	Milburn/Herndon	signal	29.2	C	30.5	C				
11	Blythe/Herndon	signal	13.1	B	12.3	B				
12	Brawley/Herndon	signal	46.7	D	49.2	D				
13	Marks/Herndon	signal	30.5	C	42.2	D				
14	West/Herndon	signal	37.6	D	34.8	C				
15	Palm/Herndon	signal	77.4	E	>80	F	47.9	D	>80	F
16	Blackstone/Herndon	signal	29.3	C	31.7	C				
17	Grantland/Parkway	signal	14.5	B	19.7	B				
18	Bryan/Palo Alto	signal	21.8	C	47.7	D				
19	Hayes/Palo Alto	unsignalized	21.3	C	40.0	E	17.6	C	18.6	C
20	Veterans/Hayes	signal	11.0	B	15.6	B				
21	Veterans/Bryan	signal	25.6	C	>80	F	*no feasible mitigaiton*			
22	Bryan/Sierra	signal	18.3	B	31.6	C				
23	Polk/Sierra	signal	7.0	A	10.3	B				
24	Golden State/Veterans	signal	51.9	D	>80	F	*no feasible mitigaiton*			
25	Grantland/Bullard	unsignalized	14.3	B	17.1	B				
26	99 NB Ramps/Veterans	signal	22.0	C	>80	F	*no feasible mitigaiton*			
27	99 SB Ramps/Veterans	signal	3.5	A	>80	F	*no feasible mitigaiton*			
28	Carnegie/Bullard	signal	22.6	C	>80	F	26.3	C	73.7	E
29	Golden State/Carnegie	signal	>80	F	>80	F	19.7	B	>80	F
30	Dante/Bullard	unsignalized	7.4	A	8.0	A				
31	Palm/Bullard	signal	26.3	C	>80	F	23.9	C	62.5	E
32	Veterans/Bryan	signal	29.9	C	33.7	C				
33	Grantland/Barstow	signal	7.3	A	8.8	A				
34	99 SB Ramps/Shaw	signal	10.9	B	9.6	A				
35	99 NB Ramps/Shaw	signal	11.0	B	14.5	B				
36	Golden State/Shaw	signal	69.3	E	>80	F	33.1	C	>80	F
37	Brawley/Shaw	signal	22.8	C	48.5	D				
38	Marks/Shaw	signal	29.4	C	64.7	E				
39	West/Shaw	signal	26.7	C	35.8	D				
40	99 SB Ramps/Ashlan	signal	32.4	C	>80	F	31.9	C	55.9	E
41	99 NB Ramps/Ashlan	signal	35.3	D	77.2	E	29.8	C	59.0	E

Notes:

XXX Denotes delay that exceeds thresholds

XXX Denotes significant project impact

Herndon Avenue, SR 99 northbound ramps/Golden State Boulevard: Construct Herndon Avenue to four lanes (undivided) between the SR 99 northbound ramps and Golden State Boulevard. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Herndon Avenue, Brawley Avenue to Marks Avenue: With the construction of Herndon Avenue to six lanes with a raised landscaped median island in this segment, this roadway segment is still forecast to operate with unsatisfactory LOS in both directions during the a.m. and/or p.m. peak hours. Therefore, the project would create a significant unavoidable impact at this location in the eastbound direction in the a.m. peak hour, however; *this segment of Herndon Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Parkway Drive, Herndon Avenue to Grantland Avenue: Construct Parkway Drive to two lanes in the southbound direction between Herndon Avenue and Grantland Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Veterans Boulevard, Golden State Boulevard to Bryan Avenue: This roadway segment is planned to be built to its ultimate General Plan configuration, but would continue to operate at LOS F in both directions in the a.m. and/or p.m. peak hours. Therefore, the project would create a significant unavoidable impact at this location in both directions in both peak hours. However, *this segment of Veterans Boulevard has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Veterans Boulevard, SR 99 northbound ramps to Golden State Boulevard: This roadway segment is planned to be built to its ultimate General Plan configuration, but would continue to operate at LOS F in both directions in the a.m. and/or p.m. peak hours. Therefore, the project would create a significant unavoidable impact at this location in both directions in both peak hours. However, *this segment of Veterans Boulevard has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Veterans Boulevard, SR 99 southbound ramps to SR 99 northbound ramps: This roadway segment is planned to be built to its ultimate General Plan configuration, but would continue to operate at LOS F in both directions in the a.m. and/or p.m. peak hours. Therefore, the project would create a significant unavoidable impact at this location in both directions in both peak hours. However, *this segment of Veterans Boulevard has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Veterans Boulevard, Bryan Avenue (west) to SR 99 southbound ramps: This roadway segment is planned to be built to its ultimate General Plan configuration, but would continue to operate at LOS F in both directions in the a.m. and/or p.m. peak hours. Therefore, the project would create a significant unavoidable impact at this location in both directions in both peak hours. However, *this segment of Veterans Boulevard has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Sierra Avenue, Bryan Avenue to Polk Avenue: With the construction of Sierra Avenue to two lanes in the eastbound and westbound directions between Bryan Avenue and Polk Avenue, the westbound direction is still forecast to operate at LOS F during the p.m. peak

hour. Therefore, addition of Phases 3 and 4 traffic would create a significant unavoidable impact at this intersection.

Polk Avenue, Herndon Avenue to Sierra Avenue: Construct Polk Avenue to two lanes in each direction between Herndon Avenue and Sierra Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Golden State Boulevard, Herndon Avenue to Veterans Boulevard: Construct Golden State Boulevard to two lanes in each direction between Herndon Avenue and Veterans Boulevard. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Golden State Boulevard, Veterans Boulevard to Carnegie Avenue: Construct Golden State Boulevard to two lanes in the northbound direction between Veterans Boulevard and Carnegie Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Golden State Boulevard, Shaw Avenue to Ashlan Avenue: With the construction of Golden State Boulevard to two lanes in the southbound direction, this segment is forecast to operate at LOS E during the p.m. peak hour. Therefore, addition of Phases 3 and 4 traffic would create a significant unavoidable impact at this intersection.

Shaw Avenue, west of SR 99 southbound ramps: Construct Shaw Avenue to two lanes in the eastbound direction west of the SR 99 southbound ramps. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Shaw Avenue, SR 99 southbound ramps to SR 99 northbound ramps: Based on field reconnaissance of the Shaw Avenue overcrossing of SR 99, there are no feasible measures to widen the existing bridge structure to accommodate additional capacity (lanes). Therefore, the project would create a significant unavoidable impact at this location.

Shaw Avenue, Golden State Boulevard to Brawley Avenue: This roadway segment is already built to its ultimate General Plan configuration. Therefore, the project would create a significant unavoidable impact to the westbound direction in the p.m. peak hour at this location. However, *this segment of Shaw Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Shaw Avenue, Brawley Avenue to Marks Avenue: This roadway segment is already built to its ultimate General Plan configuration. Therefore, the project would create a significant unavoidable impact to the westbound direction in the p.m. peak hour at this location. However, *this segment of Shaw Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Palm Avenue, Herndon Avenue to Bullard Avenue: This roadway segment is already built to its ultimate General Plan configuration. Therefore, the project would create a significant unavoidable impact to the southbound direction in the a.m. peak hour at this location. However, *this segment of Palm Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Carnegie Avenue, Golden State Boulevard to Bullard Avenue: Construct Carnegie Avenue to two lanes in each direction between Golden State Boulevard and Bullard Avenue.

Ashlan Avenue, SR 99 southbound ramps to SR 99 northbound ramps: Based on field reconnaissance of the Ashlan Avenue overcrossing of SR 99, there are no feasible measures to widen the existing bridge structure to accommodate additional capacity (lanes). Therefore, the project would create a significant unavoidable impact at this location.

Significant Caltrans Facility Impacts

Based on the 2017 plus Phases 1 through 4 traffic analysis discussed above, the following study area Caltrans facilities are forecast to have significant impacts with addition of Phases 3 and 4 traffic. The following are improvements required to mitigate these impacts:

TRAF-24 Prior to obtaining a Certificate of Occupancy, Phases 3 and 4 shall pay their fair-share contribution towards improvements to Caltrans facilities noted below. The fair-share contribution shall be calculated per the February 2006 *Mutual Release and Settlement Agreement* between the City of Fresno and Caltrans District 6 (otherwise known as the "Interim Agreement"). This Interim Agreement provides guidance on the method for calculating a fair share to mitigate for impacts to State highways. Since Phase 1 will require a General Plan Amendment (GPA), and the GPA will increase trips over the existing use, the "Combined Formula" was used to calculate fair share. The Combined Formula is provided below:

P = (P1/F1) + (P2 – P1)/F2, where:

P = fair share percentage
P1 = the higher of the a.m. or p.m. peak hour project trips without GPA
P2 = the higher of the a.m. or p.m. peak hour project trips with GPA
F1 = total 2025 corresponding future peak hour traffic without project
F2 = total 2025 corresponding future peak hour traffic with project

Table 9-33 shows the calculated Combined Share costs for impacted Caltrans facilities. The following are improvements for the impacted State facilities in the 2017 plus Phases 1 through 4 condition. As noted, some of these facilities are also part of the City's TSMI and FMSI fee programs. For all other facilities, payment of the fair-share cost based on the Combined Share formula would mitigate project impacts.

Mitigation measures to the following Caltrans facilities have been discussed above, either in the measures for intersections, queuing, and/or roadway segments. For facilities not previously discussed, the needed mitigation measures are provided below.

- SR 99 northbound off-ramp/Herndon Avenue (impacts to intersection LOS discussed above)
- SR 99 southbound ramps/Ashlan Avenue (impacts to intersection LOS and queuing discussed above)
- SR 99 northbound ramps/Ashlan Avenue (impacts to intersection LOS and queuing discussed above)
- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (impacts to roadway segments discussed above)
- Shaw Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (impacts to roadway segments discussed above)

Table 9-33 – Phases 3 and 4 Combined Share Percentages for Impacted Caltrans Facilities

Location	GP Zone P1	Proposed Phases 3-4 P2	2025 GP (No proj) F1	2025 + GPA (Phases 3-4) F2	Combined-Share P
RAMP INTERSECTIONS					
- SR 99 NB off-ramp/Herndon Avenue	32	54	1,432	3,489	2.87%
- Parkway Drive/Herndon Avenue	10	51	807	2,346	2.99%
- Parkway Dr/Grantland-SR 99 SB on-ramp	10	43	785	2,239	2.75%
- SR 99 SB ramps/Shaw Avenue	2	2	5,276	5,380	0.04%
- SR 99 NB ramps/Shaw Avenue	1	2	5,815	5,906	0.03%
- SR 99 SB ramps/Ashlan Avenue	5	43	3,466	3,628	1.19%
- SR 99 NB ramps/Ashlan Avenue	7	0	4,686	4,686	0.00%
- SR 99 SB off-ramp to Parkway Drive	7	1	1,170	1,179	0.09%
OVER-/UNDERCROSSINGS					
- Shaw Ave overcrossing EB direction	1	2	1,710	1,752	0.12%
- Ashlan Ave overcrossing EB direction	7	31	1,672	1,751	1.79%
AUXILIARY LANES					
- SR 99 NB off-ramp to Herndon Ave (aux lane)	19	1	672	1,180	1.30%
- SR 99 SB on-ramp from Parkway Dr (aux lane)	5	20	586	1,164	2.14%
MAINLINE LANES					
- SR 99 NB n/o Herndon Avenue	2	290	5,270	5,901	4.92%
- SR 99 SB n/o Herndon Avenue	6	35	4,913	5,033	0.70%
- SR 99 NB (future) Veterans Blvd to Herndon Ave	19	837	4,974	6,657	12.67%
- SR 99 SB Herndon Ave to (future) Veterans Blvd	5	971	4,666	7,027	13.85%
- SR 99 NB Shaw Ave to (future) Veterans Blvd	72	515	6,077	7,438	7.14%
- SR 99 SB (future) Veterans Blvd to Shaw Ave	28	1,736	5,912	9,038	19.37%
- SR 99 NB Ashlan Ave to Shaw Ave	72	440	6,301	7,327	6.17%
- SR 99 SB Shaw Ave to Ashlan Ave	26	901	6,031	8,039	11.31%
- SR 99 NB s/o Ashlan Avenue	64	301	7,014	7,614	4.03%
- SR 99 SB s/o Ashlan Avenue	22	689	7,057	8,714	7.97%

Note:

- "Combined" share percentage is determined by the following formula: P=(P1/F1)+(P2-P1)/F2.

- Ashlan Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (impacts to roadway segments discussed above)
- SR 99 mainline northbound, Dakota Avenue to Ashlan Avenue: Phases 3 and 4 shall contribute their Combined Share percentage of cost to widen this segment of SR 99 to four lanes to mitigate cumulative impacts to mainline LOS.
- SR 99 mainline northbound, Ashlan Avenue to Shaw Avenue: Phases 3 and 4 shall contribute their Combined Share percentage of cost to widen this segment of SR 99 to four lanes to mitigate cumulative impacts to mainline LOS.
- SR 99 mainline southbound, Herndon Avenue to Veterans Boulevard: Phase 3 and 4 shall contribute their Combined Share percentage of cost to widen this segment of SR 99 to three lanes to mitigate cumulative impacts to mainline LOS.

- SR 99 mainline southbound, Veterans Boulevard to Shaw Avenue: Phase 3 and 4 shall contribute their Combined Share percentage of cost to widen this segment of SR 99 to three lanes to mitigate cumulative impacts to mainline LOS.
- SR 99 mainline northbound weaving section, Shaw Avenue to Veterans Boulevard: Phases 3 and 4 shall contribute their Combined Share percentage of cost to widen this weaving section to four lanes to mitigate cumulative impacts to this weaving section.
- SR 99 mainline southbound weaving section, Herndon Avenue to Veterans Boulevard: Phases 3 and 4 shall contribute their Combined Share percentage of cost to widen this weaving section to four lanes to mitigate significant cumulative impacts to this weaving section.

Significant On-Site Circulation, Access, and Parking Impacts

TRAF-25 Prior to issuance of a Certificate of Occupancy, Phases 3 and 4 shall submit a site plan for review and approval by the City Traffic Engineering Division of Public Works. In addition to the site plan, each Phase will need a focused traffic analysis that addresses pedestrian/cyclist circulation through, to and from, each Phase of the Master Plan. The traffic analysis will also evaluate exact driveway locations, storage/queue under a 20 year horizon scenario, site distance (due to horizontal and vertical curves of the major streets in the area).

Year 2019 plus Phases 1, 2, 3, 4, and 5

Traffic Volumes and Geometrics

Figure 9-14 illustrates the study area intersection geometrics and traffic control for the 2019 plus Phases 1, 2, 3, 4, and 5 condition. Baseline (background) improvements noted in the 2017 baseline condition were carried-over for the 2019 baseline condition and reflected in the 2019 plus Phases 1, 2, 3, 4, and 5 condition. As previously indicated, for the 2017 baseline condition, the City is planning to extend Veterans Boulevard from Bryan Avenue to west of (and beyond) SR 99. As part of the planned extension, the City would also construct a grade-separated overcrossing of Veterans Boulevard over the UPRR tracks and Golden State Boulevard, with ramp access to Veterans Boulevard. In that same period, the City and Caltrans will also have constructed a new partial cloverleaf interchange at SR 99/Veterans Boulevard. In addition, mitigation measures required from Phases 1, 2, 3, and 4 (notably SR 99/Herndon Avenue ramp improvements, Veterans Boulevard extension from Herndon Avenue to west of SR 99 with interchange at SR 99) were included in this impact analysis.

Traffic in this scenario was developed by adding the land uses of Phases 1, 2, 3, 4, and 5 directly into Fresno COG's 2020 travel model and adjusting to year 2019. Peak hour turning volumes were derived based on specific post-processing methodology outlined in Fresno COG's Recommended Procedures publication. Figure 9-14 illustrates the resulting Year 2019 plus Phases 1 through 5 peak hour traffic volumes.

Intersection Levels of Service

Table 9-34 presents the results of the Year 2019 plus Phases 1, 2, 3, 4, and 5 intersection LOS and delays calculated in Synchro. In addition, the table also compares the Year 2019 plus Phases 1, 2, 3, 4, and 5 LOS with the Year 2019 Baseline LOS and also indicates the project contribution at those intersections that are forecast to operate, or continue to operate, with unsatisfactory LOS (i.e., LOS E or F).

According to the table and based on the City's significance criteria, the following study intersections would be significantly impacted by the addition of Phase 5 to 2019 baseline traffic. Therefore, the proposed project would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or more at LOS E or F) at the following study intersections:

- SR 99 northbound ramps/Herndon Avenue (LOS D to F in the p.m.)
- Polk Avenue/Herndon Avenue (LOS C to E in p.m.)
- Bryan Avenue/Veterans Boulevard (LOS B to E in a.m.; LOS C to F in the p.m.)
- Golden State Boulevard/Veterans Boulevard (LOS E in the a.m.; additional delay ≥5 seconds to LOS F in p.m.)
- SR 99 northbound ramps/Veterans Boulevard (LOS B to F in p.m.)
- SR 99 northbound ramps/Ashlan Avenue (LOS D to E in p.m.)

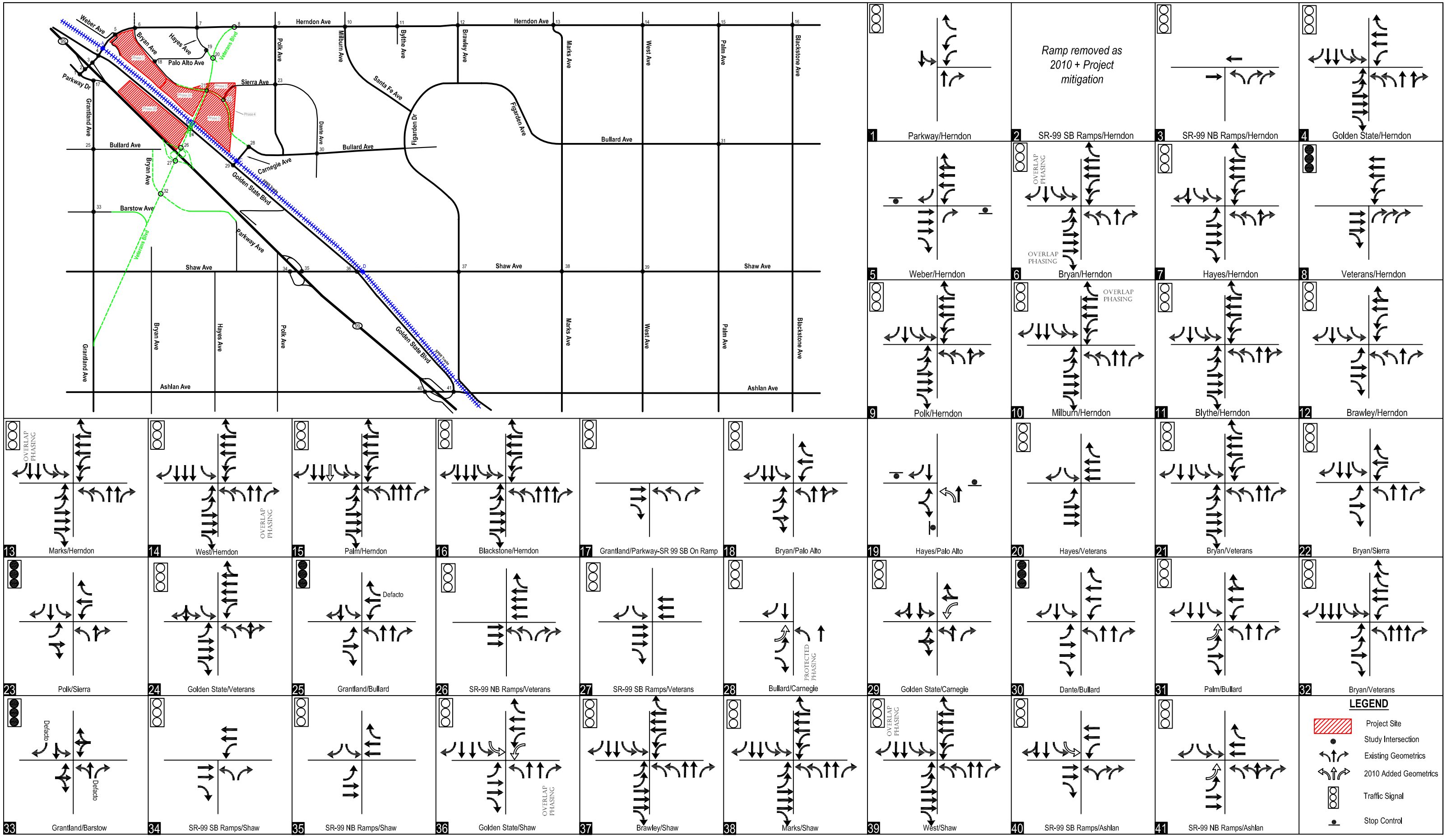

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Figure 9-14
Year 2019 + Phase 1, 2, 3, 4, and 5 Intersection Geometrics and Traffic Control

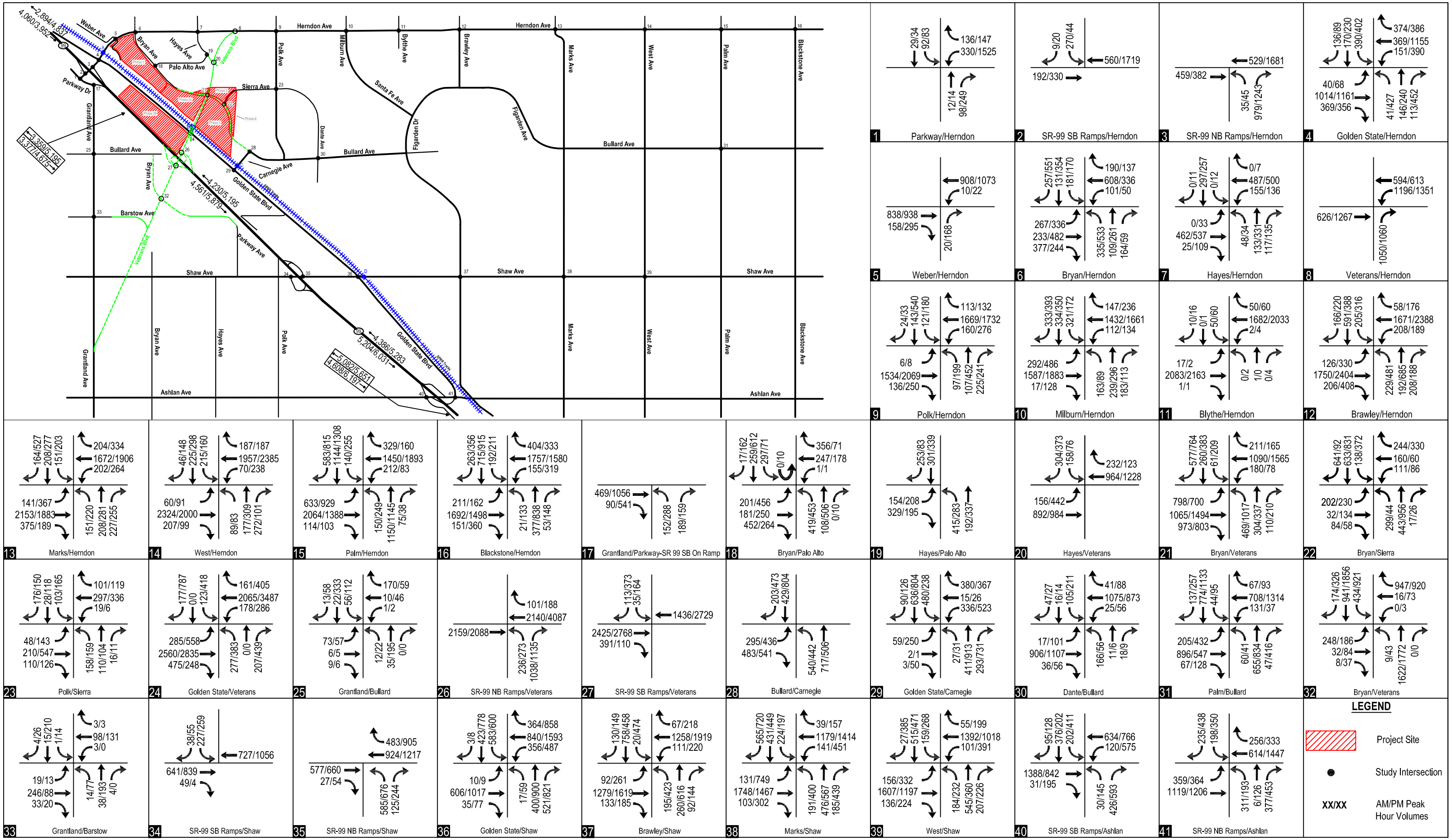

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Figure 9-15
Year 2019 + Phases 1, 2, 3, 4, and 5 Weekday AM and PM Peak Hour Traffic Volumes

Table 9-34- Year 2019 Baseline plus Phases 1,2,3,4, & 5 Weekday AM and PM Peak Hour LOS Summary

		2019 Baseline				2019 + Project Phase 1-5			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	signal	10.4	B	19.5	C	6.3	A	9.2	A
2 99 SB Ramps/Herndon		18.3	C	36.9	E	--	--	--	--
3 99 NB Ramps/Herndon	signal	23.0	C	29.5	D	9.0	A	>80	F
4 Golden State/Herndon	signal	17.4	B	19.2	B	30.1	C	41.5	D
5 Weber/Herndon	unsignalized	10.4	B	10.0	B	10.6	B	12.5	B
6 Bryan/Herndon	signal	32.2	C	29.7	C	26.9	C	30.8	C
7 Hayes/Herndon	signal	20.4	C	19.9	B	20.9	C	21.0	C
8 Veterans/Herndon	signal	6.4	A	6.5	A	8.0	A	12.4	B
9 Polk/Herndon	signal	19.3	B	22.5	C	20.0	B	79.7	E
10 Milburn/Herndon	signal	28.0	C	32.6	C	29.9	C	37.8	D
11 Blythe/Herndon	signal	12.9	B	13.4	B	13.5	B	20.5	C
12 Brawley/Herndon	signal	54.4	D	55.0	D	44.1	D	48.4	D
13 Marks/Herndon	signal	29.3	C	51.8	D	35.3	D	45.9	D
14 West/Herndon	signal	40.8	D	40.1	D	41.9	D	28.8	C
15 Palm/Herndon	signal	62.3	E	>80	F	48.9	D	>80	F
16 Blackstone/Herndon	signal	31.2	C	34.9	C	28.5	C	30.3	C
17 Grantland/Parkway	signal	14.1	B	13.3	B	7.2	A	23.2	C
18 Bryan/Palo Alto	signal	12.4	B	10.1	B	24.5	C	52.7	D
19 Hayes/Palo Alto	unsignalized	21.6	C	19.9	C	29.3	D	17.4	C
20 Veterans/Hayes	signal	9.6	A	10.4	B	12.3	B	17.4	B
21 Veterans/Bryan	signal	15.3	B	29.2	C	67.4	E	>80	F
22 Bryan/Sierra	unsignalized	9.4	A	11.7	B	35.4	D	38.4	D
23 Polk/Sierra	signal	13.4	B	19.7	C	7.4	A	9.8	A
24 Golden State/Veterans	signal	20.7	C	>50	F	56.5	E	>80	F
25 Grantland/Bullard	signal	10.5	B	11.9	B	8.4	A	33.4	D
26 99 NB Ramps/Veterans	signal	9.2	A	17.1	B	26.4	C	>80	F
27 99 SB Ramps/Veterans	signal	4.5	A	8.7	A	5.1	A	22.0	C
28 Carnegie/Bullard	signal	>50	F	>50	F	28.5	C	50.5	D
29 Golden State/Carnegie	signal	>50	F	>50	F	26.1	C	>80	F
30 Dante/Bullard	signal	>50	F	>50	F	7.7	A	8.0	A
31 Palm/Bullard	signal	57.7	E	>80	F	28.7	C	73.4	E
32 Veterans/Bryan	signal	26.1	C	31.3	C	68.1	E	42.1	D
33 Grantland/Barstow	signal	12.9	B	11.9	B	6.5	A	7.8	A
34 99 SB Ramps/Shaw	signal	11.1	B	11.0	B	10.8	B	10.0	A
35 99 NB Ramps/Shaw	signal	11.6	B	14.2	B	14.0	B	18.5	B
36 Golden State/Shaw	signal	>80	F	>80	F	28.5	C	>80	F
37 Brawley/Shaw	signal	24.0	C	40.6	D	25.0	C	47.9	D
38 Marks/Shaw	signal	34.0	C	64.1	E	29.8	C	54.5	D
39 West/Shaw	signal	28.3	C	28.9	C	24.9	C	29.9	C
40 99 SB Ramps/Ashlan	signal	43.5	D	61.5	E	40.7	D	61.2	E
41 99 NB Ramps/Ashlan	signal	38.3	D	53.1	D	32.0	C	76.2	E

Notes:

XXX Denotes delay that exceeds thresholds

XXX Denotes significant project impact

Queuing Analysis

Table 9-35 presents the results of the 2019 plus Phases 1, 2, 3, 4, and 5 weekday a.m. and p.m. peak hour queuing analyses based on the Synchro LOS analysis and the calculated 95th percentile queue lengths for each left- and/or right turn storage lane for each study area intersection.

Based on the queuing analysis, the addition of Phases 1 through 5 traffic to the 2019 baseline condition would create new significant queues and/or exacerbate significant baseline queues by more than one vehicle (or 25 feet), and that would exceed a storage lane's capacity during the weekday peak hours:

- Golden State Boulevard/Herndon Avenue (WBL in p.m.)
- Bryan Avenue/Herndon Avenue (SBR in p.m.)
- Milburn Avenue/Herndon Avenue (SBR in both; WBR in p.m.)
- Brawley Avenue/Herndon Avenue (NBL and EBR in p.m.; NBR in a.m.; WBL in both)
- Marks Avenue/Herndon Avenue (SBR and WBR in p.m.; EBL in both; EBR in a.m.)
- West Avenue/Herndon Avenue (NBR and SBL in a.m.)
- Palm Avenue/Herndon Avenue (NBL and EBL in p.m.; SBR in both; WBL in a.m.)
- Blackstone Avenue/Herndon Avenue (WBR in a.m.; SBR in p.m.)
- Bryan Avenue/Palo Alto Avenue (NBL in both; SBL in a.m.; EBL and WBL in p.m.)
- Hayes Avenue/Veterans Boulevard (EBL in p.m.)
- Bryan Avenue/Veterans Boulevard (NBL, SBR, EBL, and EBR in both peak hours)
- Bryan Avenue/Sierra Avenue (NBL and SBR in a.m.; SBL in p.m.; EBL in both)
- Golden State Boulevard/Veterans Boulevard (NBL and EBL in both; SBL and WBL in p.m.)
- Bullard Avenue/Carnegie Avenue (NBL in both)
- Golden State Boulevard/Carnegie Avenue (NBR in p.m.)
- Palm Avenue/Bullard Avenue (NBR, SBL, SBR, and EBL in p.m.; WBL in a.m.)
- Bryan Avenue (West)/Veterans Boulevard (SBL and WBR in both)
- Golden State Boulevard/Shaw Avenue (NBR in both; SBL, WBL, and WBR in p.m.)
- Brawley Avenue/Shaw Avenue (SBL in p.m.)
- Marks Avenue/Shaw Avenue (NBL, NBR, and EBL in p.m.; SBR in both)
- SR 99 southbound ramps/Ashlan Avenue (NBR, EBR, and WBL in p.m.)
- SR 99 northbound ramps/Ashlan Avenue (SBL, SBR, and WBR in p.m.)

Table 9-35 - 2019 Baseline plus Project Phases 1,2,3,4, & 5 Intersection Queuing Analysis Summary

Signalized Intersection		Storage & 95th Percentile Queue Lengths (ft)							
		NBL	NBR	SBL	SBR	EBL	EBR	WBL	WBR
1 Parkway/Herndon	Storage Length[1]	--	150	--	--	--	--	340	340
	AM Queue[1]	--	14	--	--	--	--	31	15
	PM Queue[1]	--	49	--	--	--	--	270	16
3 SR-99 NB Ramps/Herndon	Storage Length[1]	250	500	--	--	--	--	--	--
	AM Queue[1]	20	33	--	--	--	--	--	--
	PM Queue[1]	69	360	--	--	--	--	--	--
4 Golden State/Herndon	Storage Length[1]	310	--	330	200	330	200	330	200
	AM Queue[1]	27	--	262	29	23	138	185	59
	PM Queue[1]	228	--	234	88	43	197	428	50
6 Bryan/Herndon	Storage Length[1]	250	250	250	250	165	165	165	165
	AM Queue[1]	107	37	72	126	139	37	47	48
	PM Queue[1]	196	36	76	412	132	60	31	48
7 Hayes/Herndon	Storage Length[1]	140	--	100	--	350	250	250	150
	AM Queue[1]	23	--	23	--	24	16	142	0
	PM Queue[1]	19	--	9	--	37	32	63	9
8 Veterans/Herndon	Storage Length[1]	--	250	--	--	--	--	250	--
	AM Queue[1]	--	115	--	--	--	--	198	--
	PM Queue[1]	--	141	--	--	--	--	311	--
9 Polk/Herndon	Storage Length[1]	140	--	200	160	225	100	250	100
	AM Queue[1]	43	--	61	16	7	31	74	39
	PM Queue[1]	164	--	169	31	12	120	233	87
10 Milburn/Herndon	Storage Length[1]	225	100	230	100	230	135	230	140
	AM Queue[1]	80	81	152	187	144	13	67	26
	PM Queue[1]	63	45	100	227	237	44	54	195
11 Blythe/Herndon	Storage Length[1]	235	235	120	120	220	140	220	140
	AM Queue[1]	0	0	34	0	15	2	4	22
	PM Queue[1]	4	0	39	18	0	0	6	28
12 Brawley/Herndon	Storage Length[1]	105	75	80	80	290	150	310	100
	AM Queue[1]	122	258	67	40	113	112	431	17
	PM Queue[1]	246	91	29	50	178	200	427	43
13 Marks/Herndon	Storage Length[1]	245	125	160	160	145	50	280	190
	AM Queue[1]	105	124	105	121	174	183	69	136
	PM Queue[1]	107	147	144	528	455	93	151	244
14 West/Herndon	Storage Length[1]	175	65	185	350	260	200	275	140
	AM Queue[1]	53	241	294	27	20	77	44	62
	PM Queue[1]	50	45	113	90	65	30	130	56
15 Palm/Herndon	Storage Length[1]	145	280	250	230	245	190	210	145
	AM Queue[1]	105	33	108	431	216	29	144	221
	PM Queue[1]	218	29	211	1,032	647	33	63	118
16 Blackstone/Herndon	Storage Length[1]	250	110	240	90	250	160	250	100
	AM Queue[1]	16	27	113	96	113	38	86	146
	PM Queue[1]	71	44	113	190	79	152	151	119
17 Grantland/Parkway	Storage Length[1]	420	80	--	--	--	150	--	--
	AM Queue[1]	23	25	--	--	--	12	--	--
	PM Queue[1]	272	75	--	--	--	29	--	--
18 Bryan/Palo Alto	Storage Length[1]	150	150	150	150	150	150	150	150
	AM Queue[1]	43	5	265	22	50	0	11	60
	PM Queue[1]	612	13	121	94	244	7	218	42
20 Hayes/Veterans	Storage Length[1]	--	--	150	150	150	--	--	150
	AM Queue[1]	--	--	76	50	133	--	--	0
	PM Queue[1]	--	--	63	64	255	--	--	24
21 Bryan/Veterans	Storage Length[1]	150	150	150	150	150	150	150	150
	AM Queue[1]	750	47	97	381	1,179	1,200	349	153
	PM Queue[1]	1,192	1,068	196	138	259	971	1,659	118
22 Bryan/Sierra	Storage Length[1]	150	150	150	150	150	150	150	150
	AM Queue[1]	341	16	139	381	215	37	121	64
	PM Queue[1]	64	25	463	39	298	33	108	91
23 Polk/Sierra	Storage Length[1]	150	--	150	60	150	--	135	135
	AM Queue[1]	56	--	39	25	21	--	11	18
	PM Queue[1]	96	--	99	34	52	--	5	17
24 Golden State/Veterans	Storage Length[1]	310	--	300	--	380	250	320	--
	AM Queue[1]	373	--	172	--	419	169	318	--
	PM Queue[1]	644	--	741	--	929	102	527	--
25 Grantland/Bullard	Storage Length[1]	250	--	250	--	250	100	100	100
	AM Queue[1]	1	--	3	--	17	1	0	16
	PM Queue[1]	2	--	7	--	38	1	1	6
26 SR 99 NB Ramps/Veterans	Storage Length[1]	1,000	1,000	--	--	--	--	--	380
	AM Queue[1]	54	402	--	--	--	--	--	0
	PM Queue[1]	117	822	--	--	--	--	--	40
27 SR 99 SB Ramps/Veterans	Storage Length[1]	--	--	1,000	1,000	--	400	--	--
	AM Queue[1]	--	--	30	64	--	0	--	--
	PM Queue[1]	--	--	127	369	--	0	--	--
28 Bullard/Carnegie	Storage Length[1]	225	--	--	150	250	615	--	--
	AM Queue[1]	503	--	--	49	127	97	--	--
	PM Queue[1]	565	--	--	127	262	332	--	--
29 Golden State/Carnegie	Storage Length[1]	--	100	--	--	--	--	--	--
	AM Queue[1]	--	0	--	--	--	--	--	--
	PM Queue[1]	--	349	--	--	--	--	--	--
30 Dante/Bullard	Storage Length[1]	130	85	145	145	250	150	220	150
	AM Queue[1]	72	9	48	18	11	10	15	11
	PM Queue[1]	37	8	119	14	59	12	40	15
31 Palm/Bullard	Storage Length[1]	120	55	90	70	150	150	140	--
	AM Queue[1]	86	22	61	37	100	26	153	--
	PM Queue[1]	106	230	187	120	331	36	68	--
32 Bryan (West)/Veterans[2]	Storage Length[1]	150	150	150	150	150	150	150	150
	AM Queue[1]	21	0	213	15	97	10	0	484
	PM Queue[1]	75	0	579	30	112	29	13	464
33 Grantland/Barstow	Storage Length[1]	--	100	--	100	--	--	--	--
	AM Queue[1]	--	3	--	3	--	--	--	--
	PM Queue[1]	--	0	--	6	--	--	--	--
34 99 SB Ramps/Shaw[2]	Storage Length[1]	--	--	1,000	1,000	--	150	--	--
	AM Queue[1]	--	--	81	13	--	0	--	--
	PM Queue[1]	--	--	85	19	--	0	--	--
35 99 NB Ramps/Shaw[2]	Storage Length[1]	1,430	1,000	--	--	--	150	--	150
	AM Queue[1]	287	21	--	--	--	0	--	0
	PM Queue[1]	489	82	--	--	--	0	--	250
36 Golden State/Shaw	Storage Length[1]	140	140	165	165	180	180	190	190
	AM Queue[1]	30	414	164	0	16	3	141	59
	PM Queue[1]	96	1,084	207	0	27	62	264	828
37 Brawley/Shaw	Storage Length[1]	260	100	220	130	220	130	200	120
	AM Queue[1]	86	28	13	34	38	33	46	24
	PM Queue[1]	224	89	280	65	184	83	77	66
38 Marks/Shaw	Storage Length[1]	190	105	240	270	235	135	275	155
	AM Queue[1]	100	74	123	417	52	36	76	22
	PM Queue[1]	243	257	127	800	340	86	237	81
39 West/Shaw	Storage Length[1]	240	75	185	115	240	155	210	125
	AM Queue[1]	89	78	73	18	72	32	45	22
	PM Queue[1]	105	51	128	130	133	47	168	45
40 99 SB Ramps/Ashlan	Storage Length[1]	--	100	360	--	--	100	575	--
	AM Queue[1]	--	106	91	--	--	26	197	--
	PM Queue[1]	--	272	286	--	--	156	746	--
41 99 NB Ramps/Ashlan	Storage Length[1]	240	520	210	210	320	--	--	85
	AM Queue[1]	172	143	77	56	165	--	--	92
	PM Queue[1]	240	391	271	444	275	--	--	242

Notes:
[1] Storage length determined by field measurement and review of scaled aerial photography. AM & PM queue lengths determined in *Synchro* .
[2] Intersection is not existing, storage lengths were based upon 95th Percentile Queue.
XXX-Denotes 95th percentile queue that would exceed the lane's storage capacity.

Roadway Level of Service Analysis

Table 9-36 presents the results of the 2019 plus Phases 1, 2, 3, 4, and 5 roadway level of service analysis for the weekday a.m. and p.m. peak hours. In addition, the table provides a comparison of the 2019 Baseline and 2019 plus Phases 1, 2, 3, 4, and 5 roadway levels of service. The addition of the Phases 1, 2, 3, 4, and 5 trips to the following roadway segments would be considered a significant impact since the LOS changes from satisfactory conditions (LOS D or better) in 2019 baseline condition to unsatisfactory (i.e. LOS E or F) levels with the addition of traffic from Phases 1, 2, 3, 4, and 5:

- Herndon Avenue: Parkway Drive to SR 99 southbound ramps (LOS C to LOS F eastbound p.m.)
- Herndon Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS C to LOS F eastbound p.m.)
- Herndon Avenue: SR 99 northbound ramps to Golden State Boulevard (LOS D to F in eastbound a.m.; LOS D to F in westbound p.m.; LOS C to F in eastbound p.m.)
- Herndon Avenue: Blythe Avenue to Brawley Avenue (LOS D to F in eastbound p.m.)
- Herndon Avenue: Brawley Avenue to Marks Avenue (LOS D to F in eastbound p.m.)
- Parkway Drive: Herndon Avenue to Grantland Avenue (LOS D to LOS F westbound p.m.)
- Veterans Boulevard: Golden State Boulevard to Bryan Avenue (LOS C to F eastbound a.m.; LOS D to F eastbound p.m.)
- Veterans Boulevard: SR 99 northbound ramps to Golden State Boulevard (LOS D to F eastbound a.m.; LOS D to E westbound a.m.)
- Veterans Boulevard: SR 99 southbound ramps to SR 99 northbound ramps (LOS D to E eastbound a.m.; LOS D to F eastbound p.m.)
- Veterans Boulevard: Bryan Avenue (West) to SR 99 southbound ramps (LOS E to F eastbound a.m.)
- Sierra Avenue: Bryan Avenue to Polk Avenue (LOS D to F westbound a.m.; LOS C to F eastbound p.m.)
- Polk Avenue: Herndon Avenue to Sierra Avenue (LOS C to LOS F eastbound and westbound p.m.)
- Golden State Boulevard: Herndon Avenue to Veterans Boulevard (LOS C to LOS F northbound and southbound p.m.)
- Golden State Boulevard: Veterans Boulevard to Carnegie Avenue(LOS D to F northbound a.m.)
- Golden State Boulevard: Carnegie Avenue to Shaw Avenue (LOS C to E northbound a.m.)
- Golden State Boulevard: Shaw Avenue to Ashlan Avenue (LOS D to F southbound a.m.)
- Shaw Avenue: west of SR 99 southbound ramps (LOS D to F eastbound p.m.)
- Shaw Avenue: Golden State Boulevard to Brawley Avenue (LOS D to LOS F westbound p.m.)
- Shaw Avenue: Brawley Avenue to Marks Avenue (LOS D to E eastbound and westbound p.m.)
- Carnegie Avenue: Golden State Boulevard to Bullard Avenue (LOS D to LOS E eastbound a.m.; LOS E to F eastbound p.m.; LOS D to F westbound p.m.)
- Ashlan Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS C to D westbound a.m.; LOS E to F westbound p.m.)

Table 9-36 - Year 2019 Baseline plus Project Phase 1, 2, 3 & 4 Roadway Segment Level of Service Summary

		2019 plus Phases 1-4											
		AM Peak Hour						PM Peak Hour					
Roadway Segment	No. of Lanes	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]
Herndon Avenue													
Parkway to SR 99 SB Ramps	1	192	C		569	C		332	C		1,739	F	1.32
SR 99 SB Ramps to SR 99 NB Ramps	1	192	C		538	C		330	C		1,746	F	
SR 99 NB Ramps to Golden State	1	1,544	F	0.98	555	C		1,541	F	0.95	1,691	F	1.34
Golden State to Weber	3	1,517	C		919	C		2,020	C		1,931	C	
Weber to Bryan	3	877	C		1,200	C		1,065	C		1,420	C	
Bryan to Hayes	3	578	C		899	C		778	C		523	C	
Hayes to Veterans	3	629	C		642	C		1,267	C		613	C	
Veterans to Polk	3	1,675	C		1,790	C		2,327	D		1,964	C	
Polk to Milburn	3	1,896	C		1,942	C		2,497	D		2,143	D	
Milburn to Blythe	3	2,101	C		1,692	C		2,168	D		2,051	C	
Blythe to Brawley	3	2,133	D		2,066	C		3,142	F	0.25	3,089	F	0.01
Brawley to Marks	3	2,669	E	-0.01	1,987	C		2,908	F	0.16	2,753	F	-0.01
Marks to West	3	2,591	E	-0.01	2,092	C		2,341	D		2,616	E	-0.09
West to Palm	3	2,811	F	-0.04	2,214	D		2,420	D		2,957	F	-0.03
Palm to Blackstone	3	2,279	D		2,041	C		2,020	C		2,136	D	
e/o Blackstone	3	1,937	C		2,316	D		1,857	C		2,232	D	
Parkway Drive													
Herndon and Grantland	1	152	C		559	D		288	C		1,597	F	1.31
Bryan Avenue													
Herndon to Palo Alto	2	641	C		666	C		1,016	C		699	C	
Palo Alto to Veterans	2	585	C		866	C		1,218	D		1,260	D	
Veterans to Sierra	2	532	C		1,413	D		1,550	D		1,295	D	
Sierra and Carnegie	2	1,048	C		496	C		1,001	C		975	C	
Carnegie to Dante	2	1,257	D		912	C		948	C		1,345	D	
Palo Alto Avenue													
Bryan to Hayes	1	483	D		668	D		324	C		366	C	
Hayes Avenue													
Herndon to Palo Alto	1	346	C		554	D		478	C		422	C	
Palo Alto to Veterans	1	607	D		630	D		620	D		522	D	
Veterans Avenue													
Hayes to Herndon	3	1,050	C		1,196	C		1,060	C		1,351	C	
Bryan to Hayes	3	1,044	C		1,268	C		1,426	C		1,811	D	
Golden State to Bryan	3	2,890	F	0.46	2,404	D		3,692	F	0.53	4,178	F	0.37
SR 99 NB Ramps to GS	3	3,320	F	0.38	2,519	E	0.15	3,641	F	0.38	4,657	F	0.21
SR 99 SB Ramps to SR 99 NB Ramps	3	2,461	E		2,377	D		2,932	F		4,360	F	
Bryan(2) to SR 99 SB Ramps	3	2,816	F	0.10	1,549	C		2,878	F	0.11	3,102	F	0.08
Sierra Avenue													
Bryan to Polk	1	368	C		1,614	F	1.37	816	F	0.56	2,263	F	1.18
Polk Avenue													
Herndon to Sierra	1	429	C		392	C		892	F	0.63	922	F	0.56
Golden State Boulevard													
Herndon to Veterans	1	446	C		913	F	0.05	1,119	F	1.04	1,205	F	0.66
Veterans to Carnegie	1	850	F	0.41	1,206	F	0.03	1,530	F	0.37	1,168	F	0.35
Carnegie to Shaw	1	775	E	0.51	1,019	F	0.13	1,767	F	0.78	1,386	F	0.59
Shaw to Ashlan	1	938	F	0.14	822	F	0.36	1,780	F	0.32	1,713	F	1.05
Shaw Avenue													
w/o SR 99 SB Ramps	1	690	D		765	E	-0.12	843	F	0.31	1,111	F	-0.07
SR 99 SB Ramps to SR 99 NB Ramps	1-2	868	F		1,509	F		1,098	F		1,893	F	
SR 99 NB Ramps to Golden State	2	702	C		1,407	D		1,103	C		2,122	F	0.20
Golden State to Brawley	3	1,710	C		1,583	C		2,438	D		2,938	F	0.22
Brawley to Marks	3	1,982	D		1,935	D		2,518	E	0.09	2,534	E	0.06
Marks to West	3	2,157	D		1,603	C		2,103	D		2,022	D	
e/o West	3	1,973	D		1,548	C		1,691	C		1,608	C	
Grantland Avenue													
Parkway to Bullard	1	341	C		91	C		447	C		541	D	
Bullard to Barstow	1	60	C		201	C		217	C		398	C	
Palm Avenue													
Herndon to Bullard	2	1,375	D		1,587	D		1,432	D		1,571	D	
Dante Avenue													
Polk to Bullard	1	329	C		417	C		723	C		461	C	
Carnegie Avenue													
Golden State to Bullard	1	778	E	0.08	743	D		977	F	0.21	916	F	0.41
Ashlan Avenue													
SR 99 SB Ramps to SR 99 NB Ramps	2	2,016	F		1,160	D		1,846	F		2,078	F	

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* , for State Two-Way Arterials (Class II) & Non-State Roadways.

[2] V/C based on LOS F capacities in the Florida Tables

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact (v/c ≥ 0.15 per the City of Fresno General Plan Transportation Policy B-3)

Freeway Level of Service Analyses

Year 2019 plus Phases 1, 2, 3, 4, and 5 freeway segment traffic volume forecasts were post-processed by DKS using the Fresno COG 2020 travel model, adjusted to 2019.

Mainline Levels of Service

Table 9-37 provides the 2019 plus Phases 1, 2, 3, 4, and 5 freeway level of service summary.

Table 9-37 – Year 2019 plus Phases 1, 2, 3, 4, and 5 Freeway Segment Level of Service Summary

Freeway	From	To	Density	LOS
Northbound AM				
SR 99	Herndon Avenue	Avenue 7	17.5	B
	Veterans Boulevard	Herndon Avenue	21.1	C
	Shaw Avenue	Veterans Boulevard	26.8	D
	Ashlan Avenue	Shaw Avenue	27.4	D
	Dakota Avenue	Ashlan Avenue	34.4	D
Southbound AM				
SR 99	Avenue 7	Herndon Avenue	24.8	C
	Herndon Avenue	Veterans Boulevard	21.2	C
	Veterans Boulevard	Shaw Avenue	29.4	D
	Shaw Avenue	Ashlan Avenue	26.7	D
	Ashlan Avenue	Dakota Avenue	29.8	D
Northbound PM				
SR 99	Herndon Avenue	Avenue 7	30.9	D
	Veterans Boulevard	Herndon Avenue	35.7	E
	Shaw Avenue	Veterans Boulevard	41.1	E
	Ashlan Avenue	Shaw Avenue	36.3	E
	Dakota Avenue	Ashlan Avenue	42.5	E
Southbound PM				
SR 99	Avenue 7	Herndon Avenue	24.0	C
	Herndon Avenue	Veterans Boulevard	30.3	D
	Veterans Boulevard	Shaw Avenue	>45.0	F
	Shaw Avenue	Ashlan Avenue	39.5	E
	Ashlan Avenue	Dakota Avenue	>45.0	F

As this table indicates, the addition of Phases 1, 2, 3, 4, and 5 trips to SR 99 would create a significant impact to the following segments:

- SR 99 northbound between Shaw Avenue and Ashlan Avenue (LOS C to LOS D in the a.m. peak hour)
- SR 99 northbound between Ashlan Avenue and Dakota Avenue (LOS C to LOS D in the a.m. peak hour)

- SR 99 southbound between Shaw Avenue and Ashlan Avenue (LOS C to LOS D in the a.m. peak hour)
- SR 99 southbound between Herndon Avenue to Veterans Boulevard (LOS C to LOS D in the p.m. peak hour)

Weaving Section Levels of Service

The SR 99 mainline and ramp entry and exit volumes for the 2019 plus Phases 1 through 5 scenario were analyzed using Figure 504.7A from the HDM. Results from this analysis are shown in Table 9-38. In addition, the table also shows a comparison with the 2019 baseline scenario, as well as indicates the LOS for mitigation measures (if needed). Detailed calculations on the Leisch nomographs are provided in Appendix F.

Table 9-38 – Year 2019 plus Phases 1 through 5 Freeway Weaving Level of Service Summary

	2019 Baseline			2019 + Phases 1-5							
		LOS			LOS without Mitigation				LOS with Mitigation		
Segment	No. of Lanes	AM	PM	No. of Lanes	AM	Significant Impact	PM	Significant Impact	No. of Lanes	AM	PM
SR 99 northbound											
Shaw Ave to Veterans Blvd	3	C	E	3	D	yes	F	yes	5 (w/aux)	B	D
Veterans Blvd to Herndon Ave	3	B	E	3	C	no	E	no	--	--	--
SR 99 southbound											
Herndon Ave to Veterans Blvd	3	B	C	3	C	no	D	yes	4	B	C
Veterans Blvd to Shaw Ave	3	D	E	3	E	yes	E	no	4	D	C

As shown in the table, addition of Phases 1, 2, 3, 4, and 5 traffic to SR 99 would create new significant impacts at the following weaving sections:

- SR 99 northbound: Shaw Avenue to Veterans Boulevard (LOS C to D in the a.m. peak hour; LOS E to F in the p.m. peak hour)
- SR 99 southbound: Herndon Avenue to Veterans Boulevard (LOS C to D in the p.m. peak hour)
- SR 99 southbound: Veterans Boulevard to Shaw Avenue (LOS D to E in the a.m. peak hour)

At-Grade Railroad Crossing Analysis

Using the HCM "Back of Queue" queuing methodology to analyze the vehicular queuing, Table 9-39 presents the at-grade railroad crossing analysis summary for the 2019 plus Phases 1, 2, 3, 4, and 5 condition. The HCM calculation sheets are provided in Appendix H.

According to the table, addition of Phases 1, 2, 3, 4, and 5 traffic would not cause new queuing impacts (i.e., new impacts to adjacent major intersections from the baseline condition) at the study area crossings.

Table 9-39 – Year 2019 plus Phases 1, 2, 3, 4, and 5 At-Grade Railroad Crossing Analysis Summary

Crossing Location	Peak Hour [1]	Rail Crossing Time (seconds) [2]	Vehicular Queue (feet) [3]		Impact to Adjacent Major Intersection [4]		Significant Project Impact?	
			e/o tracks	w/o tracks	e/o tracks	w/o tracks	e/o tracks	w/o tracks
Herndon Avenue	*Grade Separated Underpass Improvement*							
Carnegie Avenue	AM	243	1,244	1,643	Yes	Yes	No	No
	PM	110	700	995	No	Yes	No	No
Shaw Avenue	AM	300	2,757	3,239	Yes	Yes	No	No
	PM	235	10,568	5,550	Yes	Yes	No	No

[1] - Based on observed train crossings in 2007 within the AM and PM peak commute hours.

[2] - Based on time that train crossing gate arms go down, to time gate arms go up.

[3] - Vehicle queue determined using *Highway Capacity Manual* (HCM) "Back of Queue Equation".

[4] – Impact based on whether vehicular queue would extend to an adjacent major intersection. For Herndon and Shaw Avenues the major intersection west of tracks will be the northbound ramp intersections with SR 99, rather than the closely spaced intersections with Golden State Blvd/Herndon Ave (125 ft) and Golden State Blvd/Shaw Ave (50 ft).

Mitigation Measures

TRAF-26 Phase 5 shall pay its Traffic Signal Mitigation Impact (TSMI) Fee of $45.98 per average daily trip (ADT) at the time of building permit. This fee is reviewed and updated yearly and the applicant pays the TSMI fee in place at the time of the building permit. Based on the Phase 5 ADT of 1,466 and the current TSMI fee Phase 5 shall pay $67,406.68.

This TSMI fee is credited against signal installation and Intelligent Transportation System (ITS) improvements (constructed at their ultimate location) anticipated to buildout of the 2025 General Plan Circulation Element and included in the *Nexus Study* for the TSMI fee. Project specific impacts that are not consistent with the 2025 General Plan, Public Works P69 standards, and/or already incorporated into the TSMI fees infrastructure costs are not reimbursable unless the City Engineer and City Traffic Engineer include the new traffic signal and/or ITS infrastructure in the next update, and the applicant agrees to pay the new calculated TSMI fee that includes the new infrastructure.

TRAF-27 Phase 5 shall pay their Fresno Major Street Impact (FMSI) Fee which will be determined at time of building permit. Effective July 1, 2008, the appropriate FMSI fees would contain the City Wide Street Impact Fee plus the New Growth Area Major Street Impact Fee.

Significant Impacts at Intersections

Based on the 2019 plus Phases 1 through 5 traffic analysis discussed above, the proposed project would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or more at LOS E or F) in the weekday a.m. and/or p.m. peak hours to the study intersections. The following are improvements required to mitigate these impacts:

TRAF-28 Prior to obtaining a Certificate of Occupancy, Phase 5 shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study intersections in the 2019 plus Phases 1 through 5 condition:

SR 99 northbound ramps/Herndon Avenue: Based on the forecast 2019 p.m. peak hour volumes, a high volume of northbound right turns from the off-ramp is forecast. This intersection would be built out to its ultimate configuration (left turn lane and dual right turn lanes on off-ramp approach) and a free right turn lane is recommended at this ramp due to the close intersection spacing between the off-ramp and Golden State Boulevard. Therefore, addition of Phase 5 traffic to this intersection would be a significant unavoidable impact.

Polk Avenue/Herndon Avenue: Widen the northbound approach and construct a dedicated right turn lane. In addition, widen the southbound approach, and construct an additional through lane. This traffic signal is included in the TSMI Fee and can be credited/reimbursed.

Bryan Avenue/Veterans Boulevard: This signalized intersection would be built out to its ultimate configuration and there is limited- to no available right-of-way for additional improvements. As such, no feasible mitigation can be recommended. Therefore, the project would create a significant unavoidable impact at this location; however, *this segment of Veterans Boulevard has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Golden State Boulevard/Veterans Boulevard: This signalized intersection would be built out to its ultimate configuration and there is limited- to no available right-of-way for additional improvements. As such, no feasible mitigation can be recommended. Therefore, the project would create a significant unavoidable impact at this location; however, *this segment of Veterans Boulevard has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

SR 99 northbound ramps/Veterans Avenue: This signalized intersection would be built out to its ultimate configuration and there is limited- to no available right-of-way for additional improvements. As such, no feasible mitigation can be recommended. Therefore, the project would create a significant unavoidable impact at this location.

SR 99 northbound ramps/Ashlan Avenue: Widen the northbound approach and construct a dedicated right turn lane; and restripe the shared left-through-right turn lane to a shared left-through lane. This improvement would need to be reviewed with Caltrans District 6 and Phase 5 would contribute its fair share (Combined Formula as provided in the Interim Agreement between the City and Caltrans) toward this improvement.

Significant Intersection Queuing Impacts

Based on the 2019 plus Phases 1 through 5 traffic analysis discussed above, the following study intersections are forecast to have significant impacts to lane storage queues when compared to the 2019 baseline condition. The following are improvements required to mitigate these impacts:

TRAF-29 Prior to obtaining a Certificate of Occupancy, all Phase 5 shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study intersection queues in the 2019 plus Phases 1 through 5 condition:

Golden State Boulevard/Herndon Avenue: The westbound left turn lane would need to be extended by 100 feet to 430 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Bryan Avenue/Herndon Avenue: The southbound right turn lane would need to be extended by 160 feet to 410 feet.

Milburn Avenue/Herndon Avenue: The southbound right turn lane would need to be extended by 130 feet to 230 feet; and the westbound right turn lane would need to be extended by 55 feet to 195 feet.

Brawley Avenue/Herndon Avenue: The northbound dual left turn lane would need to be extended by 140 feet to 245 feet; the northbound right turn lane would need to be extended by 185 feet to 260 feet; the eastbound right turn lane would need to be extended by 50 feet to 200 feet; and westbound dual left turn lane would need to be extended by 120 feet to 430 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the extension of the northbound dual left turn lane would be reimbursable/credited towards the FMSI fee.

Marks Avenue/Herndon Avenue: The southbound right turn lane would need to be extended by 370 feet to 530 feet; the eastbound dual left turn lane would need to be extended by 310 feet to 455 feet; the eastbound right turn lane would need to be extended by 135 feet to 185 feet; and the westbound right turn lane would need to be extended by 55 feet to 245 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

West Avenue/Herndon Avenue: The northbound right turn lane would need to be extended by 175 feet to 240 feet; and the southbound left turn lane would need to be extended by 110 feet to 295 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Palm Avenue/Herndon Avenue: The northbound dual left turn lane would need to be extended by 85 feet to 230 feet; the southbound right lane would need to be extended by 665 feet to 895 feet; the eastbound dual left turn lane would need to be extended by 440 feet to 685 feet; and the westbound right turn lane would need to be extended by 135 feet to 280 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the northbound dual left turn lane extension would be reimbursable/credited towards the FMSI fee.

Blackstone Avenue/Herndon Avenue: The southbound right turn lane would need to be extended by 100 feet to 90 feet; and the westbound right turn lane would need to be extended by 45 feet to 145 feet.

Bryan Avenue/Palo Alto Avenue: The northbound left turn would need to be extended by 460 feet to 610 feet, or dual left turn lanes can be constructed; southbound left turn lane would need to be extended by 115 feet to 265 feet; the eastbound left turn lane would need to be extended by 95 feet to 245 feet; and the westbound dual left turn lane would need to be to be extended by 70 feet to 220 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts

then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Hayes Avenue/Veterans Boulevard: The eastbound left turn lane would need to be extended by 105 feet to 255 feet, or dual left turn lanes can be constructed. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Bryan Avenue/Veterans Boulevard: The northbound dual left turn lane would need to be extended by 455 feet to 705 feet; the southbound right turn lane would need to be extended by 960 feet to 1,110 feet; the eastbound dual left turn lane would need to be extended by 210 feet to 460 feet; and the eastbound right turn lane would need to be extended by 940 feet to 1,090 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Bryan Avenue/Sierra Avenue: The northbound left turn lane would need to be extended by 190 feet to 340 feet; the southbound left turn lane would need to be extended by 315 feet to 465 feet, or dual left turn lanes can be constructed; and the eastbound left turn lane would need to be extended by 150 feet to 300 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Golden State Boulevard/Veterans Boulevard: This intersection will be located above-grade due to the Veterans Boulevard overpass with SR 99 and the UPRR tracks therefore; there will be limited geometric constraints. The northbound left turn lane would need to be extended by 335 feet to 645 feet; the southbound left turn lane would need to be extended by 440 feet to 740 feet; the eastbound left turn lane would need to be extended by 550 feet to 930 feet; and the westbound left turn lane would need to be extended by 210 feet to 530 feet.. Upon completion of the design of this grade-separated interchange, the possibility of adding dual left turn lanes all-around should be investigated. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Bullard Avenue/Carnegie Avenue: The northbound left turn lane would need to be extended by 340 feet to 565 feet, or construct a dual left turn lane. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Golden State Boulevard/Carnegie Avenue: The northbound right turn lane would need to be extended by 250 feet to 350 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Palm Avenue/Bullard Avenue: The northbound right turn lane would need to be extended by 175 feet to 230 feet; the southbound left turn lane would need to be extended by 100 feet to 190 feet; the southbound right turn lane would need to be extended by 50 feet to 120 feet; the eastbound dual left turn lane would need to be extended by 180 feet to 330 feet; and the westbound left turn lane would need to be extended by 90 feet to 230 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the extension of the southbound and westbound left turn lanes would be reimbursable/credited towards the FMSI fee.

Bryan Avenue (west)/Veterans Boulevard: The southbound dual left turn lane would need to be extended by 430 feet to 580 feet; and the westbound right turn lane would need to be extended by 335 feet to 485 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Golden State Boulevard/Shaw Avenue: The northbound right turn lane would need to be extended by 945 feet to 1,085 feet; the southbound dual left turn lane would need to be extended by 45 feet to 210 feet; the westbound dual left turn lane would need to be extended by 75 feet to 265 feet; and the westbound right turn lane would need to be extended by 640 feet to 830 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore, the extension of the southbound dual left turn lane would be reimbursable/credited towards the FMSI fee.

Brawley Avenue/Shaw Avenue: The southbound dual left turn lane would need to be extended by 60 feet to 280 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Marks Avenue/Shaw Avenue: The northbound dual left turn lane would need to be extended by 55 feet to 245 feet; the northbound right turn lane would need to be extended by 155 feet to 260 feet; the southbound right turn lane would need to be extended by 530 feet to 800 feet; and the dual eastbound left turn lane would need to be extended by 105 feet to 340 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Therefore the extension of the northbound dual left turn lane would be reimbursable/credited toward the FMSI fee.

SR 99 southbound ramps/Ashlan Avenue: The northbound right turn lane would need to be extended by 170 feet to 270 feet; the eastbound right turn lane would need to be extended by 55 feet to 155 feet; and the westbound left turn lane would need to be extended by 170 feet to 745 feet.

SR 99 northbound ramps/Ashlan Avenue: The southbound dual left turn lanes would need to be extended by 40 feet to 250 feet; the southbound right turn lane would need to be extended by 240 feet to 450 feet; and the westbound right turn lane would need to be extended by 150 feet to 235 feet. All other impacted turn lanes would have less than

significant queuing impacts due to the improved operations at adjacent intersections due to other mitigation measures.

Figure 9-16 illustrates the mitigation measures needed for the significant traffic impacts created by the addition of Phase 5 traffic to the 2019 baseline condition. Table 9-40 shows the improved levels of service with the implementation of the mitigation measures.

Significant Roadway Segment Impacts

Based on the 2019 plus Phases 1 through 5 traffic analysis discussed above, the following study roadway segments are forecast to have significant impacts with addition of Phase 5 traffic. The following are improvements required to mitigate these impacts:

TRAF-30 Prior to obtaining a Certificate of Occupancy, Phase 5 shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study roadway segments in the 2019 plus Phases 1 through 5 condition:

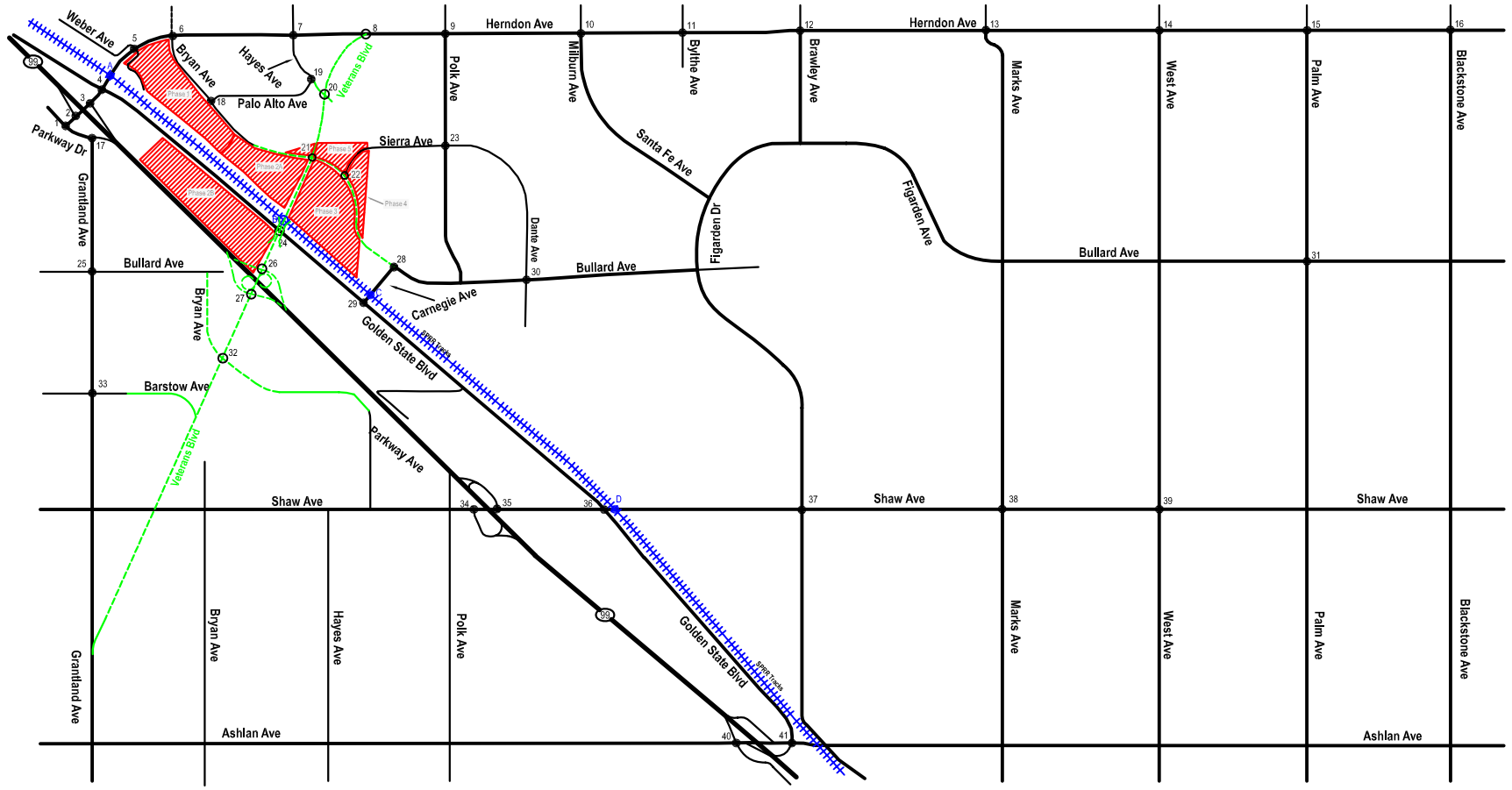
Herndon Avenue, Parkway Drive to SR 99 southbound off-ramp: Construct the eastbound direction of Herndon Avenue to two lanes between Parkway Drive and the SR 99 undercrossing. As part of mitigation measure TRAF-7 (2010 plus Phase 1), the SR 99 southbound off-ramp at this location will be removed for improved operations at this interchange. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Herndon Avenue, SR 99 southbound off-ramp to SR 99 northbound off-ramp: Based on field reconnaissance of the Herndon Avenue undercrossing of SR 99, there are no feasible measures to widen the existing bridge structure to accommodate additional capacity (lanes). Therefore, the project would create a significant unavoidable impact at this location in the westbound direction during the p.m. peak hour.

Herndon Avenue, SR 99 northbound ramps/Golden State Boulevard: Construct Herndon Avenue to four lanes (undivided) between the SR 99 northbound ramps and Golden State Boulevard. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Herndon Avenue, Blythe Avenue to Brawley Avenue: This segment of Herndon Avenue is already constructed with six lanes with a raised landscaped median island. This roadway segment is still forecast to operate with unsatisfactory LOS in both directions during the a.m. and/or p.m. peak hours. Therefore, the project would create a significant unavoidable impact at this location in both directions in the p.m. peak hour, however; *this segment of Herndon Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Herndon Avenue, Brawley Avenue to Marks Avenue: This segment of Herndon Avenue is already constructed with six lanes with a raised landscaped median island. This roadway segment is still forecast to operate with unsatisfactory LOS in both directions during the a.m. and/or p.m. peak hours. Therefore, the project would create a significant unavoidable impact at this location in the eastbound direction in the a.m. peak hour, however; *this segment of Herndon Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.



1 Parkway/Herndon
2 SR-99 SB Ramps/Herndon
3 SR-99 NB Ramps/Herndon
4 Golden State/Herndon
5 Weber/Herndon
6 Bryan/Herndon
7 Hayes/Herndon
8 Veterans/Herndon
9 Polk/Herndon
10 Milburn/Herndon
11 Blythe/Herndon
12 Brawley/Herndon
13 Marks/Herndon
14 West/Herndon
15 Palm/Herndon
16 Blackstone/Herndon
17 Grantland/Parkway-SR 99 SB On Ramp
18 Bryan/Palo Alto
19 Hayes/Palo Alto
20 Hayes/Veterans
21 Bryan/Veterans
22 Bryan/Sierra
23
24 Golden State/Veterans
25 Grantland/Bullard
26 SR-99 NB Ramps/Veterans
27 SR-99 SB Ramps/Veterans
28 Bullard/Carnegie
29 Golden State/Carnegie
30 Dante/Bullard
31 Palm/Bullard
32 Bryan/Veterans
33 Grantland/Barstow
34 SR-99 SB Ramps/Shaw
35 SR-99 NB Ramps/Shaw
36 Golden State/Shaw
37 Brawley/Shaw
38 Marks/Shaw
39 West/Shaw
40 SR-99 SB Ramps/Ashlan
41 SR-99 NB Ramps/Ashlan

LEGEND

- Project Site
- Study Intersection
- Existing Geometrics
- Mitigated Geometrics
- Traffic Signal
- Mitigated Traffic Signal
- Stop Control

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Figure 9-16
Year 2019 + Phases 1, 2, 3, 4, and 5 Mitigation Measures

Table 9-40 - Year 2019 plus Phase 1,2,3,4, & 5 Intersection Levels of Service with Mitigation Measures

		2019 Baseline + Project Phases 1-5				With Mitigation			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	*signal*	6.3	A	9.2	A				
2 99 SB Ramps/Herndon	*signal*	--	--	--	--				
3 99 NB Ramps/Herndon	*signal*	9.0	A	>80	F		*no feasible mitigaiton*		
4 Golden State/Herndon	signal	31.2	C	40.3	D				
5 Weber/Herndon	unsignalized	10.6	B	12.5	B				
6 Bryan/Herndon	signal	26.9	C	30.8	C				
7 Hayes/Herndon	signal	20.9	C	21.0	C				
8 Veterans/Herndon	signal	8.0	A	12.4	B				
9 Polk/Herndon	signal	20.0	B	79.7	E	19.1	B	42.7	D
10 Milburn/Herndon	signal	29.9	C	37.8	D				
11 Blythe/Herndon	signal	13.5	B	20.5	C				
12 Brawley/Herndon	signal	44.1	D	48.4	D				
13 Marks/Herndon	signal	35.3	D	45.9	D				
14 West/Herndon	signal	41.9	D	28.8	C				
15 Palm/Herndon	signal	48.9	D	>80	F				
16 Blackstone/Herndon	signal	28.5	C	30.3	C				
17 Grantland/Parkway	*signal*	7.2	A	23.2	C				
18 Bryan/Palo Alto	signal	24.5	C	52.7	D				
19 Hayes/Palo Alto	unsignalized	29.3	D	17.4	C				
20 Veterans/Hayes	signal	12.3	B	17.4	B				
21 Veterans/Bryan	signal	67.4	E	>80	F		*no feasible mitigaiton*		
22 Bryan/Sierra	signal	35.4	D	38.4	D				
23 Polk/Sierra	*signal*	7.4	A	9.8	A				
24 Golden State/Veterans	signal	56.5	E	>80	F		*no feasible mitigaiton*		
25 Grantland/Bullard	*signal*	8.4	A	33.4	D				
26 99 NB Ramps/Veterans	signal	26.4	C	>80	F		*no feasible mitigaiton*		
27 99 SB Ramps/Veterans	signal	5.1	A	22.0	C				
28 Carnegie/Bullard	signal	28.5	C	50.5	D				
29 Golden State/Carnegie	signal	26.1	C	>80	F				
30 Dante/Bullard	*signal*	7.7	A	8.0	A				
31 Palm/Bullard	signal	28.7	C	73.4	E				
32 Veterans/Bryan	signal	68.1	E	42.1	D				
33 Grantland/Barstow	*signal*	6.5	A	7.8	A				
34 99 SB Ramps/Shaw	signal	10.8	B	10.0	A				
35 99 NB Ramps/Shaw	signal	14.0	B	18.5	B				
36 Golden State/Shaw	signal	28.5	C	>80	F				
37 Brawley/Shaw	signal	25.0	C	47.9	D				
38 Marks/Shaw	signal	29.8	C	54.5	D				
39 West/Shaw	signal	24.9	C	29.9	C				
40 99 SB Ramps/Ashlan	signal	40.7	D	61.2	E				
41 99 NB Ramps/Ashlan	signal	32.0	C	76.2	E	31.1	C	62.5	E

Notes:

XXX Denotes delay that exceeds thresholds

XXX Denotes significant project impact

Parkway Drive, Herndon Avenue to Grantland Avenue: Construct Parkway Drive to two lanes in the southbound direction between Herndon Avenue and Grantland Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Veterans Boulevard, Golden State Boulevard to Bryan Avenue: This roadway segment is planned to be built to its ultimate General Plan configuration, but would continue to operate at LOS F in both directions in the a.m. and/or p.m. peak hours. Therefore, the project would create a significant unavoidable impact at this location in both directions in both peak hours. However, *this segment of Veterans Boulevard has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Veterans Boulevard, SR 99 northbound ramps to Golden State Boulevard: This roadway segment is planned to be built to its ultimate General Plan configuration, but would continue to operate at LOS F in both directions in the a.m. and/or p.m. peak hours. Therefore, the project would create a significant unavoidable impact at this location in both directions in both peak hours. However, *this segment of Veterans Boulevard has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Veterans Boulevard, SR 99 southbound ramps to SR 99 northbound ramps: This roadway segment is planned to be built to its ultimate General Plan configuration, but would continue to operate at LOS F in both directions in the a.m. and/or p.m. peak hours. Therefore, the project would create a significant unavoidable impact at this location in both directions in both peak hours. However, *this segment of Veterans Boulevard has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Veterans Boulevard, Bryan Avenue (west) to SR 99 southbound ramps: This roadway segment is planned to be built to its ultimate General Plan configuration, but would continue to operate at LOS F in both directions in the a.m. and/or p.m. peak hours. Therefore, the project would create a significant unavoidable impact at this location in both directions in both peak hours. However, *this segment of Veterans Boulevard has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Sierra Avenue, Bryan Avenue to Polk Avenue: With the construction of Sierra Avenue to two lanes in the eastbound and westbound directions between Bryan Avenue and Polk Avenue, the westbound direction is still forecast to operate at LOS F during the p.m. peak hour. Therefore, addition of Phases 5 traffic would create a significant unavoidable impact at this intersection.

Polk Avenue, Herndon Avenue to Sierra Avenue: Construct Polk Avenue to two lanes in each direction between Herndon Avenue and Sierra Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Golden State Boulevard, Herndon Avenue to Veterans Boulevard: Construct Golden State Boulevard to two lanes in each direction between Herndon Avenue and Veterans Boulevard. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Golden State Boulevard, Veterans Boulevard to Carnegie Avenue: Construct Golden State Boulevard to two lanes in the southbound direction between Veterans Boulevard and Carnegie Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Golden State Boulevard, Carnegie Avenue to Shaw Avenue: Construct Golden State Boulevard to two lanes in the northbound direction between Carnegie Avenue and Shaw Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Golden State Boulevard, Shaw Avenue to Ashlan Avenue: Construct Golden State Boulevard to two lanes in the southbound direction between Shaw Avenue and Ashlan Avenue. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Shaw Avenue, west of SR 99 southbound ramps: Construct Shaw Avenue to two lanes in the eastbound direction west of the SR 99 southbound ramps. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited.

Shaw Avenue, Golden State Boulevard to Brawley Avenue: This roadway segment is already built to its ultimate General Plan configuration. Therefore, the project would create a significant unavoidable impact to the westbound direction in the p.m. peak hour at this location. However, *this segment of Shaw Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Shaw Avenue, Brawley Avenue to Marks Avenue: This roadway segment is already built to its ultimate General Plan configuration. Therefore, the project would create a significant unavoidable impact to the eastbound and westbound direction in the p.m. peak hour at this location. However, *this segment of Shaw Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Carnegie Avenue, Golden State Boulevard to Bullard Avenue: Construct Carnegie Avenue to two lanes in each direction between Golden State Boulevard and Bullard Avenue.

Ashlan Avenue, SR 99 southbound ramps to SR 99 northbound ramps: Based on field reconnaissance of the Ashlan Avenue overcrossing of SR 99, there are no feasible measures to widen the existing bridge structure to accommodate additional capacity (lanes). Therefore, the project would create a significant unavoidable impact at this location.

Significant Caltrans Facility Impacts

Based on the 2019 plus Phases 1 through 5 traffic analysis discussed above, the following study area Caltrans facilities are forecast to have significant impacts with addition of Phase 5 traffic. The following are improvements required to mitigate these impacts:

TRAF-31 Prior to obtaining a Certificate of Occupancy, Phase 5 shall pay their fair-share contribution towards improvements to Caltrans facilities noted below. The fair-share contribution shall be calculated per the February 2006 *Mutual Release and Settlement Agreement* between the City of Fresno and Caltrans District 6 (otherwise known as the "Interim Agreement"). This Interim Agreement provides guidance on the method for calculating a fair share to mitigate for impacts to State highways. Since Phase 1 will require a General Plan Amendment (GPA),

and the GPA will increase trips over the existing use, the "Combined Formula" was used to calculate fair share. The Combined Formula is provided below:

P = (P1/F1) + (P2 – P1)/F2, where:

P = fair share percentage
P1 = the higher of the a.m. or p.m. peak hour project trips without GPA
P2 = the higher of the a.m. or p.m. peak hour project trips with GPA
F1 = total 2025 corresponding future peak hour traffic without project
F2 = total 2025 corresponding future peak hour traffic with project

Table 9-41 shows the calculated Combined Share costs for impacted Caltrans facilities. The following are improvements for the impacted State facilities in the 2019 plus Phases 1 through 5 condition. As noted, some of these facilities are also part of the City's TSMI and FMSI fee programs. For all other facilities, payment of the fair-share cost based on the Combined Share formula would mitigate project impacts.

Mitigation measures to the following Caltrans facilities have been discussed above, either in the measures for intersections, queuing, and/or roadway segments. For facilities not previously discussed, the needed mitigation measures are provided below.

- SR 99 northbound off-ramp/Herndon Avenue (impacts to intersection LOS discussed above)
- SR 99 northbound ramps/Veterans Boulevard (impacts to intersection LOS discussed above)
- SR 99 southbound ramps/Ashlan Avenue (impacts to queuing discussed above)
- SR 99 northbound ramps/Ashlan Avenue (impacts to intersection LOS and queuing discussed above)
- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (impacts to roadway segments discussed above)
- Ashlan Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (impacts to roadway segments discussed above)
- SR 99 mainline northbound, Shaw Avenue to Veterans Boulevard: Phase 5 shall contribute its Combined Share percentage of cost to widen this segment of SR 99 to four lanes to mitigate cumulative impacts to mainline LOS.
- SR 99 mainline northbound, Ashlan Avenue to Shaw Avenue: Phase 5 shall contribute its Combined Share percentage of cost to widen this segment of SR 99 to four lanes to mitigate cumulative impacts to mainline LOS.
- SR 99 mainline southbound, Herndon Avenue to Veterans Boulevard: Phase 5 shall contribute its Combined Share percentage of cost to widen this segment of SR 99 to four lanes to mitigate cumulative impacts to mainline LOS.
- SR 99 mainline southbound, Shaw Avenue to Ashlan Avenue: Phase 5 shall contribute its Combined Share percentage of cost to widen this segment of SR 99 to four lanes to mitigate cumulative impacts to mainline LOS.

Table 9-41 – Phase 5 Combined Share Percentages for Impacted Caltrans Facilities

Location	GP Zone P1	Proposed Phase 5 P2	2025 GP (No proj) F1	2025 + GPA (Phase 5) F2	Combined-Share P
RAMP INTERSECTIONS					
- SR 99 NB off-ramp/Herndon Avenue	32	5	1,432	3,435	1.46%
- Parkway Drive/Herndon Avenue	10	4	807	2,295	0.98%
- Parkway Dr/Grantland-SR 99 SB on-ramp	10	4	785	2,196	1.01%
- SR 99 SB ramps/Shaw Avenue	2	0	5,276	5,378	0.00%
- SR 99 NB ramps/Shaw Avenue	1	0	5,815	5,904	0.00%
- SR 99 SB ramps/Ashlan Avenue	5	3	3,466	3,585	0.09%
- SR 99 NB ramps/Ashlan Avenue	7	0	4,686	4,686	0.00%
- SR 99 SB off-ramp to Parkway Drive	7	0	1,170	1,178	0.00%
OVER-/UNDERCROSSINGS					
- Shaw Ave overcrossing EB direction	1	0	1,710	1,750	0.00%
- Ashlan Ave overcrossing EB direction	7	1	1,672	1,720	0.08%
AUXILIARY LANES					
- SR 99 NB off-ramp to Herndon Ave (aux lane)	19	0	672	1,179	1.22%
- SR 99 SB on-ramp from Parkway Dr (aux lane)	5	1	586	1,144	0.51%
MAINLINE LANES					
- SR 99 NB n/o Herndon Avenue	2	305	5,270	5,611	4.92%
- SR 99 SB n/o Herndon Avenue	6	31	4,913	4,998	0.62%
- SR 99 NB (future) Veterans Blvd to Herndon Ave	19	841	4,974	5,820	11.34%
- SR 99 SB Herndon Ave to (future) Veterans Blvd	5	800	4,666	6,056	10.26%
- SR 99 NB Shaw Ave to (future) Veterans Blvd	72	549	6,077	6,923	7.16%
- SR 99 SB (future) Veterans Blvd to Shaw Ave	28	1,092	5,912	7,302	10.98%
- SR 99 NB Ashlan Ave to Shaw Ave	72	417	6,301	6,887	5.60%
- SR 99 SB Shaw Ave to Ashlan Ave	26	917	6,031	7,138	10.38%
- SR 99 NB s/o Ashlan Avenue	64	374	7,014	7,313	4.79%
- SR 99 SB s/o Ashlan Avenue	22	644	7,057	8,025	6.96%

Note:

- "Combined" share percentage is determined by the following formula: P=(P1/F1)+(P2-P1)/F2.

- SR 99 mainline northbound weaving section, Shaw Avenue to Veterans Boulevard: Phase 5 shall contribute its Combined Share percentage of cost to widen this weaving section to five lanes (with auxiliary lane) to mitigate cumulative impacts to this weaving section.
- SR 99 mainline southbound weaving section, Herndon Avenue to Veterans Boulevard: Phase 5 shall contribute its Combined Share percentage of cost to widen this weaving section to four lanes to mitigate significant cumulative impacts to this weaving section.
- SR 99 mainline southbound weaving section, Veterans Boulevard to Shaw Avenue: Phase 5 shall contribute its Combined Share percentage of cost to widen this weaving section to four lanes to mitigate significant cumulative impacts to this weaving section.

Significant On-Site Circulation, Access, and Parking Impacts

TRAF-32 Prior to issuance of a Certificate of Occupancy, Phase 5 shall submit a site plan for review and approval by the City Traffic Engineering Division of Public Works. In addition to the site plan, each Phase will need a focused traffic analysis that addresses pedestrian/cyclist circulation through, to and from, each Phase of the Master Plan. The traffic analysis will also evaluate exact driveway locations, storage/queue under a 20 year horizon scenario, site distance (due to horizontal and vertical curves of the major streets in the area).

Buildout Year 2025 plus Master Plan (Phases 1, 2, 3, 4, and 5)

Traffic Volumes and Geometrics

Figure 9-17 illustrates the study area intersection geometrics and traffic control for the Buildout 2025 plus Master Plan (Phases 1, 2, 3, 4, and 5) condition. The Year 2025 plus Master Plan traffic volumes for peak hour traffic were extracted and post-processed from the Fresno COG's 2025 travel model. The 2025 travel model takes the normal growth-year model and, for all the known approved projects at the time of model development, primarily other active GPAs, adds socioeconomic information on top of the normal growth projections. In addition, the Buildout Year 2025 scenario includes all future roadway and intersection improvements on the City's General Plan Circulation Element as well as known freeway mainline improvements on the State facilities in the Fresno COG network. Figure 9-18 illustrates the resulting Buildout 2025 plus Master Plan peak hour traffic volumes.

As previously discussed in Section 8.0 – Project Traffic Trip Generation, Distribution, and Assignment, the Master Plan site is currently designated with Light Industrial uses and Medium Density Residential uses as shown in the General Plan. Based on ITE trip rates, the traffic generated by the Master Plan area, based on the currently designated General Plan land uses (Light Industrial and Medium Density Residential), is approximately 11,938 ADT, 1,584 a.m. peak hour trips (1,211 inbound and 373 outbound), and 1,565 peak hour trips (428 inbound and 1,137 outbound).

With the proposed General Plan Amendment, the Master Plan would replace the designated Light Industrial and Medium Density Residential uses with a mix of retail/commercial uses (power center, lifestyle, and neighborhood retail centers) and office/business park uses. Based on the Master Plan's total trip generation estimates shown in Section 8.0, the entire 240 acre Master Plan area would generate approximately 95,614 ADT, 3,281 a.m. peak hour trips (2,254 inbound and 1,027 outbound), and 8,068 p.m. peak hour trips (3,573 inbound and 4,495 outbound).

Therefore, the additional net trips generated in the Master Plan area (i.e., the difference in trips between the proposed GPA and currently designated land uses) would be approximately 83,676 more ADT, 1,697 more a.m. peak hour trips, and 6,503 more p.m. peak hour trips.

Intersection Levels of Service

Table 9-42 presents the results of the Buildout 2025 plus Master Plan intersection LOS and delays calculated in Synchro. In addition, the table also compares the Buildout 2025 plus Master Plan LOS with the Buildout 2025 Baseline (current General Plan) LOS and also indicates the project contribution at those intersections that are forecast to operate, or continue to operate, with unsatisfactory LOS (i.e., LOS E or F).

According to the table and based on the City's significance criteria, the following study intersections would be significantly impacted by the addition of the proposed Master Plan (Phases 1 through 5) to 2025 baseline traffic. Therefore, the proposed project would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay ≥5 seconds at LOS F) at the following study intersections:

- SR 99 northbound off-ramp/Herndon Avenue (LOS A to F in p.m.)
- Polk Avenue/Herndon Avenue (LOS D to F in p.m.)
- Palm Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS F in p.m.)
- Bryan Avenue/Veterans Boulevard (LOS C to F in p.m.)

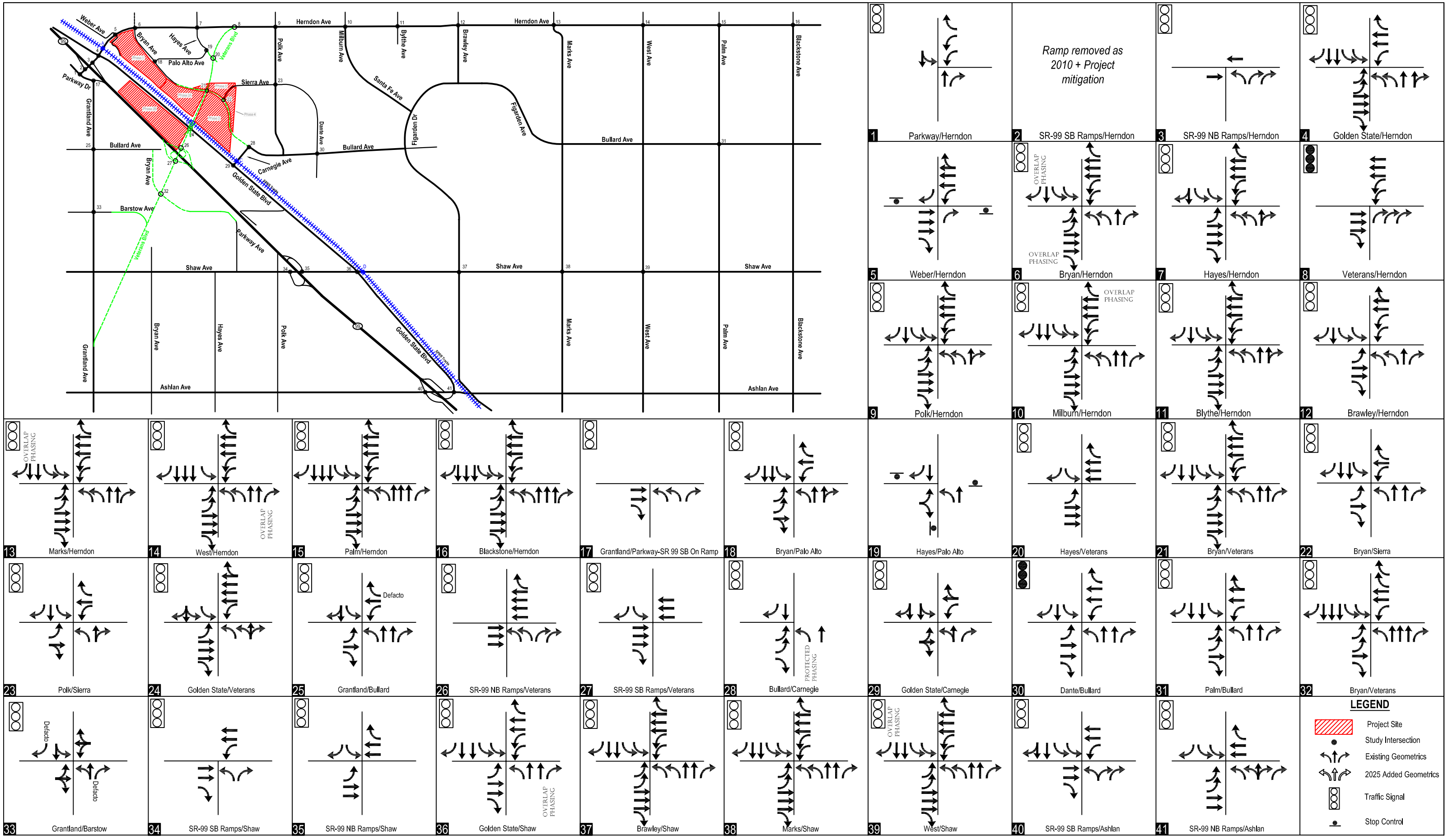

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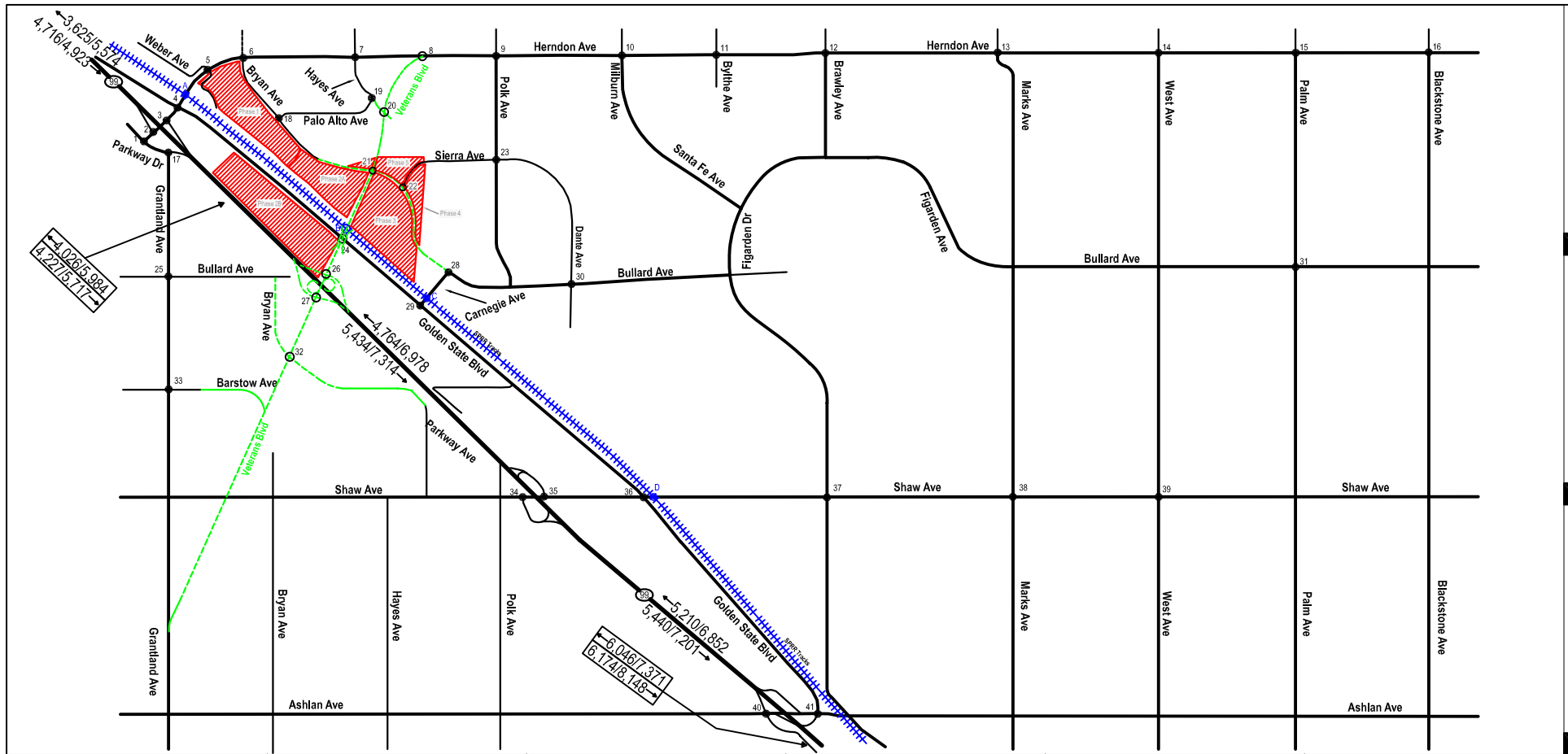
Figure 9-17
Year 2025 + Master Plan Phase 1, 2, 3, 4, and 5 Intersection Geometrics and Traffic Control



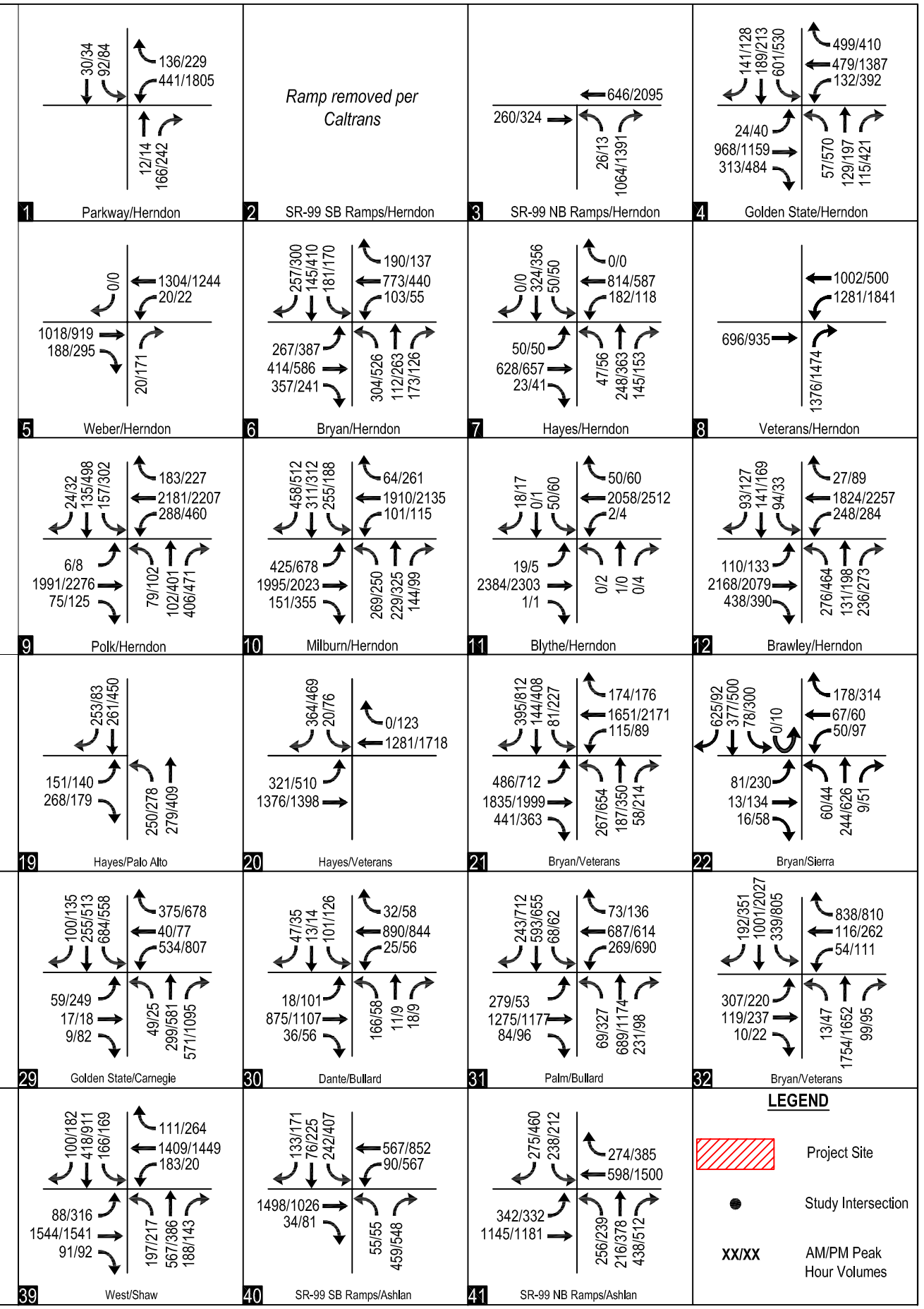


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Figure 9-18

Buildout Year 2025 + Phases 1, 2, 3, 4 and 5 Weekday AM and PM Peak Hour Traffic Volumes

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Table 9-42 - Year 2025 Baseline plus Phases 1,2,3,4, & 5 Weekday AM and PM Peak Hour LOS Summary

		2025 Baseline				2025 + Master Plan Phases 1-5			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	signal	3.6	A	10.4	B	13.0	B	9.4	A
2 99 SB Ramps/Herndon		--	--	--	--	--	--	--	--
3 99 NB Ramps/Herndon	signal	10.2	B	9.2	A	17.5	B	>80	F
4 Golden State/Herndon	signal	20.8	C	35.2	D	25.6	C	46.8	D
5 Weber/Herndon	unsignalized	11.6	B	10.5	B	11.2	B	13.1	B
6 Bryan/Herndon	signal	27.0	C	44.2	D	26.9	C	25.9	C
7 Hayes/Herndon	signal	20.8	C	20.7	C	20.9	C	21.1	C
8 Veterans/Herndon	signal	8.4	A	6.2	A	8.1	A	14.9	B
9 Polk/Herndon	signal	31.3	C	50.2	D	34.1	C	69.3	E
10 Milburn/Herndon	signal	39.4	D	60.5	E	54.5	D	62.5	E
11 Blythe/Herndon	signal	14.2	B	14.9	B	23.3	C	14.0	B
12 Brawley/Herndon	signal	37.9	D	41.0	D	36.0	D	42.1	D
13 Marks/Herndon	signal	43.3	D	48.5	D	30.5	C	35.4	D
14 West/Herndon	signal	35.4	D	31.9	C	27.3	C	27.5	C
15 Palm/Herndon	signal	48.6	D	>80	F	49.6	D	>80	F
16 Blackstone/Herndon	signal	30.2	C	42.3	D	32.6	C	36.6	D
17 Grantland/Parkway	signal	6.2	A	5.4	A	15.5	B	8.7	A
18 Bryan/Palo Alto	signal	11.1	B	9.4	A	19.3	B	49.0	D
19 Hayes/Palo Alto	unsignalized	34.5	D	46.0	E	24.1	C	45.0	E
20 Veterans/Hayes	signal	10.8	B	13.3	B	13.1	B	26.4	C
21 Veterans/Bryan	signal	15.6	B	27.2	C	33.3	C	>80	F
22 Bryan/Sierra	unsignalized	15.1	B	11.5	B	5.8	A	10.6	B
23 Polk/Sierra	signal	6.7	A	6.8	A	6.6	A	10.8	B
24 Golden State/Veterans	signal	21.0	C	74.7	E	21.0	C	>80	F
25 Grantland/Bullard	signal	8.8	A	9.7	A	8.8	A	6.5	A
26 99 NB Ramps/Veterans	signal	10.3	B	27.6	C	29.8	C	>80	F
27 99 SB Ramps/Veterans	signal	4.4	A	9.4	A	7.2	A	11.0	B
28 Carnegie/Bullard	signal	16.7	B	12.4	B	26.1	C	>80	F
29 Golden State/Carnegie	signal	30.4	C	64.6	E	64.4	E	>80	F
30 Dante/Bullard	signal	6.6	A	10.1	B	7.5	A	6.7	A
31 Palm/Bullard	signal	32.2	C	>80	F	46.6	D	>80	F
32 Veterans/Bryan	signal	24.6	C	35.4	D	35.2	D	47.9	D
33 Grantland/Barstow	signal	6.4	A	6.3	A	6.8	A	7.7	A
34 99 SB Ramps/Shaw	signal	11.8	B	18.7	B	10.7	B	25.8	C
35 99 NB Ramps/Shaw	signal	32.9	C	>80	F	42.0	D	>80	F
36 Golden State/Shaw	signal	61.6	E	>80	F	52.0	D	>80	F
37 Brawley/Shaw	signal	38.3	D	45.0	D	26.6	C	49.3	D
38 Marks/Shaw	signal	45.1	D	>80	F	31.4	C	76.2	E
39 West/Shaw	signal	27.2	C	33.7	C	28.2	C	35.8	D
40 99 SB Ramps/Ashlan	signal	25.4	C	32.4	C	33.7	C	53.2	D
41 99 NB Ramps/Ashlan	signal	38.1	D	36.6	D	38.0	D	50.4	D

Notes:

XXX Denotes delay that exceeds thresholds

XXX Denotes significant project impact

- Golden State Boulevard/Veterans Boulevard (LOS E to F in p.m.)
- SR 99 northbound ramps/Veterans Boulevard (LOS C to F in p.m.)
- Bullard Avenue/Carnegie Avenue (LOS B to F in p.m.)
- Golden State Boulevard/Carnegie Avenue (LOS C to E in a.m.; LOS E to F in p.m.)
- SR 99 northbound Ramps/Shaw Avenue (LOS C to D in a.m.
- Golden State Boulevard/Shaw Avenue (additional delay ≥5 seconds to LOS F in p.m.)

Signal Warrant Analysis

A peak hour traffic signal warrant was conducted for the unsignalized intersection of Hayes Avenue/Palo Alto Avenue that was forecast to operate with an unsatisfactory LOS in the year 2025 baseline condition. The peak hour signal warrant analysis was performed based on the California MUTCD. Appendix D contains the signal warrant analysis worksheets. Based on the peak hour signal warrant analysis, this unsignalized intersection would meet the minimum volumes for the MUTCD peak hour warrant criteria.

Queuing Analysis

Table 9-43 presents the results of the Buildout 2025 plus Master Plan weekday a.m. and p.m. peak hour queuing analyses based on the Synchro LOS analysis and the calculated 95th percentile queue lengths for each left- and/or right turn storage lane for each signalized study area intersection.

Based on the queuing analysis, the addition of Master Plan traffic to 2025 baseline condition would create new significant queues and/or exacerbate significant baseline queues by more than one vehicle (or 25 feet), and that would exceed a storage lane's capacity during the weekday peak hours:

- Veterans Boulevard/Herndon Avenue (WBL in p.m.)
- Polk Avenue/Herndon Avenue (NBR in both peak hours; and SBL in p.m.)
- Milburn Avenue/Herndon Avenue (SBR in both peak hours; EBL in a.m.)
- Brawley Avenue/Herndon Avenue (NBL, NBR, and EBR in p.m.)
- Marks Avenue/Herndon Avenue (NBR in both peak hours; SBR and EBR in p.m.)
- Palm Avenue/Herndon Avenue (SBR and EBL in both peak hours; WBR in a.m.)
- Blackstone Avenue/Herndon Avenue (SBR in p.m.; WBR in both peak hours)
- Hayes Avenue/Veterans Boulevard (EBL in p.m.)
- Bryan Avenue/Veterans Boulevard (NBL and EBL in p.m.; and SBR and EBR in both peak hours)
- Golden State Boulevard/Veterans Boulevard (NBL, SBL, and EBL in p.m.)
- Bullard Avenue/Carnegie Avenue (NBL and SBR in p.m.)
- Golden State Boulevard/Carnegie Avenue (NBR and EBL in both peak hours; WBL and WBR in p.m.)
- Palm Avenue/Bullard Avenue (NBL and SBR in p.m.; EBL in a.m.; WBL in both peak hours)
- Bryan Avenue (west)/Veterans Boulevard (SBL in p.m.; WBR in both peak hours)
- Golden State Boulevard/Shaw Avenue (SBR in both peak hours; SBL, WBL, and WBR in p.m.)
- Brawley Avenue/Shaw Avenue (SBL in p.m.)

Table 9-43 - Buildout 2025 plus Master Plan Intersection Queuing Analysis Summary

Signalized Intersection		Storage & 95th Percentile Queue Lengths (ft)							
		NBL	NBR	SBL	SBR	EBL	EBR	WBL	WBR
1 Parkway/Herndon	Storage Length[1]	--	150	150	--	--	--	340	340
	AM Queue[1]	--	73	34	--	--	--	61	22
	PM Queue[1]	--	51	64	--	--	--	157	0
3 SR-99 NB Ramps/Herndon	Storage Length[1]	250	500	--	--	--	--	--	--
	AM Queue[1]	21	82	--	--	--	--	--	--
	PM Queue[1]	28	510	--	--	--	--	--	--
4 Golden State/Herndon	Storage Length[1]	310	--	330	200	330	200	330	200
	AM Queue[1]	29	--	229	33	15	87	53	72
	PM Queue[1]	323	--	302	87	31	396	473	67
6 Bryan/Herndon	Storage Length[1]	250	250	250	150	250	150	250	150
	AM Queue[1]	97	38	72	124	139	36	47	48
	PM Queue[1]	201	36	73	162	172	66	32	44
7 Hayes/Herndon	Storage Length[1]	140	--	100	--	250	100	250	125
	AM Queue[1]	54	--	0	--	0	15	184	0
	PM Queue[1]	27	--	0	--	0	20	52	0
8 Veterans/Herndon	Storage Length[1]	--	250	--	--	--	--	250	--
	AM Queue[1]	--	189	--	--	--	--	222	--
	PM Queue[1]	--	214	--	--	--	--	529	--
9 Polk/Herndon	Storage Length[1]	140	--	200	160	225	100	250	100
	AM Queue[1]	48	--	111	20	9	26	169	72
	PM Queue[1]	74	--	248	26	12	63	195	101
10 Milburn/Herndon	Storage Length[1]	225	100	230	100	230	135	230	140
	AM Queue[1]	179	88	129	451	263	61	47	37
	PM Queue[1]	207	56	120	524	144	49	81	161
11 Blythe/Herndon	Storage Length[1]	235	235	120	120	220	140	220	140
	AM Queue[1]	0	0	38	0	7	1	4	24
	PM Queue[1]	5	0	46	21	8	3	7	28
12 Brawley/Herndon	Storage Length[1]	250	150	250	150	290	150	310	100
	AM Queue[1]	172	152	67	42	71	147	105	7
	PM Queue[1]	284	177	28	80	104	165	111	6
13 Marks/Herndon	Storage Length[1]	245	125	250	160	250	50	280	190
	AM Queue[1]	122	124	110	145	58	6	87	148
	PM Queue[1]	98	88	158	476	112	7	121	195
14 West/Herndon	Storage Length[1]	250	65	250	350	260	200	275	140
	AM Queue[1]	69	86	120	30	37	42	17	49
	PM Queue[1]	61	58	79	89	55	27	108	56
15 Palm/Herndon	Storage Length[1]	250	280	250	230	245	190	250	145
	AM Queue[1]	117	108	119	501	393	75	93	221
	PM Queue[1]	186	31	212	1,416	477	39	62	110
16 Blackstone/Herndon	Storage Length[1]	250	110	240	90	250	160	250	100
	AM Queue[1]	19	49	139	38	173	32	98	145
	PM Queue[1]	91	90	152	159	105	155	202	145
17 Grantland/Parkway	Storage Length[1]	420	80	--	--	--	150	--	--
	AM Queue[1]	26	51	--	--	--	21	--	--
	PM Queue[1]	58	80	--	--	--	36	--	--
18 Bryan/Palo Alto	Storage Length[1]	250	150	250	150	250	--	150	100
	AM Queue[1]	--	--	232	--	--	--	--	56
	PM Queue[1]	--	--	95	--	--	--	--	37
20 Hayes/Veterans	Storage Length[1]	--	--	150	150	150	--	--	150
	AM Queue[1]	--	--	20	57	260	--	--	0
	PM Queue[1]	--	--	83	110	530	--	--	35
21 Bryan/Veterans	Storage Length[1]	250	150	250	150	250	150	250	150
	AM Queue[1]	47	0	142	33	230	0	70	66
	PM Queue[1]	473	195	160	0	517	0	79	114
22 Bryan/Sierra	Storage Length[1]	150	150	150	150	150	150	150	150
	AM Queue[1]	17	4	22	31	45	11	32	36
	PM Queue[1]	16	10	238	14	139	24	68	93
23 Polk/Sierra	Storage Length[1]	150	150	150	60	150	--	135	135
	AM Queue[1]	40	0	33	22	28	--	9	16
	PM Queue[1]	95	0	86	32	104	--	8	17
24 Golden State/Veterans	Storage Length[1]	310	--	300	--	380	250	320	--
	AM Queue[1]	216	--	6	--	44	50	128	--
	PM Queue[1]	660	--	563	--	1,012	108	280	--
25 Grantland/Bullard	Storage Length[1]	250	--	250	--	250	100	100	100
	AM Queue[1]	4	--	17	--	29	3	1	15
	PM Queue[1]	8	--	24	--	28	3	3	15
26 SR 99 NB Ramps/Veterans	Storage Length[1]	1,000	1,000	--	--	--	--	--	380
	AM Queue[1]	74	474	--	--	--	--	--	0
	PM Queue[1]	97	941	--	--	--	--	--	0
27 SR 99 SB Ramps/Veterans	Storage Length[1]	--	--	1,000	1,000	--	400	--	--
	AM Queue[1]	--	--	106	53	--	0	--	--
	PM Queue[1]	--	--	77	147	--	0	--	--
28 Bullard/Carnegie	Storage Length[1]	225	--	--	150	250	615	--	--
	AM Queue[1]	637	--	--	67	208	148	--	--
	PM Queue[1]	1,078	--	--	635	422	729	--	--
29 Golden State/Carnegie	Storage Length[1]	150	150	150	--	--	--	600	150
	AM Queue[1]	83	397	864	--	--	--	437	92
	PM Queue[1]	43	968	761	--	--	--	614	501
30 Dante/Bullard	Storage Length[1]	130	85	145	145	250	150	220	150
	AM Queue[1]	58	8	37	14	11	10	14	9
	PM Queue[1]	34	8	64	15	53	11	37	11
31 Palm/Bullard	Storage Length[1]	190	105	240	270	235	0	275	0
	AM Queue[1]	131	59	129	61	126	--	329	--
	PM Queue[1]	596	54	157	918	45	--	1,101	--
32 Bryan (West)/Veterans[2]	Storage Length[1]	250	150	250	150	250	150	250	150
	AM Queue[1]	34	46	185	18	181	17	90	510
	PM Queue[1]	97	65	479	100	121	23	181	359
33 Grantland/Barstow	Storage Length[1]	--	100	--	100	--	--	--	--
	AM Queue[1]	--	3	--	5	--	--	--	--
	PM Queue[1]	--	0	--	6	--	--	--	--
34 99 SB Ramps/Shaw[2]	Storage Length[1]	--	--	1,000	1,000	--	150	--	--
	AM Queue[1]	--	--	193	111	--	0	--	--
	PM Queue[1]	--	--	440	471	--	0	--	--
35 99 NB Ramps/Shaw[2]	Storage Length[1]	1,430	1,000	--	--	--	150	--	150
	AM Queue[1]	920	76	--	--	--	0	--	0
	PM Queue[1]	1,225	265	--	--	--	0	--	0
36 Golden State/Shaw	Storage Length[1]	140	140	165	165	180	180	190	190
	AM Queue[1]	20	655	235	7	32	46	228	166
	PM Queue[1]	43	1,148	477	35	68	65	366	427
37 Brawley/Shaw	Storage Length[1]	260	100	220	130	220	130	200	120
	AM Queue[1]	105	26	52	42	43	49	43	19
	PM Queue[1]	255	94	320	105	96	7	73	14
38 Marks/Shaw	Storage Length[1]	190	105	240	270	235	135	275	155
	AM Queue[1]	93	107	128	387	136	33	91	20
	PM Queue[1]	355	141	139	263	313	28	62	100
39 West/Shaw	Storage Length[1]	240	75	185	115	240	155	210	125
	AM Queue[1]	96	62	77	32	40	28	100	34
	PM Queue[1]	137	60	86	84	179	39	18	115
40 99 SB Ramps/Ashlan	Storage Length[1]	100	100	360	110	--	100	575	--
	AM Queue[1]	77	553	391	0	--	33	188	--
	PM Queue[1]	88	416	642	0	--	79	850	--
41 99 NB Ramps/Ashlan	Storage Length[1]	240	520	210	210	320	--	--	85
	AM Queue[1]	285	289	130	67	370	--	--	82
	PM Queue[1]	374	625	178	388	522	--	--	260

Notes:
[1] Storage length determined by field measurement and review of scaled aerial photography. AM & PM queue lengths determined in *Synchro* .
[2] Intersection is not existing, storage lengths were based upon 95th Percentile Queue.
XXX-Denotes 95th percentile queue that would exceed the lane's storage capacity.

- Marks Avenue/Shaw Avenue (NBL and EBL in p.m.; SBR in a.m.)
- SR 99 southbound ramps/Ashlan Avenue (NBR and SBL in both peak hours; WBL in p.m.)
- SR 99 northbound ramps/Ashlan Avenue (NBL and EBL in both peak hours; NBR, SBR, and WBR in. p.m.)

Roadway Level of Service Analysis per City TIS Preparation Guidelines

Table 9-44 presents the results of the Buildout 2025 plus Master Plan roadway level of service analysis for the weekday a.m. and p.m. peak hours. In addition, the table provides a comparison of the Buildout 2025 Baseline (current General Plan) and Buildout 2025 plus Master Plan roadway levels of service. The addition of the Master Plan trips to the following roadway segments would be considered a significant impact since the LOS changes from satisfactory conditions (LOS D or better) in 2025 baseline condition to unsatisfactory (i.e. LOS E or F) levels with the addition of traffic from the Master Plan:

- Herndon Avenue: Parkway Drive to SR 99 southbound off-ramp (LOS D to F westbound in p.m.)
- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (LOS C to D westbound in a.m.; LOS D to F westbound in p.m.)
- Herndon Avenue: SR 99 northbound off-ramp to Golden State Boulevard (LOS D to F eastbound in both peak hours; LOS D to F westbound in p.m.)
- Herndon Avenue: Hayes Avenue to Veterans Boulevard (LOS C to F westbound in p.m.)
- Herndon Avenue: Polk Avenue to Milburn Avenue (LOS D to E both directions in a.m.; LOS D to F eastbound in p.m.)
- Herndon Avenue: Blythe Avenue to Brawley Avenue (LOS D to E eastbound in p.m.)
- Parkway Drive: Herndon Avenue to Grantland Avenue (LOS C to F southbound in p.m.)
- Veterans Boulevard: Golden State Boulevard to Bryan Avenue (LOS D to F eastbound in both peak hours)
- Veterans Boulevard: SR 99 northbound ramps to Golden State Boulevard (LOS D to F eastbound in a.m.; LOS D to E westbound in p.m.)
- Veterans Boulevard: SR 99 southbound ramps to SR 99 northbound ramps (LOS D to F both directions in a.m.; LOS D to F eastbound in p.m.)
- Veterans Boulevard: Bryan Avenue (west) to SR 99 southbound ramps (LOS D to F eastbound in p.m.)
- Sierra Avenue: Bryan Avenue to Polk Avenue (LOS C to F westbound in a.m.; LOS C to F eastbound in p.m.; LOS D to F westbound in p.m.)
- Polk Avenue: Herndon Avenue to Sierra Avenue (LOS D to F northbound in a.m.; LOS C to F southbound in p.m.)
- Golden Gate Boulevard: Carnegie Avenue to Shaw Avenue (LOS D to E northbound in p.m.)
- Shaw Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS D to F westbound in a.m.; LOS D to E eastbound in p.m.)
- Palm Avenue: Herndon Avenue to Bullard Avenue (LOS D to E southbound in p.m.)

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Table 9-44 - Buildout 2025 plus Project Master Plan Roadway Segment Level of Service Summary

		2025 plus Phases 1-5							
		AM Peak Hour				PM Peak Hour			
Roadway Segment	No. of Lanes	EB/NB Volume	LOS[1]	WB/SB Volume	LOS[1]	EB/NB Volume	LOS[1]	WB/SB Volume	LOS[1]
Herndon Avenue									
Parkway to SR 99 SB Ramps	1	260	C	681	D	326	C	2,101	F
SR 99 SB Ramps to SR 99 NB Ramps	1	260	C	646	D	326	C	2,101	F
SR 99 NB Ramps to Golden State	1	1,305	F	677	D	1,683	F	2,095	F
Golden State to Weber	3	1,684	C	1,134	C	2,114	D	2,189	D
Weber to Bryan	3	1,038	C	1,314	C	1,214	C	1,266	C
Bryan to Hayes	3	768	C	1,046	C	818	C	632	C
Hayes to Veterans	3	696	C	1,002	C	935	C	5,000	F
Veterans to Polk	3	2,072	C	2,282	D	2,409	D	2,341	D
Polk to Milburn	3	2,571	E	2,652	E	3,056	F	2,897	F
Milburn to Blythe	3	2,404	D	2,076	C	2,310	D	2,531	D
Blythe to Brawley	3	2,716	F	2,193	D	2,602	E	2,848	F
Brawley to Marks	3	2,668	E	2,144	D	2,534	D	2,911	F
Marks to West	3	2,660	E	2,238	D	2,322	D	2,869	F
West to Palm	3	2,768	F	2,294	D	2,447	D	3,235	F
Palm to Blackstone	3	2,173	D	1,930	C	2,123	D	2,161	D
e/o Blackstone	3	1,942	C	2,277	D	2,101	C	2,323	D
Parkway Drive									
Herndon and Grantland	2	220	C	666	C	282	C	1,877	F
Bryan Avenue									
Herndon to Palo Alto	2	629	C	659	C	1,086	C	905	C
Palo Alto to Veterans	2	571	C	861	C	1,253	D	1,509	D
Veterans to Sierra	2	515	C	1,080	C	1,470	D	902	C
Sierra and Carnegie	2	410	C	520	C	686	C	697	C
Carnegie to Dante	2	1,208	D	986	C	1,064	C	1,433	D
Palo Alto Avenue									
Bryan to Hayes	1	419	C	503	D	398	C	361	C
Hayes Avenue									
Herndon to Palo Alto	1	340	C	514	D	572	D	533	D
Palo Alto to Veterans	1	529	D	384	C	687	D	557	D
Veterans Avenue									
Hayes to Herndon	3	1,376	C	1,281	C	1,474	C	1,841	D
Bryan to Hayes	3	1,697	C	1,645	C	1,908	D	2,199	D
Golden State to Bryan	3	2,871	F	2,316	D	3,445	F	4,197	F
SR 99 NB Ramps to GS	3	3,372	F	2,475	E	3,862	F	5,156	F
SR 99 SB Ramps to SR 99 NB Ramps	3	2,710	F	2,605	F	2,623	F	4,722	F
Bryan(2) to SR 99 SB Ramps	3	2,899	F	1,532	C	2,681	F	3,183	F
Sierra Avenue									
Bryan to Polk	1	343	C	1,368	F	1,017	F	2,242	F
Polk Avenue									
Herndon to Sierra	1	587	D	393	C	974	F	850	F
Golden State Boulevard									
Herndon to Veterans	1	301	C	1,001	C	1,188	D	1,216	D
Veterans to Carnegie	1	733	C	1,039	C	1,508	D	1,206	D
Carnegie to Shaw	1	934	C	839	C	1,701	E	1,343	D
Shaw to Ashlan	1	1,128	D	965	C	1,863	F	1,364	D
Shaw Avenue									
w/o SR 99 SB Ramps	3	2,280	D	1,776	D	2,425	D	2,849	F
SR 99 SB Ramps to SR 99 NB Ramps	3	2,185	D	2,642	F	2,505	E	3,488	F
SR 99 NB Ramps to Golden State	3	1,760	D	2,182	D	1,793	D	3,327	F
Golden State to Brawley	3	2,482	E	1,949	D	3,131	F	3,524	F
Brawley to Marks	3	2,164	D	2,008	D	2,740	F	2,694	F
Marks to West	3	2,134	D	1,706	C	2,261	D	2,137	D
e/o West	3	1,898	D	1,703	C	1,853	D	1,733	C
Grantland Avenue									
Parkway to Bullard	2	501	C	97	C	460	C	527	C
Bullard to Barstow	2	91	C	216	C	212	C	431	C
Palm Avenue									
Herndon to Bullard	2	1,476	D	1,769	F	1,553	D	1,641	E
Dante Avenue									
Polk to Bullard	1	272	C	333	C	692	D	415	C
Carnegie Avenue									
Golden State to Bullard	2	1,272	D	959	C	1,707	E	1,562	D
Ashlan Avenue									
SR 99 SB Ramps to SR 99 NB Ramps	2	2,199	F	1,129	D	1,981	F	2,199	F

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* , for State Two-Way Arterials (Class II) & Non-State Roadways.

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact

Roadway Level of Service Analysis per General Plan Policy

Per the City's General Plan Transportation Policy B-3:

> *Development projects that are consistent with plans and policies but that could affect conditions on major street segments predicted by the General Plan EIR traffic analysis to perform at an ADT LOS "F" shall not cause further substantial degradation of conditions on those segments before 2025 without completing a traffic and transportation evaluation. This evaluation will be used to determine appropriate project-specific design measures or street/transportation improvements that will contribute to achieving and maintaining a LOS equivalent to that anticipated by the General Plan. Further substantial degradation is defined as an increase in the peak hour vehicle/capacity (v/c) ratio of 0.15 or greater for roadway segments whose v/c ratio is estimated to be 1.00 or higher in 2025 by the General Plan EIR traffic analysis.*

Tables 9-45A and 9-45B summarize the General Plan roadway level of service analysis for the 2025 General Plan and 2025 General Plan plus General Plan Amendment (i.e., El Paseo Master Plan). According to the tables, the following roadway segments would be inconsistent with the General Plan with the implementation of the proposed General Plan Amendment:

- Herndon Avenue
  - Parkway Drive to SR 99 southbound ramps: WB p.m. peak hour, 0.82 V/C to 2.47 V/C
  - SR 99 southbound ramps to SR 99 northbound ramps: WB p.m. peak hour, 0.77 V/C to 2.47 V/C
  - SR 99 northbound ramps to Golden State Boulevard: EB a.m. peak hour, 0.95 V/C to 1.54 V/C; EB p.m. peak hour, 0.91 V/C to 1.98 V/C; WB p.m. peak hour, 0.73 V/C to 2.46 V/C
  - Hayes Avenue to Veterans Boulevard: WB p.m. peak hour, 0.23 V/C to 1.85 V/C
  - Polk Avenue to Milburn Avenue: EB p.m. peak hour, 0.91 V/C to 1.13 V/C
- Parkway Drive
  - Herndon Avenue to Grantland Avenue: SB p.m. peak hour, 0.36 V/C to 1.09 V/C
- Veterans Boulevard
  - Golden State Boulevard to Bryan Avenue: EB a.m. peak hour, 0.83 V/C to 1.17 V/C; EB p.m. peak hour, 0.98 V/C to 1.41 V/C; WB p.m. peak hour, 1.35 V/C to 1.71 V/C
  - SR 99 northbound ramps to Golden State Boulevard: EB a.m. peak hour, 0.99 V/C to 1.38 V/C; EB p.m. peak hour, 1.12 V/C to 1.58 V/C; WB p.m. peak hour, 1.69 V/C to 2.10 V/C
  - SR 99 southbound ramps to SR 99 northbound ramps: EB a.m. peak hour, 0.89 V/C to 1.11 V/C; EB p.m. peak hour, 0.83 V/C to 1.07 V/C; WB p.m. peak hour, 1.56 V/C to 1.93 V/C
  - Bryan Avenue (west) to SR 99 southbound ramps: EB a.m. peak hour, 1.03 V/C to 1.18 V/C
- Sierra Avenue
  - Bryan Avenue to Polk Avenue: SB a.m. peak hour, 0.40 V/C to 1.69 V/C; NB p.m. peak hour, 0.33 V/C to 1.26 V/C; SB p.m. peak hour, 0.81 V/C to 2.77 V/C

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9-45A 2025 General Plan 2025 plus GPA AM Peak Hour Roadway Segment Level of Service Summary

	NB/EB Direction						SB/WB Direction					
		2025		2025 plus Master Plan				2025		2025 plus Master Plan		
Roadway Segment	No. of Lanes	NB/EB Volume	NB/EB V/C	NB/EB Volume	NB/EB V/C	EB/NB Impact	No. of Lanes	SB/WB Volume	SB/WB V/C	SB/WB Volume	SB/WB V/C	SB/WB Impact
Herndon Avenue												
Parkway to SR 99 SB Ramps	1	182		260			1	518		681		
SR 99 SB Ramps to SR 99 NB Ramps	1	295		260			1	508		646*		
SR 99 NB Ramps to Golden State	1	807	0.95	1,305	1.54	0.59	1	498		677		
Golden State to Weber	3	993		1,684			3	1,035		1,134		
Weber to Bryan	3	935		1,038			3	1,252		1,314		
Bryan to Hayes	3	741		768			3	987		1,046		
Hayes to Veterans	3	787		696			3	937		1,002		
Veterans to Polk	3	2,074		2,072			3	1,954		2,282		
Polk to Milburn	3	2,560	0.94	2,571	0.95	0.00	3	2,235	0.82	2,652	0.98	0.15
Milburn to Blythe	3	2,438		2,404			3	1,768		2,076		
Blythe to Brawley	3	2,675	0.99	2,716	1.00	0.02	3	1,835		2,193		
Brawley to Marks	3	2,833	1.05	2,668	0.98	-0.06	3	1,964		2,144		
Marks to West	3	2,962	1.09	2,660	0.98	-0.11	3	2,029		2,238		
West to Palm	3	3,087	1.14	2,768	1.02	-0.12	3	2,186		2,294		
Palm to Blackstone	3	2,366		2,173			3	1,672		1,930		
e/o Blackstone	3	2,153		1,942			3	2,068		2,277		
Parkway Drive												
Herndon and Grantland	2	102		220			2	528		666		
Bryan Avenue												
Herndon to Palo Alto	2	483		629			2	505		659		
Palo Alto to Veterans	2	127		571			2	489		861		
Veterans to Sierra	2	216		515			2	182		1,080		
Sierra and Carnegie	2	226		410			2	229		520		
Carnegie to Dante	2	703		1,208			2	649		986		
Palo Alto Avenue												
Bryan to Hayes	1	393		419			1	356		503		
Hayes Avenue												
Herndon to Palo Alto	1	429		340			1	506		514		
Palo Alto to Veterans	1	520		529			1	498		384		
Veterans Avenue												
Hayes to Herndon	3	1,287		1,376			3	1,034		1,281		
Bryan to Hayes	3	1,874		1,697			3	1,677		1,645		
Golden State to Bryan	3	2,022	0.83	2,871	1.17	0.35	3	2,224		2,316		
SR 99 NB Ramps to GS	3	2,428	0.99	3,372	1.38	0.39	3	2,429	0.99	2,475	1.01	0.02
SR 99 SB Ramps to SR 99 NB Ramps	3	2,174		2,710			3	2,296		2,605		
Bryan(2) to SR 99 SB Ramps	3	2,516	1.03	2,899	1.18	0.16	3	1,423		1,532		
Sierra Avenue												
Bryan to Polk	1	285		343			1	325	0.40	1,368	1.69	1.29
Polk Avenue												
Herndon to Sierra	1	477		587			1	406		393		
Golden State Boulevard												
Herndon to Veterans	1	189		301			1	862		1,001		
Veterans to Carnegie	1	480		733			1	749		1,039		
Carnegie to Shaw	1	443		934			1	629		839		
Shaw to Ashlan	1	982		1,128			1	593		965		
Shaw Avenue												
w/o SR 99 SB Ramps	3	2,439		2,280			3	1,654		1,776		
SR 99 SB Ramps to SR 99 NB Ramps	3	2,302		2,185			3	2,441		2,642		
SR 99 NB Ramps to Golden State	3	1,844		1,760			3	2,028		2,182		
Golden State to Brawley	3	2,605	1.01	2,482	0.96	-0.05	3	1,653		1,949		
Brawley to Marks	3	2,266		2,164			3	1,860		2,008		
Marks to West	3	2,378		2,134			3	1,605		1,706		
e/o West	3	2,207		1,898			3	1,596		1,703		
Grantland Avenue												
Parkway to Bullard	2	294		501			2	82		97		
Bullard to Barstow	2	55		91			2	201		216		
Palm Avenue												
Herndon to Bullard	2	1,384		1,476			2	1,687	0.98	1,769	1.03	0.05
Dante Avenue												
Polk to Bullard	1	257		272			1	255		333		
Carnegie Avenue												
Golden State to Bullard	2	668		1,272			2	695		959		
Ashlan Avenue												
SR 99 SB Ramps to SR 99 NB Ramps	2	1,787		2,199			2	1,083		1,129*		

Notes:

* Caltrans facility impact

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact (v/c ≥ 0.15 per the City of Fresno General Plan Transportation Policy B-3)

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9-45B 2025 General Plan 2025 plus GPA PM Peak Hour Roadway Segment Level of Service Summary

	NB/EB Direction						SB/WB Direction					
		2025		2025 plus Master Plan				2025		2025 plus Master Plan		
Roadway Segment	No. of Lanes	NB/EB Volume	NB/EB V/C	NB/EB Volume	NB/EB V/C	EB/NB Impact	No. of Lanes	SB/WB Volume	SB/WB V/C	SB/WB Volume	SB/WB V/C	SB/WB Impact
Herndon Avenue												
Parkway to SR 99 SB Ramps	1	124		326			1	700	0.82	2,101	2.47	1.65
SR 99 SB Ramps to SR 99 NB Ramps	1	348		326			1	657		2,101		
SR 99 NB Ramps to Golden State	1	775	0.91	1,683	1.98	1.07	1	622	0.73	2,095	2.46	1.73
Golden State to Weber	3	1,065		2,114			3	889		2,189		
Weber to Bryan	3	974		1,214			3	867		1,266		
Bryan to Hayes	3	659		818			3	573		632		
Hayes to Veterans	3	676		935			3	635	0.23	5,000	1.85	1.61
Veterans to Polk	3	1,924		2,409			3	2,143		2,341		
Polk to Milburn	3	2,458	0.91	3,056	1.13	0.22	3	2,728	1.01	2,897	1.07	0.06
Milburn to Blythe	3	2,045		2,310			3	2,394		2,531		
Blythe to Brawley	3	2,233	0.82	2,602	0.96	0.14	3	2,706	1.00	2,848	1.05	0.05
Brawley to Marks	3	2,333		2,534			3	2,850	1.05	2,911	1.07	0.02
Marks to West	3	2,213		2,322			3	2,769	1.02	2,869	1.06	0.04
West to Palm	3	2,349		2,447			3	3,043	1.12	3,235	1.19	0.07
Palm to Blackstone	3	2,304		2,123			3	2,291		2,161		
e/o Blackstone	3	2,235		2,101			3	2,432		2,323		
Parkway Drive												
Herndon and Grantland	2	57		282			2	625	0.36	1,877	1.09	0.73
Bryan Avenue												
Herndon to Palo Alto	2	307		1,086			2	432		905		
Palo Alto to Veterans	2	332		1,253			2	335		1,509		
Veterans to Sierra	2	440		1,470			2	384		902		
Sierra and Carnegie	2	241		686			2	176		697		
Carnegie to Dante	2	881		1,064			2	1,225		1,433		
Palo Alto Avenue												
Bryan to Hayes	1	179		398			1	71		361		
Hayes Avenue												
Herndon to Palo Alto	1	476		572			1	517		533		
Palo Alto to Veterans	1	526		687			1	551		557		
Veterans Avenue												
Hayes to Herndon	3	1,262		1,474			3	1,512		1,841		
Bryan to Hayes	3	2,035		1,908			3	2,227		2,199		
Golden State to Bryan	3	2,389	0.98	3,445	1.41	0.43	3	3,314	1.35	4,197	1.71	0.36
SR 99 NB Ramps to GS	3	2,739	1.12	3,862	1.58	0.46	3	4,134	1.69	5,156	2.10	0.42
SR 99 SB Ramps to SR 99 NB Ramps	3	2,041		2,623			3	3,825		4,722		
Bryan(2) to SR 99 SB Ramps	3	2,356	0.96	2,681	1.09	0.13	3	2,894	1.18	3,183	1.30	0.12
Sierra Avenue												
Bryan to Polk	1	267	0.33	1,017	1.26	0.93	1	657	0.81	2,242	2.77	1.96
Polk Avenue												
Herndon to Sierra	1	497	0.61	974	1.20	0.59	1	445	0.55	850	1.05	0.50
Golden State Boulevard												
Herndon to Veterans	1	439		1,188			1	745		1,216		
Veterans to Carnegie	1	1,175		1,508			1	781		1,206		
Carnegie to Shaw	1	1,185	1.46	1,701	2.10	0.64	1	881		1,343		
Shaw to Ashlan	1	1,740	2.15	1,863	2.30	0.15	1	773		1,364		
Shaw Avenue												
w/o SR 99 SB Ramps	3	2,095		2,425			3	2,625	1.07	2,849	1.16	0.09
SR 99 SB Ramps to SR 99 NB Ramps	3	2,098		2,505			3	3,372		3,488		
SR 99 NB Ramps to Golden State	3	1,634		1,793			3	3,115	1.27	3,327	1.36	0.09
Golden State to Brawley	3	2,697	1.05	3,131	1.21	0.17	3	3,248	1.33	3,524	1.44	0.11
Brawley to Marks	3	2,474	0.96	2,740	1.06	0.10	3	2,713	1.11	2,694	1.10	-0.01
Marks to West	3	2,079		2,261			3	2,141		2,137		
e/o West	3	1,823		1,853			3	1,884		1,733		
Grantland Avenue												
Parkway to Bullard	2	160		460			2	142		527		
Bullard to Barstow	2	30		212			2	85		431		
Palm Avenue												
Herndon to Bullard	2	1,499		1,553			2	1,590	0.92	1,641	0.95	0.03
Dante Avenue												
Polk to Bullard	1	272		692			1	291		415		
Carnegie Avenue												
Golden State to Bullard	2	1,266		1,707			2	892		1,562		
Ashlan Avenue												
SR 99 SB Ramps to SR 99 NB Ramps	2	1,816		1,981			2	1,797		2,199		

Notes:

* Caltrans facility impact

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact (v/c ≥ 0.15 per the City of Fresno General Plan Transportation Policy B-3)

- Polk Avenue
  - Herndon Avenue to Sierra Avenue: NB p.m. peak hour, 0.61 V/C to 1.20 V/C; SB p.m. peak hour, 0.55 V/C to 1.05 V/C
- Golden State Boulevard
  - Carnegie Avenue to Shaw Avenue: NB p.m. peak hour, 1.46 V/C to 2.10 V/C
  - Shaw Avenue to Ashlan Avenue: NB p.m. peak hour, 2.15 V/C to 2.30 V/C
- Shaw Avenue
  - SR 99 southbound ramps to SR 99 northbound ramps: EB p.m. peak hour, 0.86 V/C to 1.02 V/C
  - Golden State Boulevard to Brawley Avenue: EB p.m. peak hour, 1.05 V/C to 1.21 V/C
- Ashlan Avenue
  - SR 99 southbound ramps to SR 99 northbound ramps: EB a.m. peak hour, 1.04 V/C to 1.28 V/C; WB p.m. peak hour, 1.04 V/C to 1.28 V/C

Freeway Level of Service Analyses

Buildout 2025 plus Master Plan freeway segment traffic volume forecasts were post-processed by DKS using the Fresno COG 2025 travel model.

Mainline Levels of Service

Table 9-46 provides the Buildout 2025 plus Master Plan freeway level of service summary. As this table indicates, the addition of Master Plan trips to SR 99 would create a significant impact to the following segments:

- SR 99 northbound between Ashlan Avenue and Dakota Avenue (LOS C to LOS D in the a.m. peak hour)
- SR 99 southbound between Herndon Avenue and Veterans Boulevard (LOS C to LOS D in the a.m. peak hour)

Weaving Section Levels of Service

The SR 99 mainline and ramp entry and exit volumes for the buildout 2025 plus Master Plan scenario were analyzed using Figure 504.7A from the HDM. Results from this analysis are shown in Table 9-47. In addition, the table also shows a comparison with the buildout 2025 baseline scenario, as well as indicates the LOS for mitigation measures (if needed). Detailed calculations on the Leisch nomographs are provided in Appendix F.

Table 9-46 – Buildout 2025 plus Master Plan Freeway Segment Level of Service Summary

Freeway	From	To	Density	LOS
Northbound AM				
SR 99	Herndon Avenue	Avenue 7	22.0	C
	Veterans Boulevard	Herndon Avenue	25.4	C
	Shaw Avenue	Veterans Boulevard	22.0	C
	Ashlan Avenue	Shaw Avenue	23.6	C
	Dakota Avenue	Ashlan Avenue	28.6	D
Southbound AM				
SR 99	Avenue 7	Herndon Avenue	29.8	D
	Herndon Avenue	Veterans Boulevard	26.8	D
	Veterans Boulevard	Shaw Avenue	25.2	C
	Shaw Avenue	Ashlan Avenue	24.7	C
	Ashlan Avenue	Dakota Avenue	29.4	D
Northbound PM				
SR 99	Herndon Avenue	Avenue 7	40.1	E
	Veterans Boulevard	Herndon Avenue	>45.0	F
	Shaw Avenue	Veterans Boulevard	35.6	E
	Ashlan Avenue	Shaw Avenue	33.9	D
	Dakota Avenue	Ashlan Avenue	39.8	E
Southbound PM				
SR 99	Avenue 7	Herndon Avenue	31.8	D
	Herndon Avenue	Veterans Boulevard	43.8	E
	Veterans Boulevard	Shaw Avenue	39.1	E
	Shaw Avenue	Ashlan Avenue	37.3	E
	Ashlan Avenue	Dakota Avenue	>45.0	F

Table 9-47 – Buildout 2025 plus Master Plan Freeway Weaving Level of Service Summary

	2025 Baseline			2025 + Master Plan							
		LOS			LOS without Mitigation				LOS with Mitigation		
Segment	No. of Lanes	AM	PM	No. of Lanes	AM	Significant Impact	PM	Significant Impact	No. of Lanes	AM	PM
SR 99 northbound											
Shaw Ave to Veterans Blvd	3	D	F	3	E	yes	F	no	4 (w/ aux)	C	E
Veterans Blvd to Herndon Ave	3	C	D	3	D	yes	F	yes	4 (w/ aux)	C	D
SR 99 southbound											
Herndon Ave to Veterans Blvd	3	C	E	3	D	yes	F	yes	4 (w/ aux)	C	D
Veterans Blvd to Shaw Ave	3	E	F	3	F	yes	F	no	5	D	E

As shown in the table, addition of the Master Plan to SR 99 would create new significant impacts at the following weaving sections:

- SR 99 northbound: Shaw Avenue to Veterans Boulevard (LOS D to E in a.m.)
- SR 99 northbound: Veterans Boulevard to Herndon Avenue (LOS C to D in a.m.; LOS D to F in p.m.)
- SR 99 southbound: Herndon Avenue to Veterans Boulevard (LOS C to D in a.m.; LOS E to F in p.m.)
- SR 99 southbound: Veterans Boulevard to Shaw Avenue (LOS E to F in a.m.)

At-Grade Railroad Crossing Analysis

Using the HCM "Back of Queue" queuing methodology to analyze the vehicular queuing, Table 9-48 presents the at-grade railroad crossing analysis summary for the Buildout 2025 plus Master Plan condition. The HCM calculation sheets are provided in Appendix H.

Table 9-48 – Buildout 2025 plus Master Plan At-Grade Railroad Crossing Analysis Summary

Crossing Location	Peak Hour [1]	Rail Crossing Time (seconds) [2]	Vehicular Queue (feet) [3]		Impact to Adjacent Major Intersection [4]				Significant Project Impact?	
			e/o tracks	w/o tracks	e/o tracks		w/o tracks		e/o tracks	w/o tracks
Herndon Ave	AM	205	*Grade Separated Underpass Improvement*							
	PM	156								
Carnegie Ave	AM	243	1,598	3,227	Yes	720 ft to Bullard Ave	Yes	75 ft to Golden State Blvd	No	No
	PM	110	1,193	2,278	Yes		Yes		Yes	No
Shaw Ave	AM	300	*Grade Separated Underpass Improvement*							
	PM	235								

[1] - Based on observed train crossings in 2007 within the AM and PM peak commute hours.

[2] - Based on time that train crossing gate arms go down, to time gate arms go up.

[3] - Vehicle queue determined using *Highway Capacity Manual* (HCM) "Back of Queue Equation".

[4] – Impact based on whether vehicular queue would extend to an adjacent major intersection. For Herndon and Shaw Avenues the major intersection west of tracks will be the northbound ramp intersections with SR 99, rather than the closely spaced intersections with Golden State Blvd/Herndon Ave (125 ft) and Golden State Blvd/Shaw Ave (50 ft).

According to the table, addition of the Master Plan would cause new queuing impacts (i.e., new impacts to adjacent major intersections from the baseline condition) at the Carnegie Avenue crossing, specifically to the Bullard Avenue/Carnegie Avenue intersection during the p.m. peak hour.

Mitigation Measures

City of Fresno Traffic Signal Mitigation Impact Fee and Fresno Major Street Impact Fee

TRAF-33 All Phases of the Master Plan shall pay their Traffic Signal Mitigation Impact (TSMI) Fee (based on a cost per average daily trip) at the time of building permit. This fee is reviewed and updated yearly and the applicant pays the TSMI fee in place at the time of the building permit. Based on the current TSMI fee of $45.98 per ADT and the Master Plan ADT of

95,614 ADT, the current TSMI fee for the Master Plan would be $4,396,331.72. This amount is broken-down as follows:

Phase 1: $1,742,917.88
Phase 2A: $341,217.58
Phase 2B: $1,466,624.06
Phase 3: $501,549.84
Phase 4: $276,615.68
Phase 5: $67,406.68

This TSMI fee is credited against signal installation and Intelligent Transportation System (ITS) improvements (constructed at their ultimate location) anticipated to buildout of the 2025 General Plan Circulation Element and included in the *Nexus Study* for the TSMI fee. Project specific impacts that are not consistent with the 2025 General Plan, Public Works P69 standards, and/or already incorporated into the TSMI fees infrastructure costs are not reimbursable unless the City Engineer and City Traffic Engineer include the new traffic signal and/or ITS infrastructure in the next update, and the applicant agrees to pay the new calculated TSMI fee that includes the new infrastructure.

TRAF-34 All Phases of the Master Plan shall pay its Fresno Major Street Impact (FMSI) Fee which will be determined at time of building permit. Effective July 1, 2008, the appropriate FMSI fees would contain the City Wide Street Impact Fee plus the New Growth Area Major Street Impact Fee. For commercial retail developments such as Phase 1, the City Wide Street Impact Fee is calculated to be $3,823,047 (at $16,131 per acre X 237 acres); while the New Growth Area Major Street Impact Fee is calculated at $8,886,315 (at $37,495 per acre X 237 acres). Therefore, the Master Plan shall pay the total FMSI Fee of $12,709,362 (at $53,626 per acre X 237 acres). This FMSI fee is creditable towards major street roadway improvements included in the *Nexus Study* for the FMSI fee.

Significant Impacts at Intersections

Based on the buildout 2025 plus Master Plan traffic analysis discussed above, the proposed Master Plan would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or greater at LOS E or F) in the weekday a.m. and/or p.m. peak hours to the study intersections. The following are improvements required to mitigate these impacts:

TRAF-35 Prior to obtaining a Certificate of Occupancy, the Master Plan shall construct the following traffic improvements. The following are improvements for the significantly impacted study intersections in the Buildout 2025 plus Master Plan condition:

SR 99 southbound off-ramp/Herndon Avenue: Remove the SR 99 southbound off-ramp to Grantland Avenue as part of the signalization of Parkway Drive and Herndon Avenue.

Polk Avenue/Herndon Avenue: Construct a dedicated northbound right turn lane per the City's standard plan. In addition, perform a traffic signal modification to provide right turn overlap phasing for the northbound right turn movement. This traffic signal is included in the TSMI Fee and can be credited/reimbursed. While this measure would improve the intersection to 2025 baseline conditions, it would not be able to improve the intersection to the General Plan LOS D standard. Therefore, the project would create a significant unavoidable

impact at this location; however, *this segment of Herndon Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Palm Avenue/Herndon Avenue: This signalized intersection would be built out to its ultimate configuration and there is limited- to no available right-of-way for additional improvements. As such, no feasible mitigation can be recommended. Therefore, the project would create a significant unavoidable impact at this location; however, *this segment of Herndon Avenue has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Hayes Avenue/Palo Alto Avenue: Construct a dedicated northbound left turn lane; separate eastbound left- and right turn lanes, and a second southbound through lane; and keep the intersection as an all-way stop-controlled intersection to minimize cut-through traffic on Palo Alto Avenue.

Bryan Avenue/Veterans Boulevard: This signalized intersection would be built out to its ultimate configuration and there is limited- to no available right-of-way for additional improvements. As such, no feasible mitigation can be recommended. Therefore, the project would create a significant unavoidable impact at this location; however, *this segment of Veterans Boulevard has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Golden State Boulevard/Veterans Boulevard: This signalized intersection would be built out to its ultimate configuration and there is limited- to no available right-of-way for additional improvements. As such, no feasible mitigation can be recommended. Therefore, the project would create a significant unavoidable impact at this location; however, *this segment of Veterans Boulevard has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

SR 99 northbound ramps/Veterans Boulevard: This signalized intersection would be built out to its ultimate configuration and there is limited- to no available right-of-way for additional improvements. As such, no feasible mitigation can be recommended. Therefore, the project would create a significant unavoidable impact at this location; however, *this segment of Veterans Boulevard has already been identified in the General Plan MEIR to operate with unsatisfactory LOS in the 2025 buildout condition*.

Bullard Avenue/Carnegie Avenue: Perform a traffic signal modification to provide right turn overlap phasing for the eastbound right turn movement. This traffic signal is included in the TSMI Fee and can be credited/reimbursed. While this measure would improve the intersection to 2025 baseline conditions, it would not be able to improve the intersection to the General Plan LOS D standard. Therefore, the Master Plan would create a significant unavoidable impact at this location in the p.m. peak hour.

Golden State Boulevard/Carnegie Avenue: Perform a traffic signal modification to provide right turn overlap phasing for the northbound and westbound right turn movements. In addition, construct a dedicated eastbound left turn lane. This traffic signal is not included in the TSMI Fee. While this measure would improve the intersection to 2025 baseline conditions, it would not be able to improve the intersection to the General Plan LOS D standard. Therefore, the Master Plan would create a significant unavoidable impact at this location in the p.m. peak hour.

SR 99 northbound Ramps/Shaw Avenue: This signalized intersection would be built out to its ultimate configuration and there is limited- to no available right-of-way for additional improvements. As such, no feasible mitigation can be recommended. The Master Plan would create a significant unavoidable impact at this location in the p.m. peak hour.

Golden State Boulevard/Shaw Avenue: Perform a traffic signal modification to provide right turn overlap phasing for the northbound right turn movement. This traffic signal is included in the TSMI Fee and can be credited/reimbursed. While this measure would improve the intersection to 2025 baseline conditions, it would not be able to improve the intersection to the General Plan LOS D standard. Therefore, the Master Plan would create a significant unavoidable impact at this location in the p.m. peak hour.

Significant Intersection Queuing Impacts

Based on the Buildout 2025 plus Master Plan traffic analysis discussed above, the following study intersections are forecast to have significant impacts to lane storage queues when compared to the 2025 baseline condition. The following are improvements required to mitigate these impacts:

TRAF-36 Prior to obtaining a Certificate of Occupancy, all Phases of the Master Plan shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study intersection queues in the Buildout 2025 plus Master Plan condition:

Veterans Boulevard/Herndon Avenue: This intersection will be constructed to its ultimate configuration with 250 foot dual left turn lanes at all approaches. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Based on the queuing analysis, the westbound left turn lane would require an additional 280 feet for a total of 530 feet.

Polk Avenue/Herndon Avenue: This intersection will be constructed to its ultimate configuration with 250 foot dual left turn lanes at all approaches. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Based on the queuing analysis, the northbound right turn lane would require an additional 390 feet for a total of 540 feet; and the southbound left turn lane would require 50 feet for a total of 250 feet. The southbound left turn lane would be reimbursable/credited towards the FMSI fee.

Milburn Avenue/Herndon Avenue: The southbound right turn lane would need to be extended by 540 feet to 640 feet; and the eastbound left turn lane would need to be extended by 45 feet to 275 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Brawley Avenue/Herndon Avenue: The northbound left turn lane would need to be extended to by 35 feet to 285 feet; and the northbound right turn lane would need to be extended by 30 feet to 180 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Marks Avenue/Herndon Avenue: The southbound right turn lane would need to be extended by 315 feet to 475 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Palm Avenue/Herndon Avenue: This intersection would have a significant unavoidable queuing impact to the existing 230 foot long southbound right turn pocket with a 95th percentile queue of 1,434 feet (shortfall of 1,204 feet); as well as the existing 245 foot long eastbound left turn pocket with a 95th percentile queue of 638 feet (shortfall of 393 feet).

Blackstone Avenue/Herndon Avenue: The southbound right turn lane would need to be extended by 70 feet to 160 feet; and the westbound right turn lane would need to be extended by 45 feet to 145 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Hayes Avenue/Veterans Boulevard: The eastbound left turn lane would need to be extended by 380 feet to 530 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Bryan Avenue/Veterans Boulevard: The eastbound left turn lane would need to be extended by 270 feet to 520 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Golden State Boulevard/Veterans Boulevard: This intersection would have a significant unavoidable queuing impact to the currently designed 310 foot long northbound left turn pocket with a 95th percentile queue of 660 feet (shortfall of 350 feet); the currently designed 300 foot long southbound left turn pocket with a 95th percentile queue of 563 feet (shortfall of 263 feet); and the currently designed 380 foot eastbound left turn pocket with a 95th percentile queue of 1,012 feet (shortfall of 632 feet).

Bullard Avenue/Carnegie Avenue: This intersection would have a significant unavoidable queuing impact to the northbound left turn pocket with a 95th percentile queue of 1,173 feet; the southbound right turn pocket with a 95th percentile queue of 508 feet; and the eastbound left turn pocket with a 95th percentile queue of 1,035 feet.

Golden State Boulevard/Carnegie Avenue: This intersection would have a significant unavoidable queuing impact to the northbound right turn pocket with a 95th percentile queue of 968 feet; the southbound left turn pocket with a 95th percentile queue of 864 feet; and the westbound left turn pocket with a 95th percentile queue of 501 feet.

Palm Avenue/Bullard Avenue: This intersection would have a significant unavoidable queuing impact to the northbound left turn pocket with a 95th percentile queue of 596 feet; the southbound right turn pocket with a 95th percentile queue of 867 feet; the eastbound left turn pocket with a 95th percentile queue of 298 feet; and the westbound left turn pocket with a 95th percentile queue of 1,101 feet.

Bryan Avenue (west)/Veterans Boulevard: The southbound left turn lane would need to be extended by 230 feet to 480 feet; and the westbound right turn lane would need to be extended by 360 feet to 510 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Golden State Boulevard/Shaw Avenue: The northbound right turn lane would need to be extended by 1,010 feet to 1,150 feet; the southbound left turn lane would need to be extended by 315 feet to 480 feet; the westbound left turn lane would need to be extended to by 175 feet to 365 feet; and the westbound right turn lane would need to be extended by 240 feet to 430 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Brawley Avenue/Shaw Avenue: The southbound left turn lane would need to be extended by 100 feet to 320 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

Marks Avenue/Shaw Avenue: The northbound left turn lane would need to be extended by 165 feet to 355 feet; and the southbound right turn lane would need to be extended by 120 feet to 390 feet. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee.

SR 99 southbound ramps/Ashlan Avenue: This intersection would have a significant unavoidable queuing impact to the northbound right turn pocket with a 95th percentile queue of 553 feet; the southbound left turn pocket with a 95th percentile queue of 642 feet; and the westbound left turn pocket with a 95th percentile queue of 850 feet.

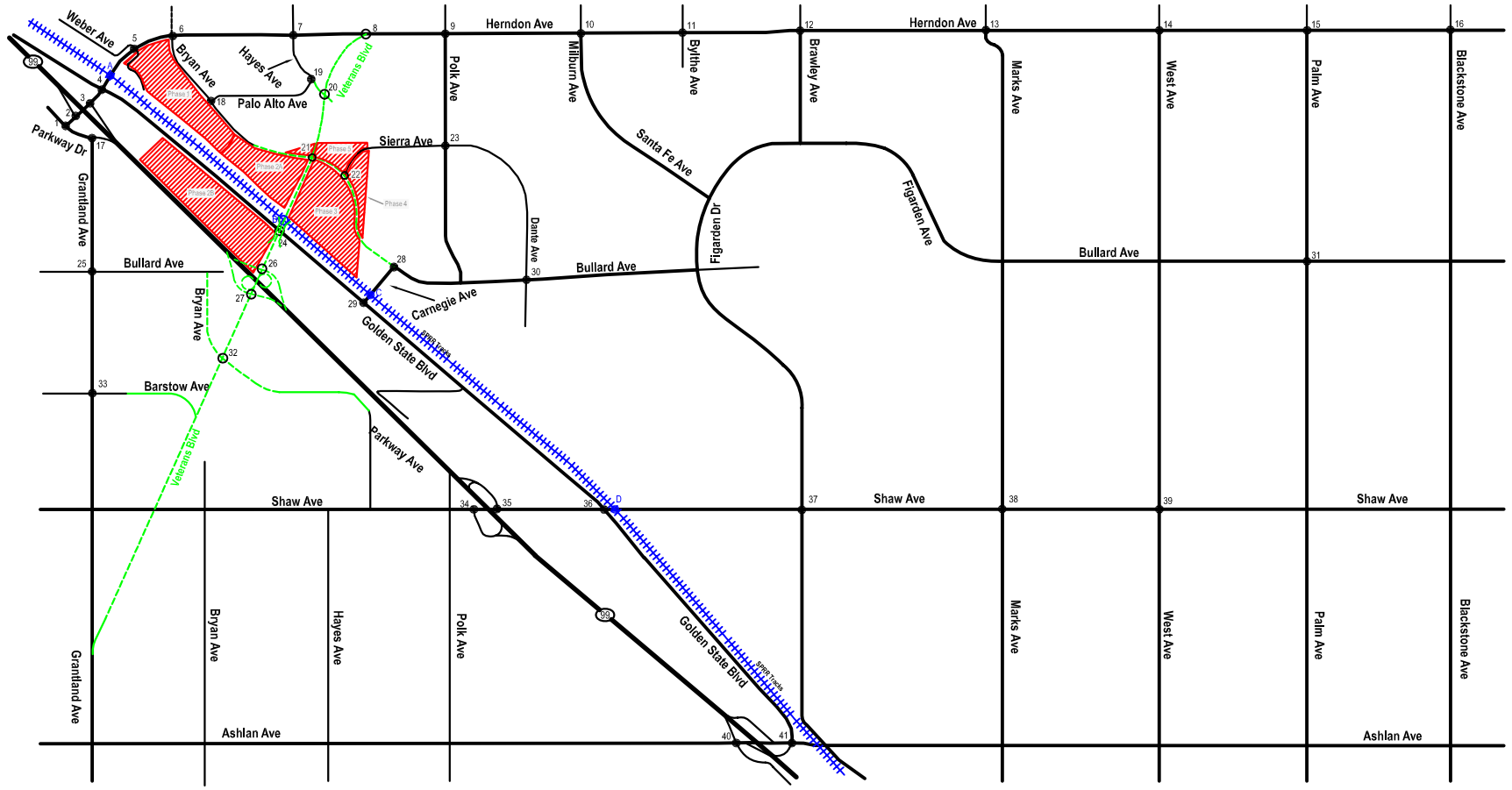
SR 99 northbound ramps/Ashlan Avenue: This intersection would have a significant unavoidable queuing impact to the northbound left turn pocket with a 95th percentile queue of 374 feet; the northbound right turn pocket with a 95th percentile queue of 625 feet; the southbound right turn pocket with a 95th percentile queue 388 feet; the eastbound left turn pocket with a 95th percentile queue of 522 feet; and the westbound right turn pocket with a 95th percentile queue of 260 feet.

Figure 9-19 illustrates the mitigation measures needed for the significant traffic impacts created by the addition of Phase 1 traffic to the 2010 baseline condition. Table 9-49 shows the improved levels of service with the implementation of the mitigation measures.

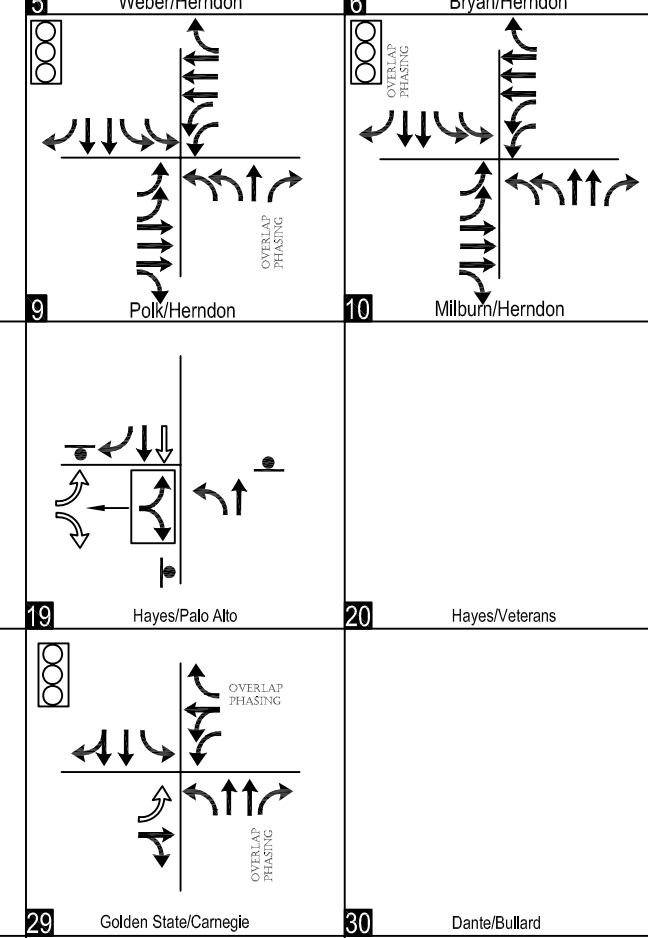
Significant Roadway Segment Impacts (analyzed per City TIS Guidelines)

Based on the Buildout 2025 plus Master Plan traffic analysis discussed above, the following study roadway segments are forecast to have significant impacts with addition of Master Plan traffic. The following are improvements required to mitigate these impacts:

TRAF-37 Prior to obtaining a Certificate of Occupancy, all Phases of the Master Plan shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study roadway segments in the Buildout 2025 plus Master Plan condition:



1 Parkway/Herndon	2 SR-99 SB Ramps/Herndon	3 SR-99 NB Ramps/Herndon	4 Golden State/Herndon						
5 Weber/Herndon	6 Bryan/Herndon	7 Hayes/Herndon	8 Veterans/Herndon						
9 Polk/Herndon	10 Milburn/Herndon	11 Blythe/Herndon	12 Brawley/Herndon						
13 Marks/Herndon	14 West/Herndon	15 Palm/Herndon	16 Blackstone/Herndon	17 Grantland/Parkway-SR 99 SB On Ramp	18 Bryan/Palo Alto	19 Hayes/Palo Alto	20 Hayes/Veterans	21 Bryan/Veterans	22 Bryan/Sierra
23 Polk/Sierra	24 Golden State/Veterans	25 Grantland/Bullard	26 SR-99 NB Ramps/Veterans	27 SR-99 SB Ramps/Veterans	28 Bullard/Carnegie	29 Golden State/Carnegie	30 Dante/Bullard	31 Palm/Bullard	32 Bryan/Veterans
33 Grantland/Barstow	34 SR-99 SB Ramps/Shaw	35 SR-99 NB Ramps/Shaw	36 Golden State/Shaw	37 Brawley/Shaw	38 Marks/Shaw	39 West/Shaw	40 SR-99 SB Ramps/Ashlan	41 SR-99 NB Ramps/Ashlan	



No feasible mitigation

No feasible mitigation

LEGEND

- Project Site
- Study Intersection
- Existing Geometrics
- Mitigated Geometrics
- Traffic Signal
- Mitigated Traffic Signal
- Stop Control

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Figure 9-19
Buildout Year 2025 + Phases 1, 2, 3, 4, and 5 Mitigation Measures

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9-49 - Buildout Year 2025 + Master Plan Intersection Levels of Service with Mitigation Measures

		2025 + Master Plan Phases 1-5				With Mitigation			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	signal	13.0	B	9.4	A				
2 99 SB Ramps/Herndon	--	--	--	--	--				
3 99 NB Ramps/Herndon	signal	17.5	B	>80	F	*no feasible mitigaiton*			
4 Golden State/Herndon	signal	25.3	C	47.8	D				
5 Weber/Herndon	unsignalized	11.2	B	13.1	B				
6 Bryan/Herndon	signal	26.9	C	25.9	C				
7 Hayes/Herndon	signal	20.9	C	21.1	C				
8 Veterans/Herndon	signal	8.1	A	14.9	B				
9 Polk/Herndon	signal	34.1	C	69.3	E	23.1	C	61.1	E
10 Milburn/Herndon	signal	54.5	D	62.5	E	37.1	D	47.2	D
11 Blythe/Herndon	signal	23.3	C	14.0	B				
12 Brawley/Herndon	signal	36.0	D	42.1	D				
13 Marks/Herndon	signal	30.5	C	35.4	D				
14 West/Herndon	signal	27.3	C	27.5	C				
15 Palm/Herndon	signal	49.6	D	>80	F	*no feasible mitigaiton*			
16 Blackstone/Herndon	signal	32.6	C	36.6	D				
17 Grantland/Parkway	signal	15.5	B	8.7	A				
18 Bryan/Palo Alto	signal	19.3	B	49.0	D				
19 Hayes/Palo Alto	unsignalized	24.1	C	45.0	E	17.1	C	30.0	D
20 Veterans/Hayes	signal	13.1	B	26.4	C				
21 Veterans/Bryan	signal	33.3	C	>80	F	*no feasible mitigaiton*			
22 Bryan/Sierra	signal	5.8	A	10.6	B				
23 Polk/Sierra	signal	6.6	A	10.8	B				
24 Golden State/Veterans	signal	21.0	C	>80	F	*no feasible mitigaiton*			
25 Grantland/Bullard	signal	8.8	A	6.5	A				
26 99 NB Ramps/Veterans	signal	29.8	C	>80	F	*no feasible mitigaiton*			
27 99 SB Ramps/Veterans	signal	7.2	A	11.0	B				
28 Carnegie/Bullard	signal	26.1	C	>80	F	15.8	B	61.2	E
29 Golden State/Carnegie	signal	64.4	E	>80	F	41.5	D	75.8	E
30 Dante/Bullard	signal	7.5	A	6.7	A				
31 Palm/Bullard	signal	46.6	D	>80	F				
32 Veterans/Bryan	signal	35.2	D	47.9	D				
33 Grantland/Barstow	signal	6.8	A	7.7	A				
34 99 SB Ramps/Shaw	signal	10.7	B	25.8	C				
35 99 NB Ramps/Shaw	signal	42.0	D	>80	F	*no feasible mitigaiton*			
36 Golden State/Shaw	signal	52.0	D	>80	F	37.4	D	>80	F
37 Brawley/Shaw	signal	26.6	C	49.3	D				
38 Marks/Shaw	signal	31.4	C	76.2	E				
39 West/Shaw	signal	28.2	C	35.8	D				
40 99 SB Ramps/Ashlan	signal	33.7	C	53.2	D				
41 99 NB Ramps/Ashlan	signal	38.0	D	50.4	D				

Notes:

XXX Denotes delay that exceeds thresholds

XXX Denotes significant project impact

The Master Plan would be consistent with the roadway segment levels of service reported in the Master EIR for the 2025 General Plan for the following roadway segments. Therefore, these roadway segments would not create a significant impact to roadway levels of service as LOS E or F has already been accepted for these locations in the General Plan MEIR.

- Herndon Avenue: Parkway Drive to SR 99 southbound off-ramp (LOS D to F westbound in p.m.)
- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (LOS C to D westbound in a.m.; LOS D to F westbound in p.m.)
- Herndon Avenue: SR 99 northbound off-ramp to Golden State Boulevard (LOS D to F eastbound in both peak hours; LOS D to F westbound in p.m.)
- Herndon Avenue: Hayes Avenue to Veterans Boulevard (LOS C to F westbound in p.m.)
- Herndon Avenue: Polk Avenue to Milburn Avenue (LOS D to E both directions in a.m.; LOS D to F eastbound in p.m.)
- Herndon Avenue: Blythe Avenue to Brawley Avenue (LOS D to E eastbound in p.m.)
- Shaw Avenue: SR 99 southbound ramps to SR 99 northbound ramps (LOS D to F westbound in a.m.; LOS D to E eastbound in p.m.)
- Palm Avenue: Herndon Avenue to Bullard Avenue (LOS D to E southbound in p.m.)

However, the following significantly impacted roadway segments would be inconsistent with the results of the General Plan MEIR. Therefore, the Master Plan would create a significant and unavoidable impact at these impacted roadway segments (listed below) as these roadway segments were assumed to be built out to their General Plan designations.

- Parkway Drive: Herndon Avenue to Grantland Avenue (LOS C to F southbound in p.m.)
- Veterans Boulevard: Golden State Boulevard to Bryan Avenue (LOS D to F eastbound in both peak hours)
- Veterans Boulevard: SR 99 northbound ramps to Golden State Boulevard (LOS D to F eastbound in a.m.; LOS D to E westbound in p.m.)
- Veterans Boulevard: SR 99 southbound ramps to SR 99 northbound ramps (LOS D to F both directions in a.m.; LOS D to F eastbound in p.m.)
- Veterans Boulevard: Bryan Avenue (west) to SR 99 southbound ramps (LOS D to F eastbound in p.m.)
- Sierra Avenue: Bryan Avenue to Polk Avenue (LOS C to F westbound in a.m.; LOS C to F eastbound in p.m.; LOS D to F westbound in p.m.)
- Polk Avenue: Herndon Avenue to Sierra Avenue (LOS D to F northbound in a.m.; LOS C to F southbound in p.m.)
- Golden State Boulevard: Carnegie Avenue to Shaw Avenue (LOS D to E northbound in p.m.)

Significant Roadway Segment Impacts (analyzed per General Plan Policy)

Based on the General Plan 2025 plus General Plan Amendment roadway analysis discussed above, the following study roadway segments are forecast to have significant unavoidable impacts because implementation of the GPA would cause a significant increase in V/C (0.15 V/C or greater increase).

- Herndon Avenue, Parkway Drive to SR 99 southbound ramps
- Herndon Avenue, SR 99 southbound ramps to SR 99 northbound ramps
- Herndon Avenue, SR 99 northbound ramps to Golden State Boulevard
- Herndon Avenue, Hayes Avenue to Veterans Boulevard
- Herndon Avenue, Polk Avenue to Milburn Avenue
- Parkway Drive, Herndon Avenue to Grantland Avenue
- Veterans Boulevard, Golden State Boulevard to Bryan Avenue
- Veterans Boulevard, SR 99 northbound ramps to Bryan Avenue
- Veterans Boulevard, SR 99 southbound ramps to SR 99 northbound ramps
- Veterans Boulevard, Bryan Avenue (west) to SR 99 southbound ramps
- Sierra Avenue, Bryan Avenue to Polk Avenue
- Polk Avenue, Herndon Avenue to Sierra Avenue
- Golden State Boulevard, Carnegie Avenue to Shaw Avenue
- Golden State Boulevard, Shaw Avenue to Ashlan Avenue
- Shaw Avenue, SR 99 southbound ramps to SR 99 northbound ramps
- Ashlan Avenue, SR 99 southbound ramps to SR 99 northbound ramps

Significant Caltrans Facility Impacts

Based on the Buildout 2025 plus Master Plan traffic analysis discussed above, the following study area Caltrans facilities are forecast to have significant impacts with addition of Master Plan traffic. The following are improvements required to mitigate these impacts:

TRAF-38 Prior to obtaining a Certificate of Occupancy, the Master Plan shall pay their fair-share contribution towards improvements to Caltrans facilities noted below. The fair-share contribution shall be calculated per the February 2006 *Mutual Release and Settlement Agreement* between the City of Fresno and Caltrans District 6 (otherwise known as the "Interim Agreement"). This Interim Agreement provides guidance on the method for calculating a fair share to mitigate for impacts to State highways. Since the Master Plan will require a General Plan Amendment (GPA), and the GPA will increase trips over the existing use, the "Combined Formula" was used to calculate fair share. The Combined Formula is provided below:

P = (P1/F1) + (P2 – P1)/F2, where:

P = fair share percentage
P1 = the higher of the a.m. or p.m. peak hour project trips without GPA
P2 = the higher of the a.m. or p.m. peak hour project trips with GPA
F1 = total 2025 corresponding future peak hour traffic without project
F2 = total 2025 corresponding future peak hour traffic with project

Table 9-50 shows the calculated Combined Share costs for impacted Caltrans facilities. The following are improvements for the impacted State facilities in the 2010 plus Phase 1 condition. As noted, some of these facilities are also part of the City's TSMI and FMSI fee programs. For all other facilities, payment of the fair-share cost based on the Combined Share formula would mitigate project impacts.

Mitigation measures to the following Caltrans facilities have been discussed above, either in the measures for intersections, queuing, and/or roadway segments. For facilities not previously discussed, the needed mitigation measures are provided below.

- SR 99 northbound off-ramp/Herndon Avenue (impacts to intersection LOS discussed above)
- SR 99 northbound ramps/Veterans Boulevard (impacts to intersection LOS discussed above)
- SR 99 northbound ramps/Shaw Avenue (impacts to intersection LOS discussed above)
- SR 99 southbound ramps/Ashlan Avenue (impacts to queuing discussed above)
- SR 99 northbound ramps/Ashlan Avenue (impacts to queuing discussed above)
- Herndon Avenue: SR 99 southbound off-ramp to SR 99 northbound off-ramp (impacts to roadway segments discussed above)
- Veterans Boulevard: SR 99 southbound ramps to SR 99 northbound ramps (impacts to roadway segments discussed above)
- Shaw Avenue: SR 99 southbound ramps to SR 99 northbound ramps (impacts to roadway segment discussed above)
- SR 99 mainline northbound, Dakota Avenue to Ashlan Avenue: The Master Plan shall contribute its Combined Share percentage of cost to widen the northbound segment of SR 99 from Dakota Avenue to Ashlan Avenue, to four lanes to mitigate impacts to mainline LOS.
- SR 99 mainline southbound, Herndon Avenue to Veterans Boulevard: The Master Plan shall contribute its Combined Share percentage of cost to widen the southbound segment of SR 99, from Herndon Avenue to Veterans Boulevard, to four lanes to mitigate impacts to mainline LOS.
- SR 99 mainline northbound, Shaw Avenue to Veterans Boulevard: The Master Plan shall contribute its Combined Share percentage of cost to widen this segment to four lanes to mitigate cumulative impacts to the weaving section.

Table 9-50 – Buildout 2025 + Master Plan Combined Share Percentages for Impacted Caltrans Facilities

Location	GP Zone P1	Proposed Phase 1 P2	2025 GP (No proj) F1	2025 + GPA (Phase 1) F2	Combined-Share P
RAMP INTERSECTIONS					
- SR 99 NB off-ramp/Herndon Avenue	32	1,234	1,432	3,884	33.18%
- Parkway Drive/Herndon Avenue	10	858	807	2,408	36.46%
- Parkway Dr/Grantland-SR 99 SB on-ramp	10	813	785	2,337	35.63%
- SR 99 SB ramps/Shaw Avenue	2	176	5,276	5,823	3.03%
- SR 99 NB ramps/Shaw Avenue	1	116	5,815	6,538	1.78%
- SR 99 SB ramps/Ashlan Avenue	5	229	3,466	3,932	5.84%
- SR 99 NB ramps/Ashlan Avenue	7	202	4,686	5,199	3.90%
- SR 99 SB off-ramp to Parkway Drive	7	84	1,170	1,090	7.66%
OVER-/UNDERCROSSINGS					
- Shaw Ave overcrossing EB direction	1	43	1,710	2,124	2.04%
- Ashlan Ave overcrossing EB direction	7	150	1,672	1,861	8.10%
AUXILIARY LANES					
- SR 99 NB off-ramp to Herndon Ave (aux lane)	19	344	672	1,404	25.98%
- SR 99 SB on-ramp from Parkway Dr (aux lane)	5	383	586	1,528	25.59%
MAINLINE LANES					
- SR 99 NB n/o Herndon Avenue	2	130	5,270	5,574	2.33%
- SR 99 SB n/o Herndon Avenue	6	97	4,913	4,923	1.97%
- SR 99 NB (future) Veterans Blvd to Herndon Ave	19	397	4,974	5,984	6.70%
- SR 99 SB Herndon Ave to (future) Veterans Blvd	5	399	4,666	5,717	7.00%
- SR 99 NB Shaw Ave to (future) Veterans Blvd	72	700	6,077	6,978	10.18%
- SR 99 SB (future) Veterans Blvd to Shaw Ave	28	985	5,912	7,314	13.56%
- SR 99 NB Ashlan Ave to Shaw Ave	72	635	6,301	6,852	9.36%
- SR 99 SB Shaw Ave to Ashlan Ave	26	915	6,031	7,201	12.78%
- SR 99 NB s/o Ashlan Avenue	64	586	7,014	7,371	7.99%
- SR 99 SB s/o Ashlan Avenue	22	747	7,057	8,148	9.21%

Note:

- "Combined" share percentage is determined by the following formula: P=(P1/F1)+(P2-P1)/F2.

- SR 99 mainline northbound, Veterans Boulevard to Herndon Avenue: The Master Plan shall contribute its Combined Share percentage of cost to widen this segment to four lanes to mitigate cumulative impacts to the weaving section.
- SR 99 mainline southbound, Herndon Avenue to Veterans Boulevard: The Master Plan shall contribute its Combined Share percentage of cost to widen this segment to four lanes to mitigate cumulative impacts to the weaving section.
- SR 99 mainline southbound, Veterans Boulevard to Shaw Avenue: The Master Plan shall contribute its Combined Share percentage of cost to widen this segment to five lanes to mitigate cumulative impacts to the weaving section.

10.0 REFERENCES

California Department of Transportation (Caltrans), *Business Plan for Route 99*, December 7, 2005.

California Department of Transportation (Caltrans), *Guide for the Preparation of Traffic Impact Studies*, December 2002.

California Department of Transportation (Caltrans), *Highway Design Manual*, updated 2004.

California Department of Transportation (Caltrans), *Traffic Manual*, 1996.

City of Fresno, 2025 *General Plan*, November 2002.

City of Fresno, *Traffic Impact Study Report Guidelines*, October 2006.

Council of Fresno County Governments (Fresno COG), *Model Steering Committee – Recommended Procedures for Using Traffic Projections from the Fresno COG Travel Model*, updated December 2002.

Institute of Transportation Engineers, *Trip Generation,* 7th edition, 2003.

Institute of Transportation Engineers, *Trip Generation Handbook,* 7th edition, 2003.

KKE Architects, *Marketplace at El Paseo* (site plan), April 2008.

Nolte Engineers, *Herndon Avenue Grade Separation* (plans).

Omni Means, *Draft SR 99/Veterans Boulevard Interchange PSR Traffic Operations Analysis*, October 24, 2006.

Transportation Research Board, *Highway Capacity Manual, Special Report No. 209*, Washington D. C., 2000.

Appendix L2
Traffic Impact Study, Volume 2, October 2008

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VOLUME 2

APPENDICES

FINAL TRAFFIC IMPACT STUDY

FRESNO EL PASEO PROJECT

DKS Associates

TRANSPORTATION SOLUTIONS

October 30, 2008

VOLUME 2

APPENDICES

FINAL TRAFFIC IMPACT STUDY

FRESNO EL PASEO PROJECT

October 30, 2008

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This Traffic Impact Study has been prepared under the direction of Denis Bilodeau, P.E., T.E., PTOE. Mr. Bilodeau attests to the technical information contained therein and has judged the qualifications of recommendations, conclusions, and decisions are based on City of Fresno guidelines, general engineering standards, and California/Federal laws.

APPENDIX A

TABLE 4-4 of the “Florida Tables”

TABLE 4 - 4
GENERALIZED PEAK HOUR TWO-WAY VOLUMES FOR FLORIDA'S URBANIZED AREAS*

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	180	620	1,210	1,720	2,370
4	Divided	1,940	3,140	4,540	5,870	6,670
6	Divided	2,900	4,700	6,800	8,810	10,010

STATE TWO-WAY ARTERIALS

Class I (>0.00 to 1.99 signalized intersections per mile)

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	400	1,310	1,560	1,610
4	Divided	460	2,780	3,300	3,390	***
6	Divided	700	4,240	4,950	5,080	***
8	Divided	890	5,510	6,280	6,440	***

Class II (2.00 to 4.50 signalized intersections per mile)

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	180	1,070	1,460	1,550
4	Divided	**	390	2,470	3,110	3,270
6	Divided	**	620	3,830	4,680	4,920
8	Divided	**	800	5,060	6,060	6,360

Class III (more than 4.5 signalized intersections per mile and not within primary city central business district of an urbanized area over 750,000)

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	**	500	1,200	1,470
4	Divided	**	**	1,180	2,750	3,120
6	Divided	**	**	1,850	4,240	4,690
8	Divided	**	**	2,450	5,580	6,060

Class IV (more than 4.5 signalized intersections per mile and within primary city central business district of an urbanized area over 750,000)

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	**	490	1,310	1,420
4	Divided	**	**	1,170	2,880	3,010
6	Divided	**	**	1,810	4,350	4,520
8	Divided	**	**	2,460	5,690	5,910

NON-STATE ROADWAYS

Major City/County Roadways

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	**	870	1,390	1,480
4	Divided	**	**	2,030	2,950	3,120
6	Divided	**	**	3,170	4,450	4,690

Other Signalized Roadways
(signalized intersection analysis)

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	**	450	950	1,200
4	Divided	**	**	1,050	2,070	2,400

Source: Florida Department of Transportation 02/22/02
Systems Planning Office
605 Suwannee Street, MS 19
Tallahassee, FL 32399-0450
http://www11.myflorida.com/planning/systems/sm/los/default.htm

FREEWAYS

Interchange spacing ≥ 2 mi. apart

Lanes	Level of Service A	B	C	D	E
4	2,310	3,840	5,350	6,510	7,240
6	3,580	5,930	8,270	10,050	11,180
8	4,840	8,020	11,180	13,600	15,130
10	6,110	10,110	14,110	17,160	19,050
12	7,360	12,200	17,020	20,710	23,000

Interchange spacing < 2 mi. apart

Lanes	Level of Service A	B	C	D	E
4	2,050	3,350	4,840	6,250	7,110
6	3,240	5,250	7,600	9,840	11,180
8	4,420	7,160	10,360	13,420	15,240
10	5,600	9,070	13,130	16,980	19,310
12	6,780	10,980	15,890	20,560	23,360

BICYCLE MODE

(**Note**: Level of service for the bicycle mode in this table is based on roadway geometrics at 40 mph posted speed and traffic conditions, not number of bicyclists using the facility.) (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder Bicycle Lane Coverage	Level of Service A	B	C	D	E
0-49%	**	**	310	1,310	>1,310
50-84%	**	240	390	>390	***
85-100%	300	680	>680	***	***

PEDESTRIAN MODE

(**Note:** Level of service for the pedestrian mode in this table is based on roadway geometrics at 40 mph posted speed and traffic conditions, not number of pedestrians using the facility.) (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	Level of Service A	B	C	D	E
0-49%	**	**	**	600	1,480
50-84%	**	**	**	940	1,800
85-100%	**	210	1,080	>1,080	***

BUS MODE (Scheduled Fixed Route)

(Buses per hour)

(**Note:** Buses per hour shown are only for the **peak hour** in the **single direction** of higher traffic flow.)

Sidewalk Coverage	Level of Service A	B	C	D	E
0-84%	**	>5	≥4	≥3	≥2
85-100%	>6	>4	≥3	≥2	≥1

ARTERIAL/NON-STATE ROADWAY ADJUSTMENTS

DIVIDED/UNDIVIDED
(alter corresponding volume by the indicated percent)

Lanes	Median	Left Turns Lanes	Adjustment Factors
2	Divided	Yes	+5%
2	Undivided	No	-20%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

ONE-WAY FACILITIES

Decrease corresponding two-directional volumes in this table by 40% to obtain the equivalent one directional volume for one-way facilities.

*This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Values shown are hourly two-way volumes for levels of service and are for the automobile/truck modes unless specifically stated. Level of service letter grade thresholds are probably not comparable across modes and, therefore, cross modal comparisons should be made with caution. Furthermore, combining levels of service of different modes into one overall roadway level of service is not recommended. To convert to annual average daily traffic volumes, these volumes must be divided by an appropriate K factor. The table's input value defaults and level of service criteria appear on the following page. Calculations are based on planning applications of the Highway Capacity Manual, Bicycle LOS Model, Pedestrian LOS Model and Transit Capacity and Quality of Service Manual, respectively for the automobile/truck, bicycle, pedestrian and bus modes.
**Cannot be achieved using table input value defaults.
***Not applicable for that level of service letter grade. For automobile/truck modes, volumes greater than level of service D become F because intersection capacities have been reached. For bicycle and pedestrian modes, the level of service letter grade (including F) is not achievable, because there is no maximum vehicle volume threshold using table input value defaults.

APPENDIX B

RAW TRAFFIC COUNT WORKSHEETS

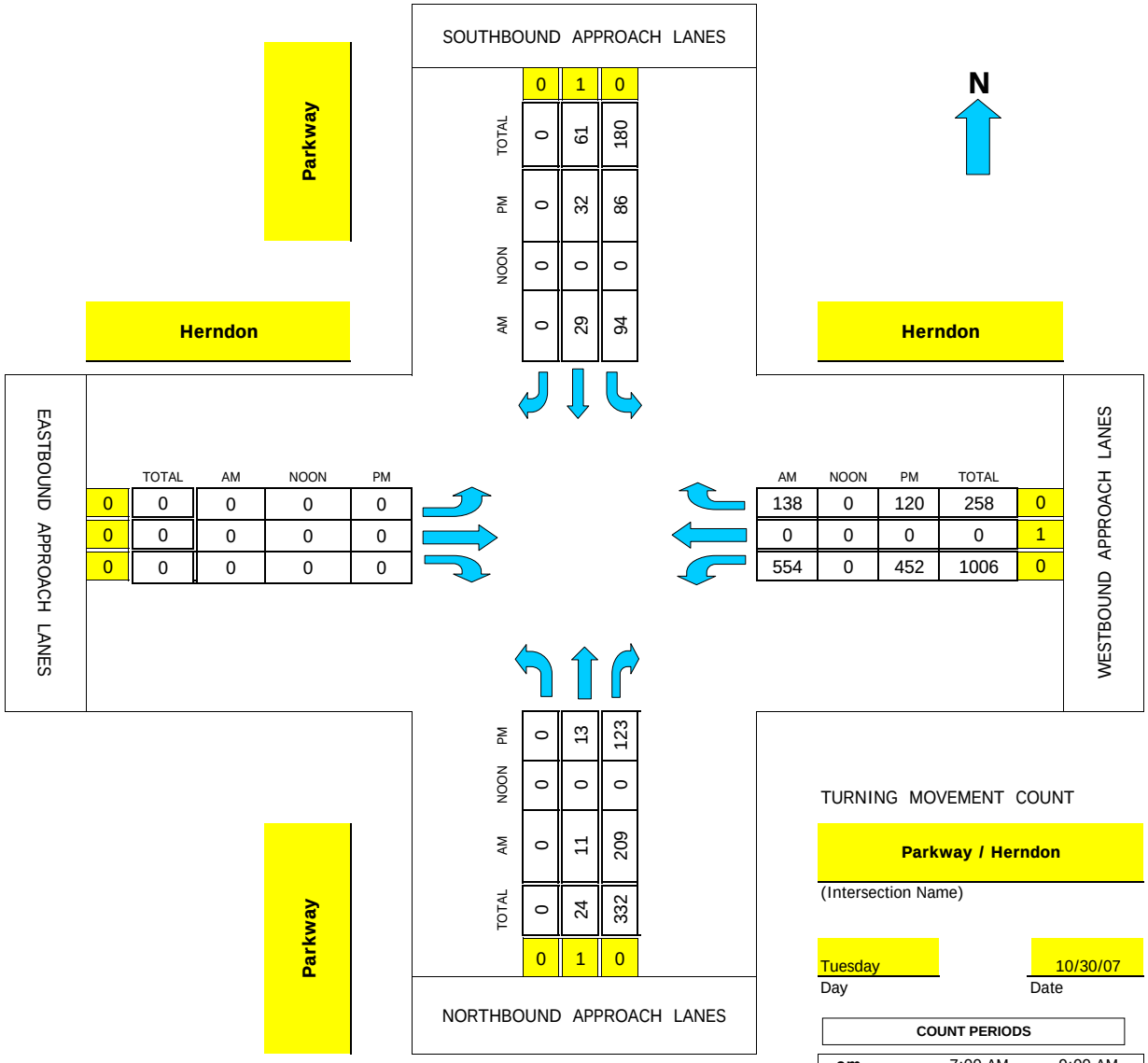
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Parkway / Herndon

Project #: 07-8202-001



TURNING MOVEMENT COUNT

Parkway / Herndon

(Intersection Name)

Tuesday — Day

10/30/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: 3-Way Stop Sign

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

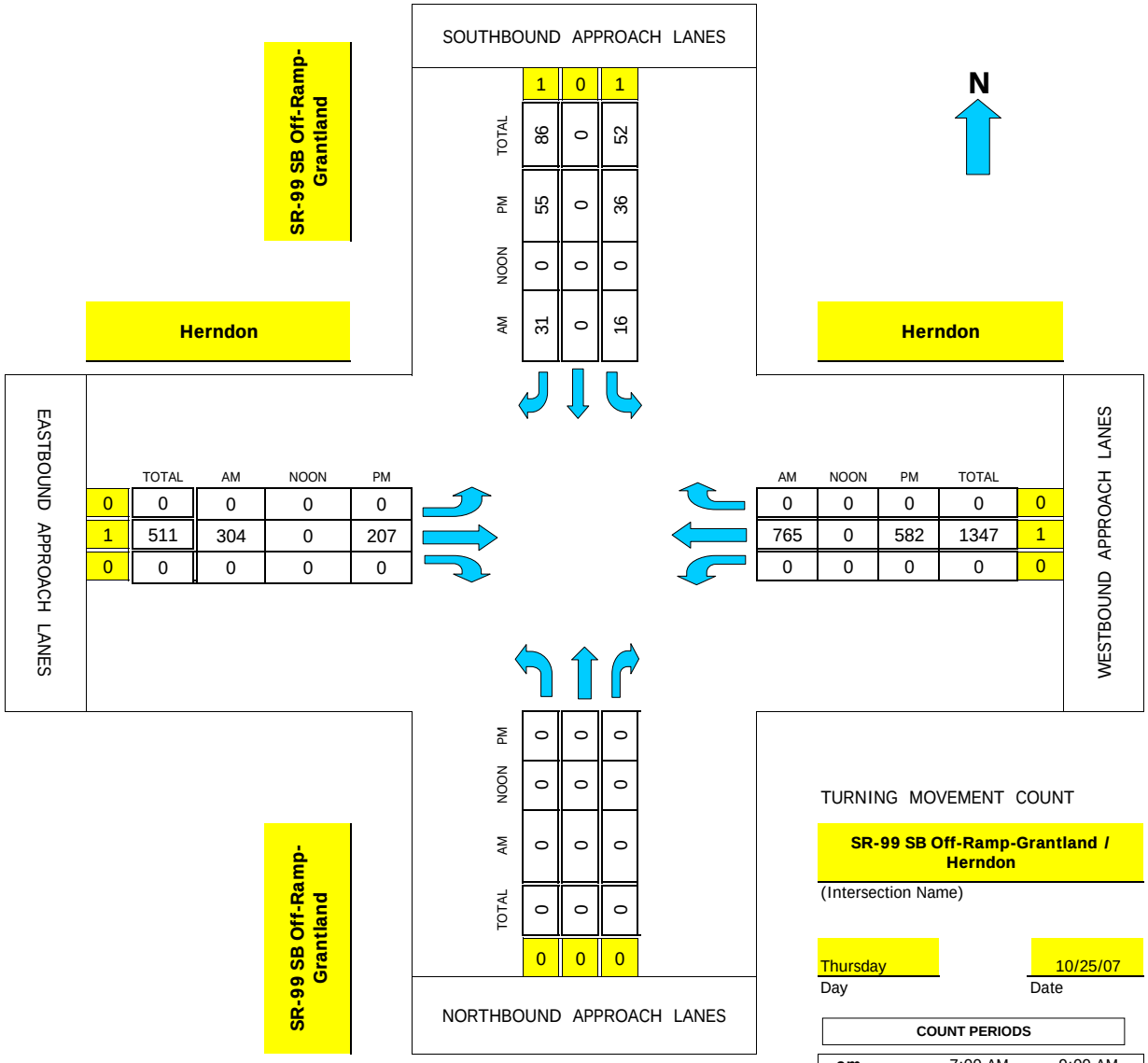
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of SR-99 SB Off-Ramp-Grantland/Herndon

Project #: 07-8202-002



	TOTAL	AM	NOON	PM
1	86	31	0	55
0	0	0	0	0
1	52	16	0	36

	TOTAL	AM	NOON	PM
0	0	0	0	0
1	511	304	0	207
0	0	0	0	0

	AM	NOON	PM	TOTAL
0	0	0	0	0
1	765	0	582	1347
0	0	0	0	0

	TOTAL	AM	NOON	PM
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

TURNING MOVEMENT COUNT

SR-99 SB Off-Ramp-Grantland / Herndon

(Intersection Name)

Thursday — Day

10/25/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: 1-WAY STOP (SB)

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

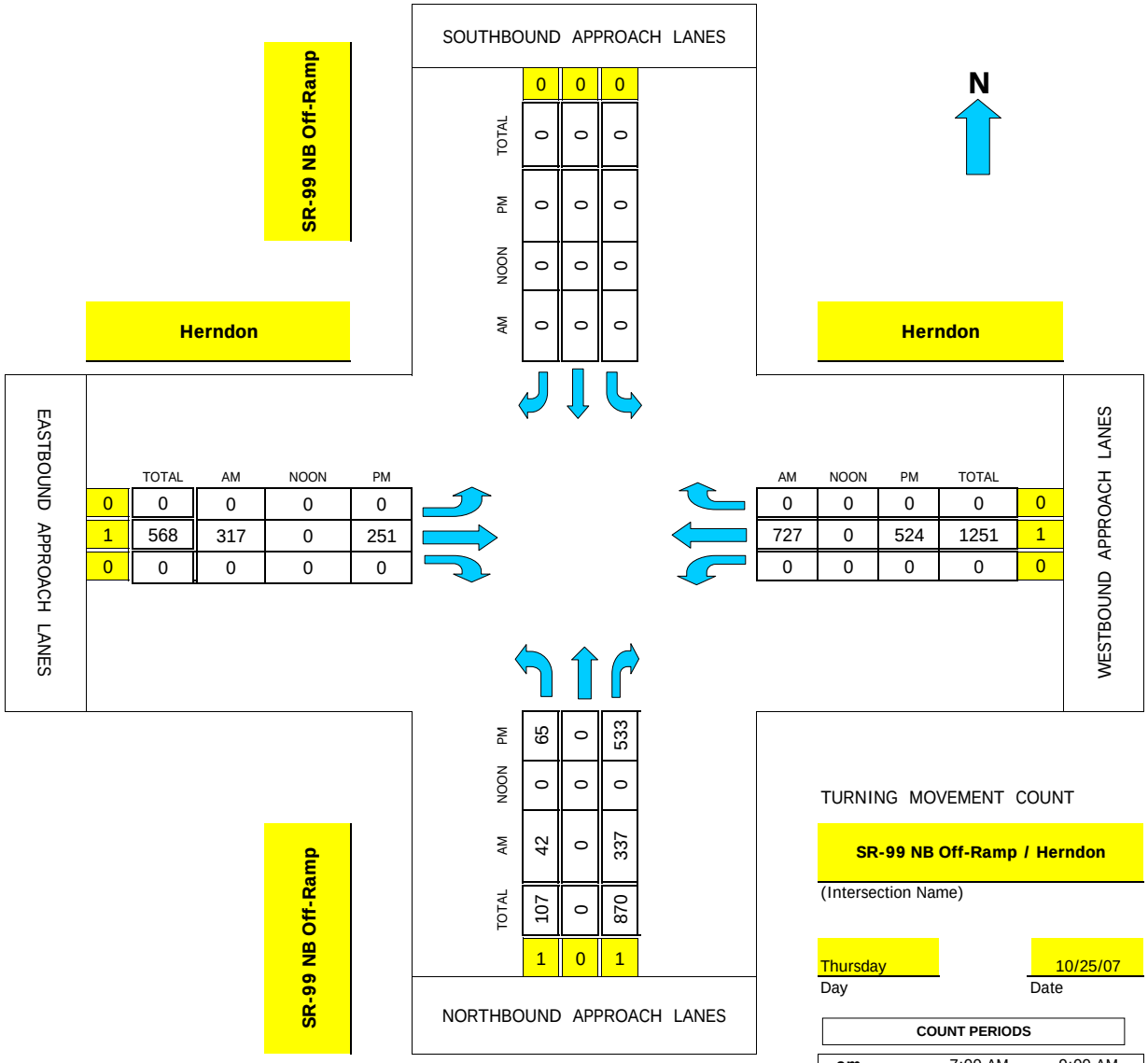
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of SR-99 NB Off-Ramp/Herndon

Project #: 07-8202-003



TURNING MOVEMENT COUNT

SR-99 NB Off-Ramp / Herndon

(Intersection Name)

Thursday — Day

10/25/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Stop Sign on NB Off Ramp NL only onto Herndon Ave- NR was yield to thru traffic.

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Golden State / Herndon

Project #: 07-8202-004

Golden State

Herndon

SOUTHBOUND APPROACH LANES

	0	1	1
TOTAL	186	195	592
PM	60	146	387
NOON	0	0	0
AM	126	49	205

N

Herndon

EASTBOUND APPROACH LANES

	TOTAL	AM	NOON	PM
1	120	45	0	75
1.5	1172	552	0	620
1	91	42	0	49

AM	NOON	PM	TOTAL	
435	0	299	734	1
569	0	413	982	1
40	0	47	87	1

WESTBOUND APPROACH LANES

Golden State

PM	41	140	81
NOON	0	0	0
AM	50	150	45
TOTAL	91	290	126
	1	1	0

NORTHBOUND APPROACH LANES

TURNING MOVEMENT COUNT

Golden State / Herndon

(Intersection Name)

Tuesday — Day

10/30/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	430 PM

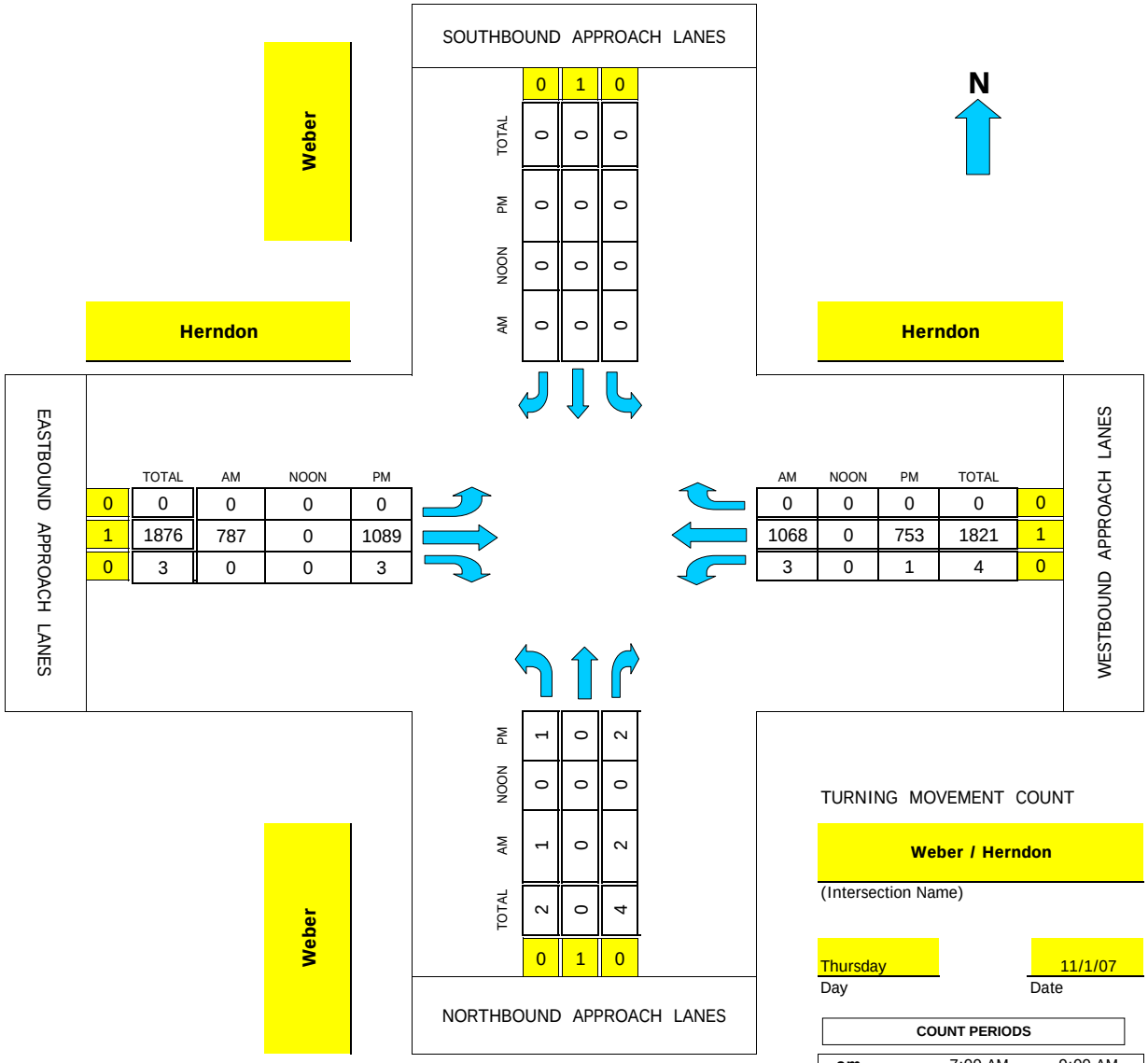
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Weber/Herndon

Project #: 07-8202-005



TURNING MOVEMENT COUNT

Weber / Herndon

(Intersection Name)

Thursday — Day

11/1/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: 2-Way Stop Sign (NS)

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

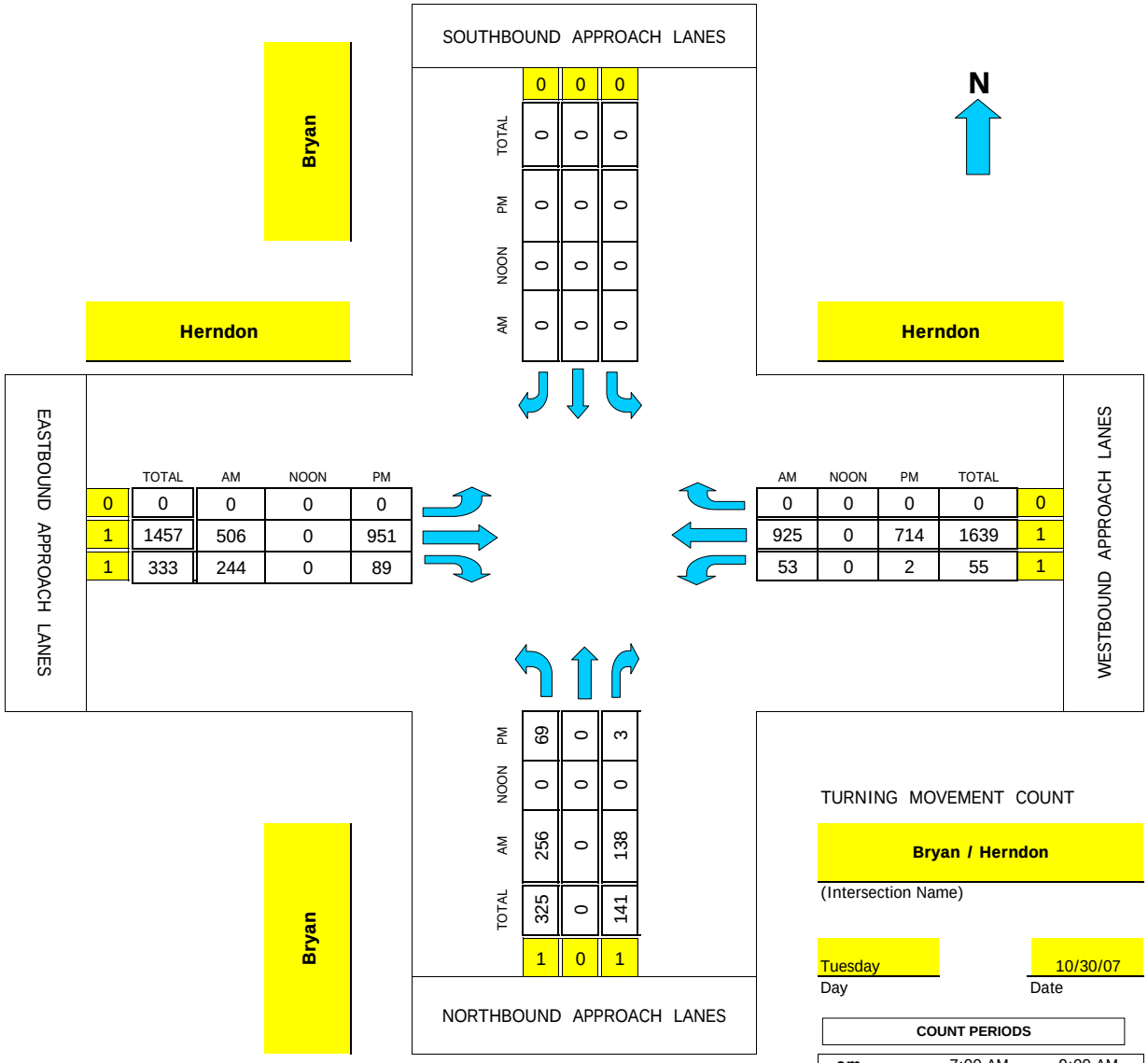
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Bryan/Herndon

Project #: 07-8202-006



TURNING MOVEMENT COUNT

Bryan / Herndon

(Intersection Name)

Tuesday — Day

10/30/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

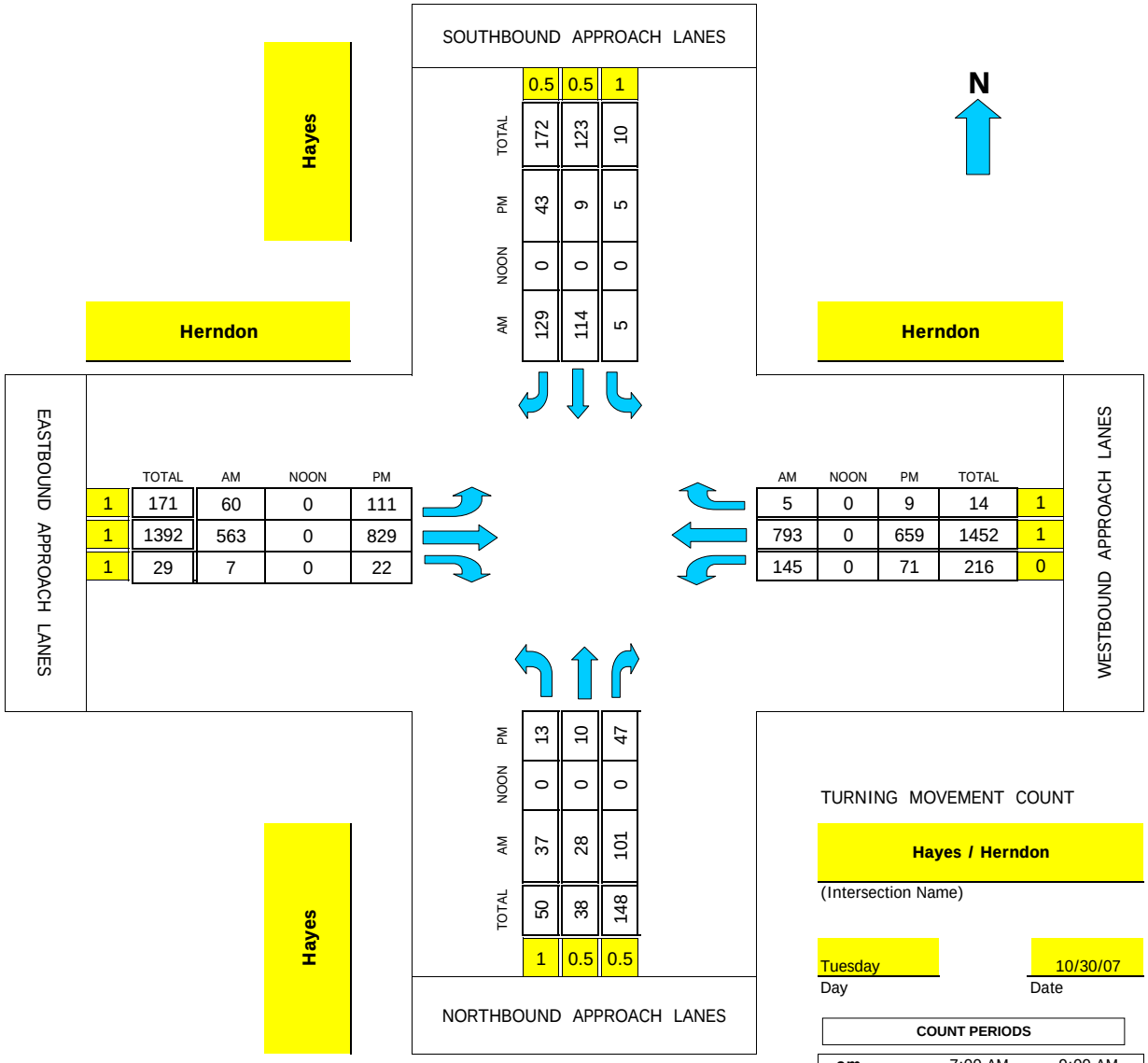
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Hayes / Herndon

Project #: 07-8202-007



	TOTAL	AM	NOON	PM
0.5	172	129	0	43
0.5	123	114	0	9
1	10	5	0	5

	TOTAL	AM	NOON	PM
1	171	60	0	111
1	1392	563	0	829
1	29	7	0	22

AM	NOON	PM	TOTAL	
5	0	9	14	1
793	0	659	1452	1
145	0	71	216	0

	TOTAL	AM	NOON	PM
13	50	37	0	13
10	38	28	0	10
47	148	101	0	47
1	0.5	0.5		

TURNING MOVEMENT COUNT

Hayes / Herndon

(Intersection Name)

Tuesday — Day

10/30/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

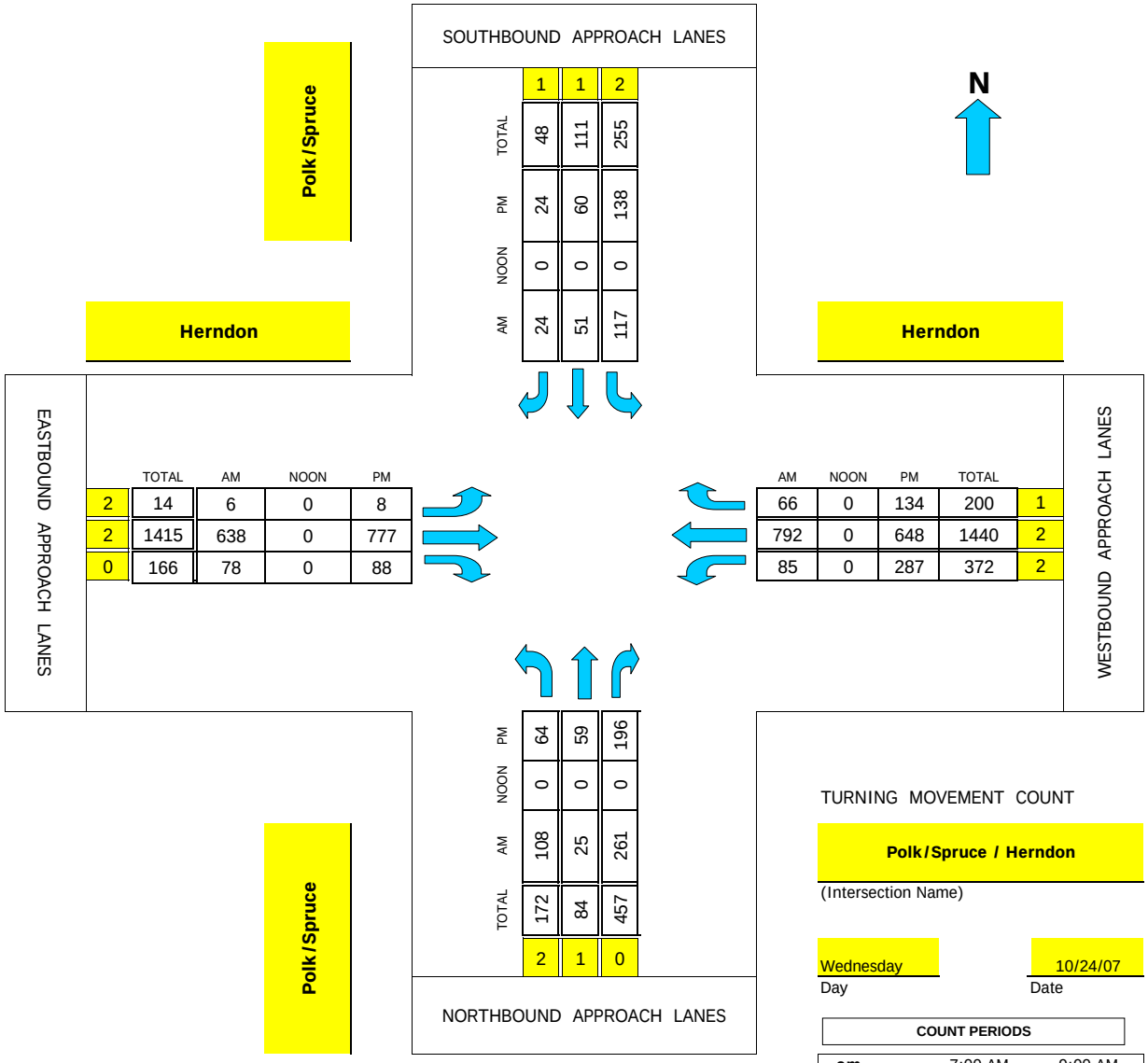
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Polk/Spruce/Herndon

Project #: 07-8202-009



	1	1	2
TOTAL	48	111	255
PM	24	60	138
NOON	0	0	0
AM	24	51	117

	TOTAL	AM	NOON	PM
2	14	6	0	8
2	1415	638	0	777
0	166	78	0	88

AM	NOON	PM	TOTAL	
66	0	134	200	1
792	0	648	1440	2
85	0	287	372	2

	2	1	0
PM	64	59	196
NOON	0	0	0
AM	108	25	261
TOTAL	172	84	457

TURNING MOVEMENT COUNT

Polk/Spruce / Herndon

(Intersection Name)

Wednesday — Day

10/24/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	715 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Milburn/Herndon

Project #: 07-8202-010

Milburn

Herndon

SOUTHBOUND APPROACH LANES

	0	2	2
TOTAL	337	515	510
PM	133	214	151
NOON	0	0	0
AM	204	301	359

N

Herndon

EASTBOUND APPROACH LANES

	TOTAL	AM	NOON	PM
2	439	179	0	260
3	1459	723	0	736
1	252	130	0	122

AM	NOON	PM	TOTAL	
108	0	204	312	1
611	0	802	1413	3
81	0	90	171	2

WESTBOUND APPROACH LANES

Milburn

PM	137	263	58
NOON	0	0	0
AM	114	168	131
TOTAL	251	431	189
	2	2	1

NORTHBOUND APPROACH LANES

TURNING MOVEMENT COUNT

Milburn / Herndon

(Intersection Name)

Thursday — Day

11/1/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	715 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

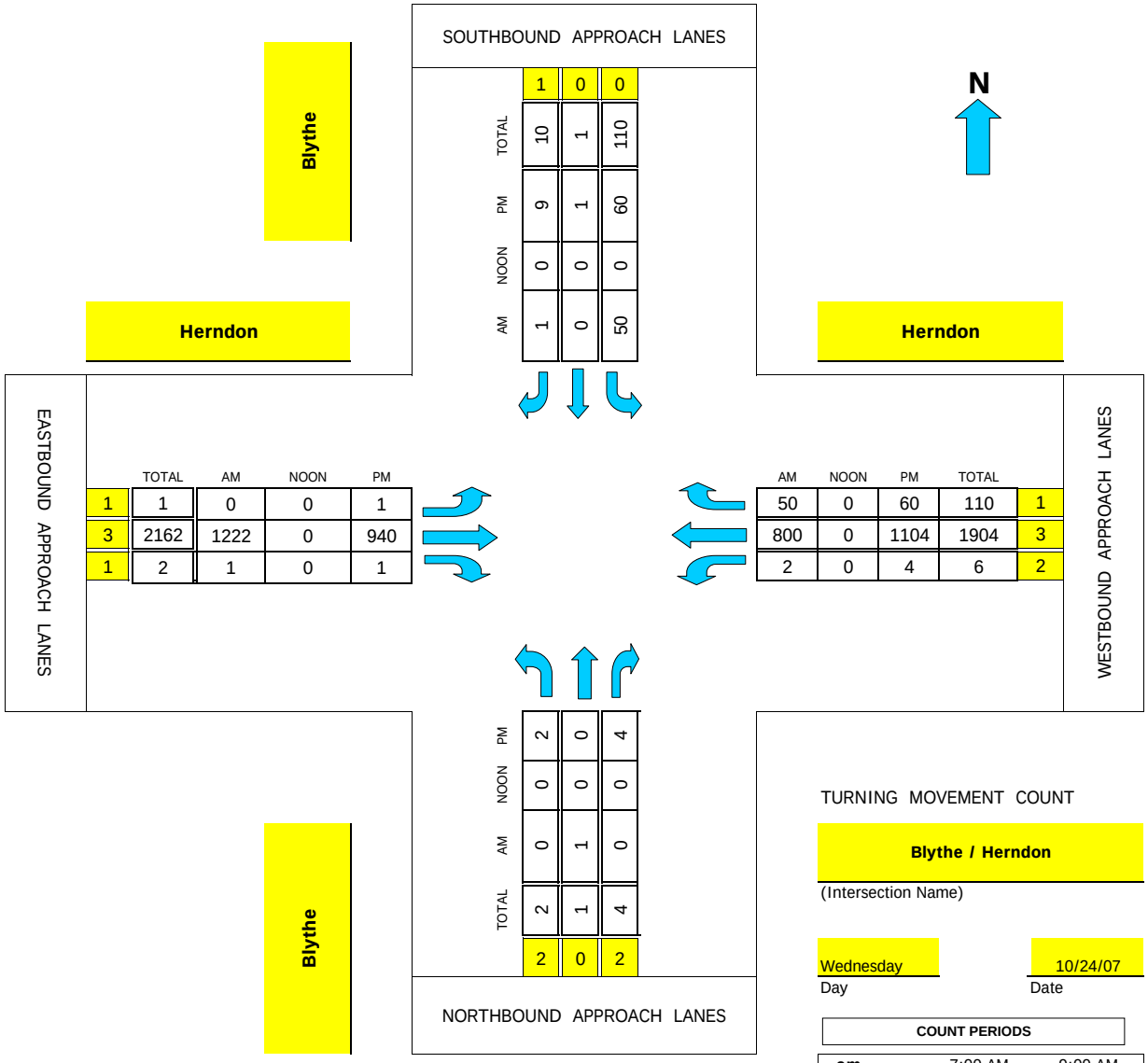
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Blythe / Herndon

Project #: 07-8202-011



	TOTAL	AM	NOON	PM
1	10	1	0	9
0	1	0	0	1
0	110	50	0	60

	TOTAL	AM	NOON	PM
1	1	0	0	1
3	2162	1222	0	940
1	2	1	0	1

	AM	NOON	PM	TOTAL
1	50	0	60	110
3	800	0	1104	1904
2	2	0	4	6

	TOTAL	AM	NOON	PM
2	2	0	0	2
0	1	1	0	0
4	4	0	0	4

TURNING MOVEMENT COUNT

Blythe / Herndon

(Intersection Name)

Wednesday — Day

10/24/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	715 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

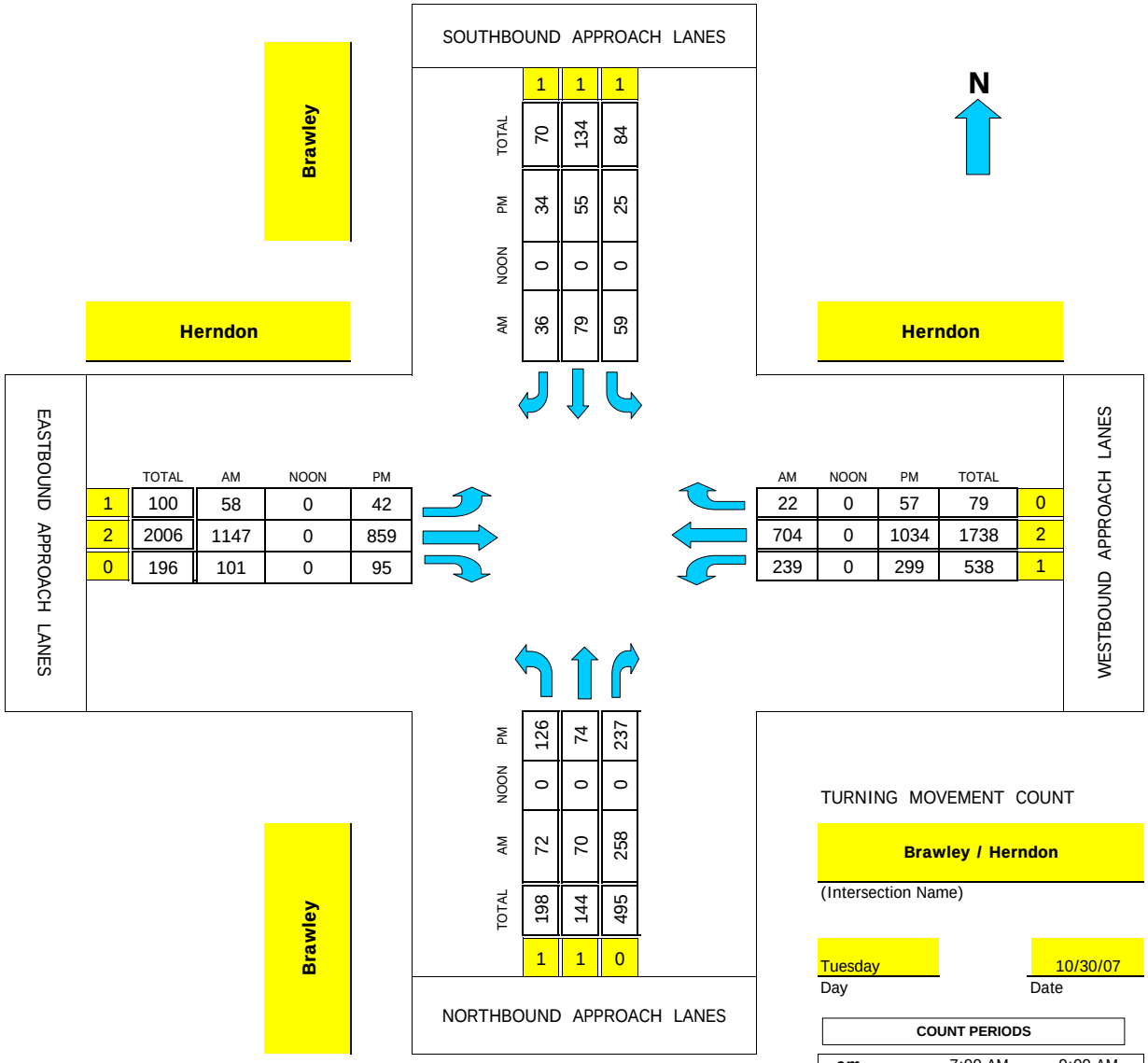
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Brawley/Herndon

Project #: 07-8202-012



	TOTAL	AM	NOON	PM
1	70	36	0	34
1	134	79	0	55
1	84	59	0	25

	TOTAL	AM	NOON	PM
1	100	58	0	42
2	2006	1147	0	859
0	196	101	0	95

	AM	NOON	PM	TOTAL
0	22	0	57	79
2	704	0	1034	1738
1	239	0	299	538

	TOTAL	AM	NOON	PM
1	198	72	0	126
1	144	70	0	74
0	495	258	0	237

TURNING MOVEMENT COUNT

Brawley / Herndon

(Intersection Name)

Tuesday — Day

10/30/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	715 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Marks Ave / Herndon Ave

Project #: 07-8218-001

Marks Ave

SOUTHBOUND APPROACH LANES

	2	2	1
TOTAL	412	345	450
PM	288	204	251
NOON	0	0	0
AM	124	141	199

N

Herndon Ave

Herndon Ave

EASTBOUND APPROACH LANES

	TOTAL	AM	NOON	PM
1	283	100	0	183
2	2605	1562	0	1043
1	123	49	0	74

AM	NOON	PM	TOTAL	
222	0	352	574	1
815	0	1341	2156	2
204	0	300	504	1

WESTBOUND APPROACH LANES

	1	2	1
PM	107	219	228
NOON	0	0	0
AM	102	119	236
TOTAL	209	338	464

Marks Ave

NORTHBOUND APPROACH LANES

TURNING MOVEMENT COUNT

Marks Ave / Herndon Ave

(Intersection Name)

Tuesday — Day

11/13/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	715 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	500 PM

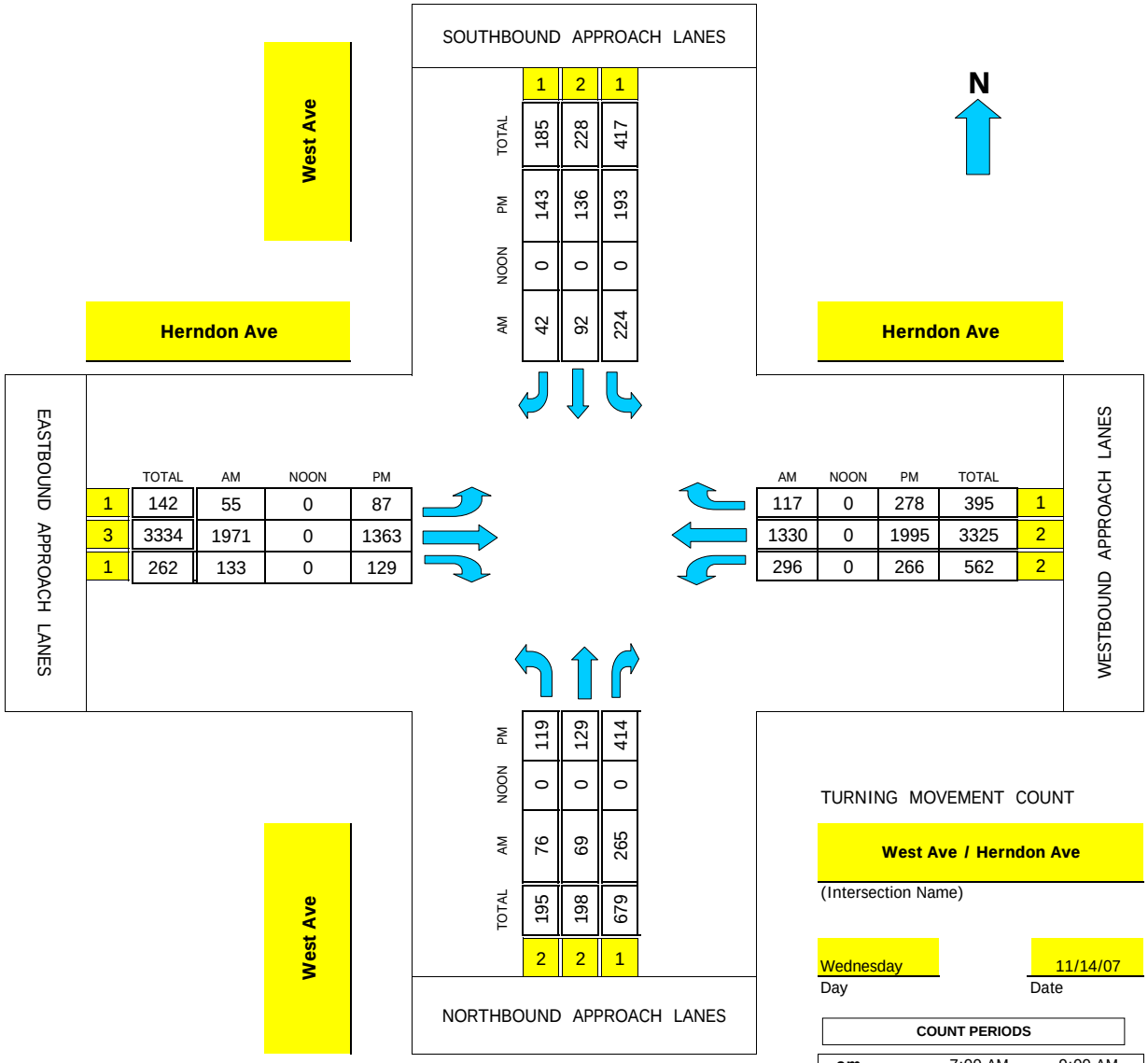
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of West Ave/Herndon Ave

Project #: 07-8218-009



	TOTAL	AM	NOON	PM
1	185	42	0	143
2	228	92	0	136
1	417	224	0	193

	TOTAL	AM	NOON	PM
1	142	55	0	87
3	3334	1971	0	1363
1	262	133	0	129

	AM	NOON	PM	TOTAL
1	117	0	278	395
2	1330	0	1995	3325
2	296	0	266	562

	TOTAL	AM	NOON	PM
2	195	76	0	119
2	198	69	0	129
1	679	265	0	414

TURNING MOVEMENT COUNT

West Ave / Herndon Ave

(Intersection Name)

Wednesday — Day

11/14/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	730 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

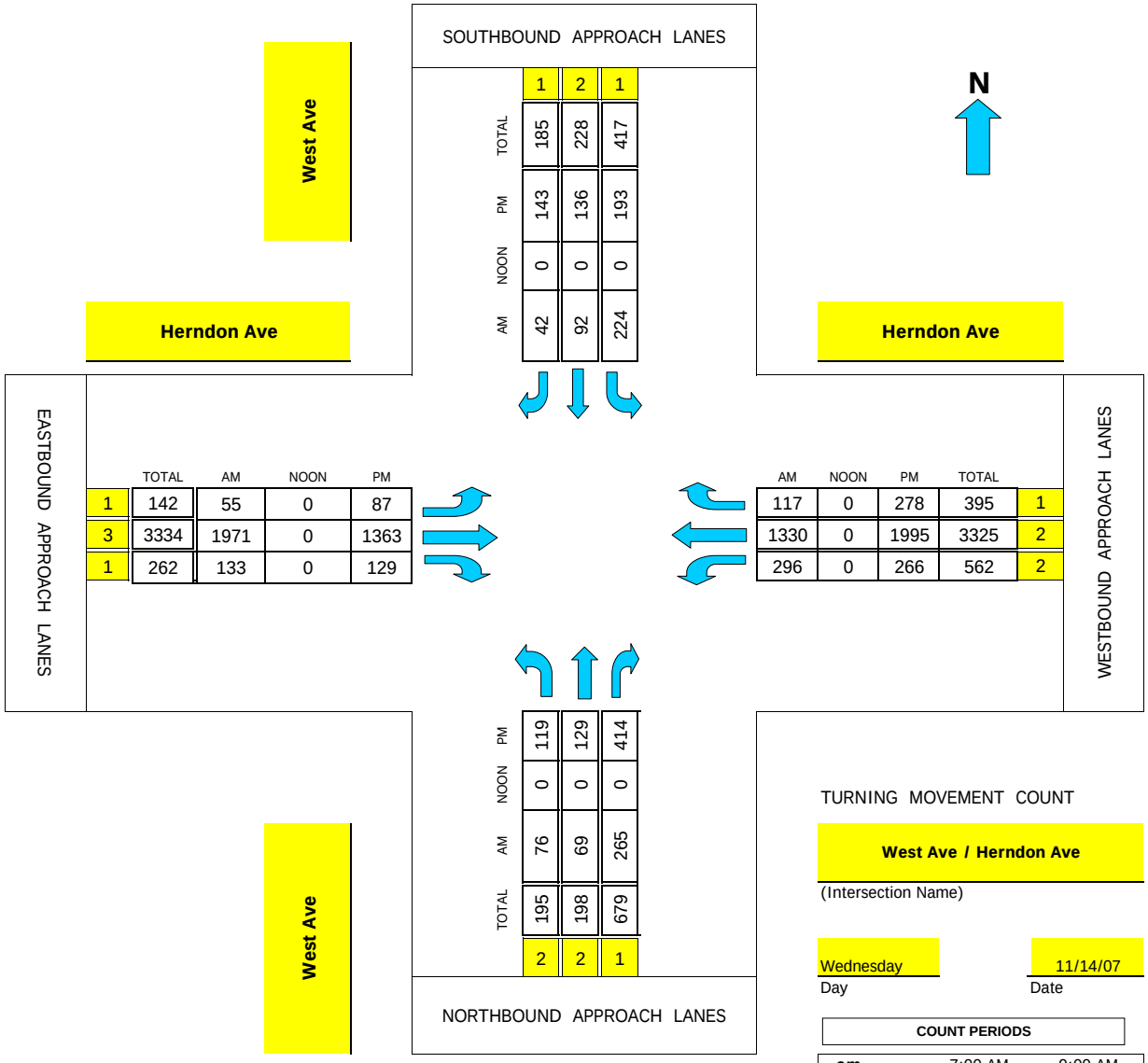
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of West Ave/Herndon Ave

Project #: 07-8218-009



	TOTAL	AM	NOON	PM
1	185	42	0	143
2	228	92	0	136
1	417	224	0	193

	TOTAL	AM	NOON	PM
1	142	55	0	87
3	3334	1971	0	1363
1	262	133	0	129

	AM	NOON	PM	TOTAL
1	117	0	278	395
2	1330	0	1995	3325
2	296	0	266	562

	TOTAL	AM	NOON	PM
2	195	76	0	119
2	198	69	0	129
1	679	265	0	414

TURNING MOVEMENT COUNT

West Ave / Herndon Ave

(Intersection Name)

Wednesday — Day

11/14/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	730 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

Intersection Turning Movement

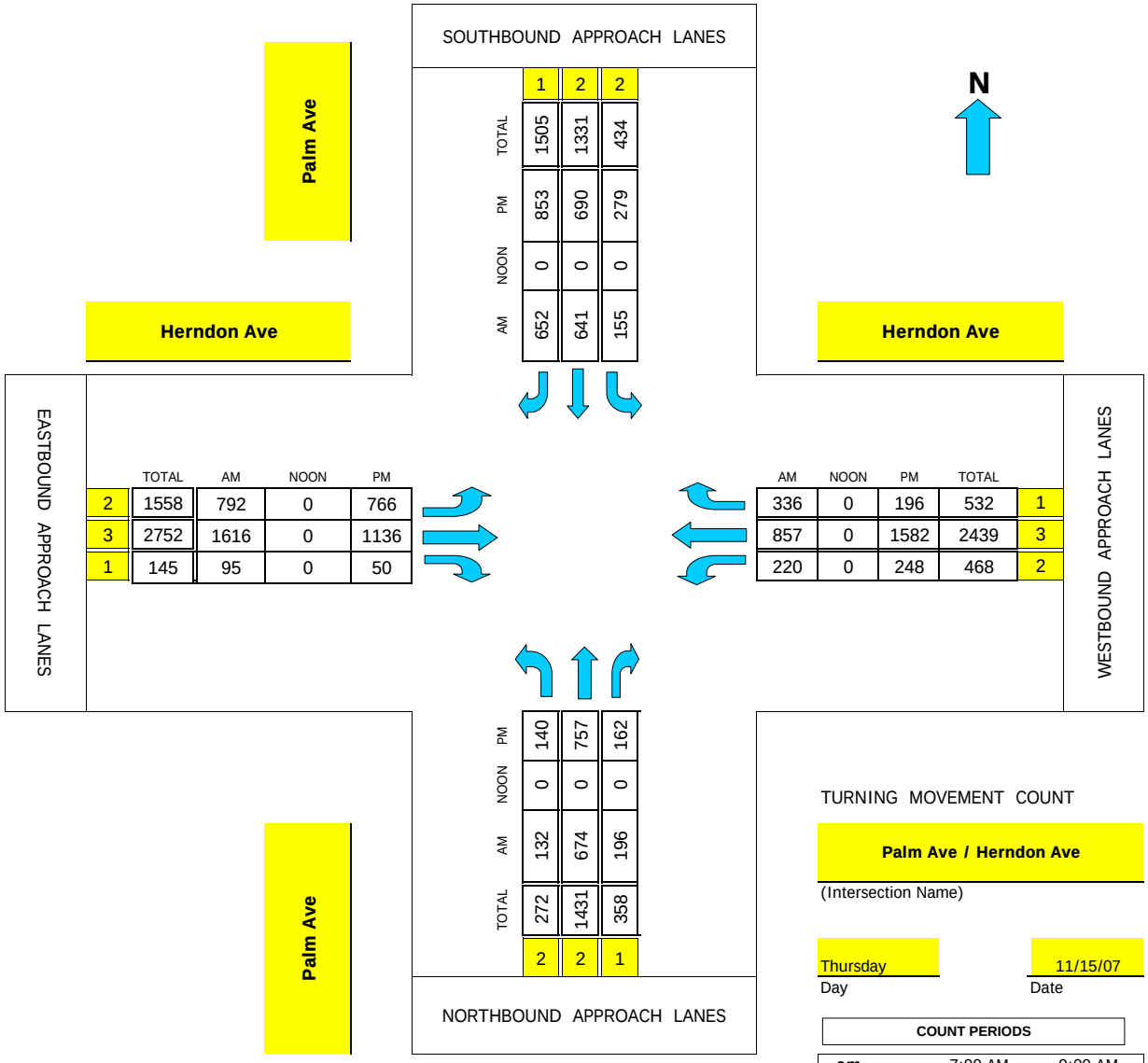
Prepared by:

NDS

National Data & Surveying Services

TMC Summary of Palm Ave / Herndon Ave

Project #: 07-8218-002



	TOTAL	AM	NOON	PM
1	1505	652	0	853
2	1331	641	0	690
2	434	155	0	279

	TOTAL	AM	NOON	PM
2	1558	792	0	766
3	2752	1616	0	1136
1	145	95	0	50

	AM	NOON	PM	TOTAL
1	336	0	196	532
3	857	0	1582	2439
2	220	0	248	468

	TOTAL	AM	NOON	PM
2	272	132	0	140
2	1431	674	0	757
1	358	196	0	162

TURNING MOVEMENT COUNT

Palm Ave / Herndon Ave

(Intersection Name)

Thursday — Day

11/15/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	730 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	500 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Blackstone Ave / Herndon Ave

Project #: 07-8218-003

Blackstone Ave

SOUTHBOUND APPROACH LANES

	1	3	2
TOTAL	526	1047	455
PM	368	705	259
NOON	0	0	0
AM	158	342	196

N

Herndon Ave

Herndon Ave

EASTBOUND APPROACH LANES

	TOTAL	AM	NOON	PM
2	297	146	0	151
3	2859	1560	0	1299
1	447	124	0	323

AM	NOON	PM	TOTAL	
213	0	236	449	1
1232	0	1194	2426	3
98	0	158	256	2

WESTBOUND APPROACH LANES

Blackstone Ave

	2	3	1
PM	196	525	87
NOON	0	0	0
AM	92	219	108
TOTAL	288	744	195

NORTHBOUND APPROACH LANES

TURNING MOVEMENT COUNT

Blackstone Ave / Herndon Ave

(Intersection Name)

Thursday — Day

11/15/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	715 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	430 PM

Intersection Turning Movement

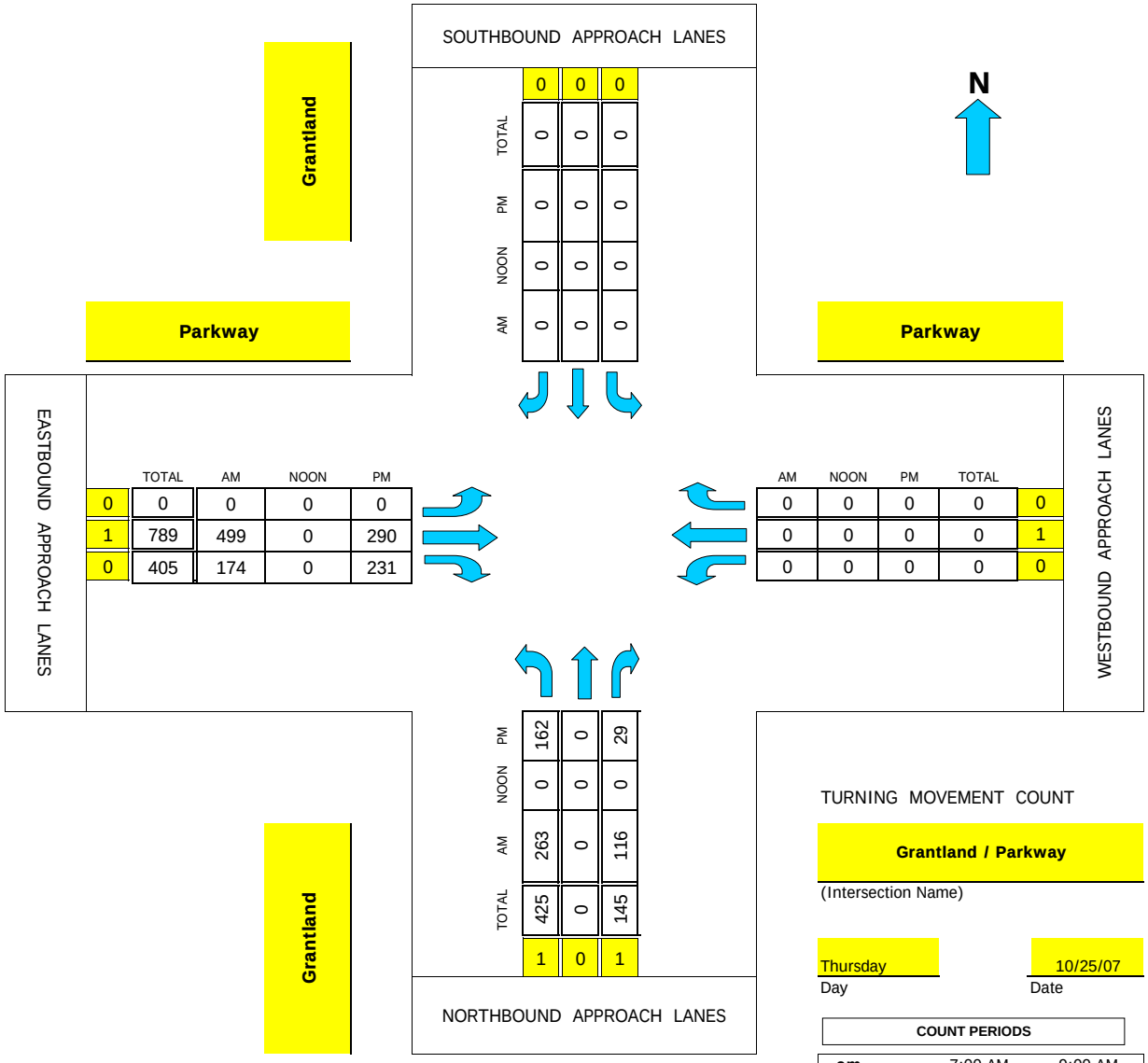
Prepared by:

NDS

National Data & Surveying Services

TMC Summary of Grantland/Parkway

Project #: 07-8202-028



TURNING MOVEMENT COUNT

Grantland / Parkway

(Intersection Name)

Thursday — Day

10/25/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: 1-Way Stop Sign (NB)

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	415 PM

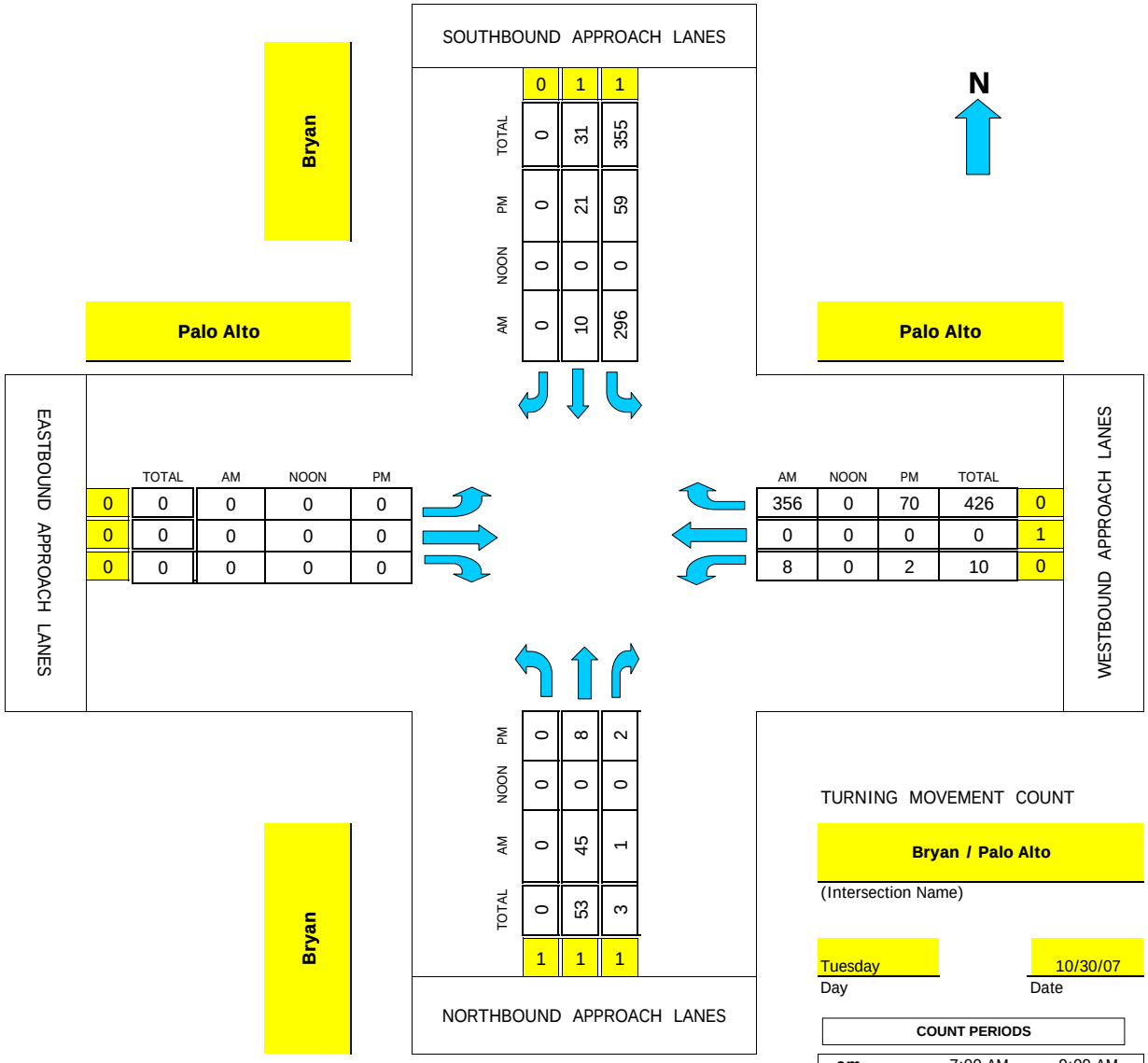
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Bryan/Palo Alto

Project #: 07-8202-014



	TOTAL	AM	NOON	PM
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

	AM	NOON	PM	TOTAL	
	356	0	70	426	0
	0	0	0	0	1
	8	0	2	10	0

	TOTAL	PM	NOON	AM	
0	0	31	0	10	1
1	0	21	0	0	1
1	355	59	0	296	0

	TOTAL	AM	NOON	PM	
1	0	0	0	0	0
1	53	45	0	8	0
1	3	1	0	2	0

TURNING MOVEMENT COUNT

Bryan / Palo Alto

(Intersection Name)

Tuesday — Day

10/30/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: 2-Way Stop Sign (EW)

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

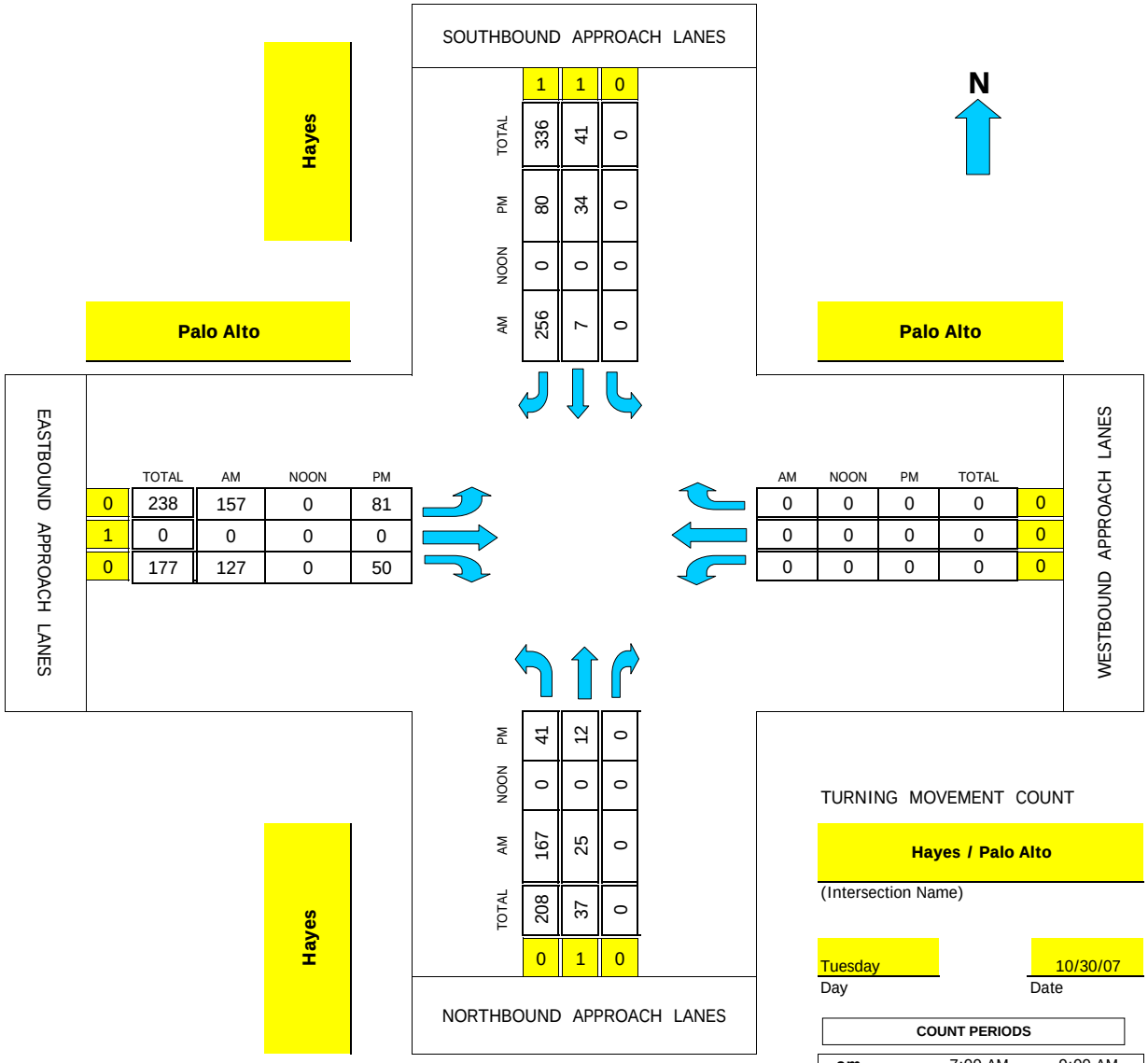
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Hayes/Palo Alto

Project #: 07-8202-013



	TOTAL	AM	NOON	PM
1	1	1	0	
TOTAL	336	41	0	
PM	80	34	0	
NOON	0	0	0	
AM	256	7	0	

	TOTAL	AM	NOON	PM
0	238	157	0	81
1	0	0	0	0
0	177	127	0	50

AM	NOON	PM	TOTAL	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

	TOTAL	AM	NOON	PM
PM	41	12	0	
NOON	0	0	0	
AM	167	25	0	
TOTAL	208	37	0	
	0	1	0	

TURNING MOVEMENT COUNT

Hayes / Palo Alto

(Intersection Name)

Tuesday — Day

10/30/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: 1-Way Stop Sign (EB)

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	500 PM

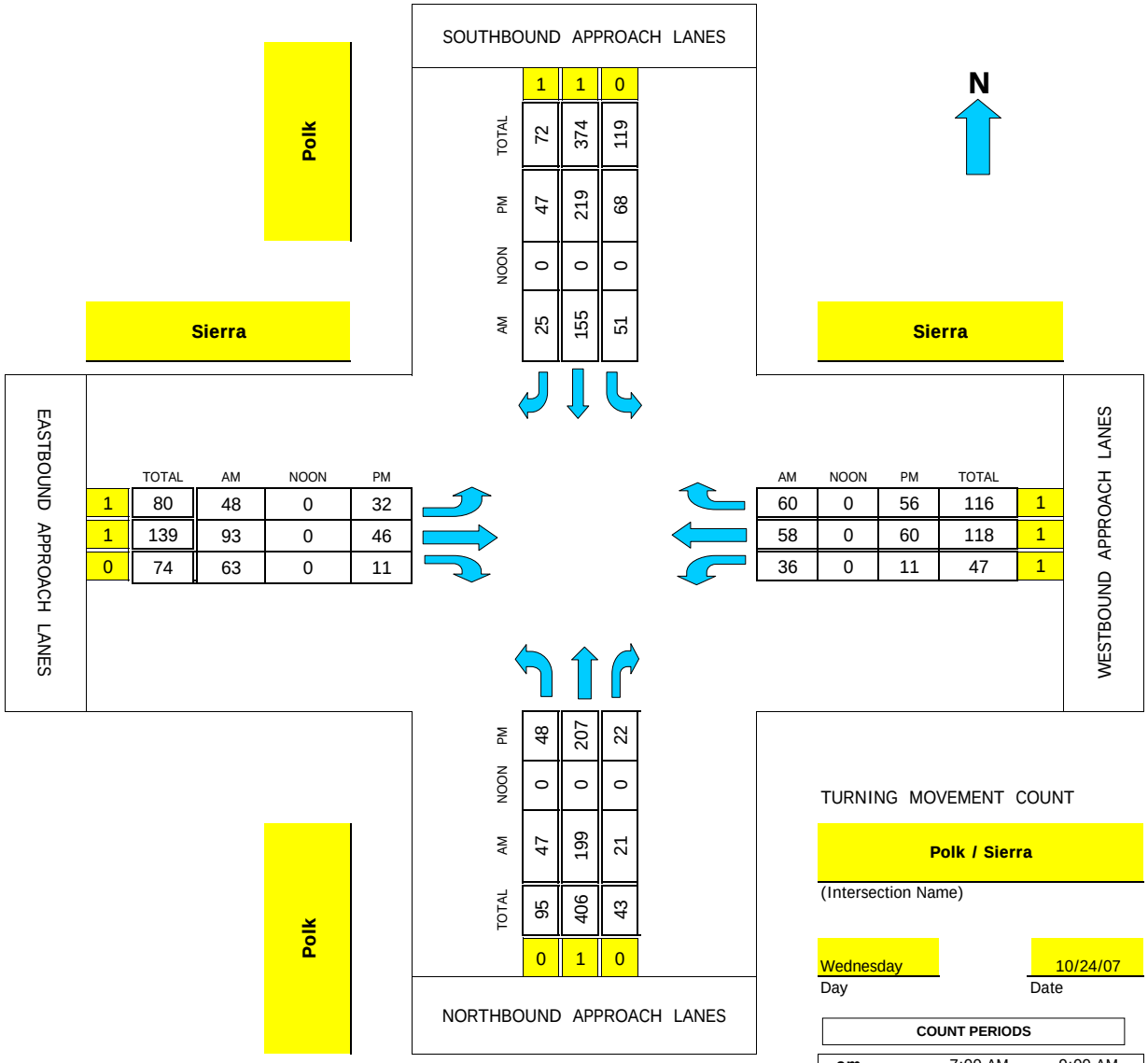
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Polk/Sierra

Project #: 07-8202-015



	TOTAL	AM	NOON	PM
1	72	25	0	47
1	374	155	0	219
0	119	51	0	68

	TOTAL	AM	NOON	PM
1	80	48	0	32
1	139	93	0	46
0	74	63	0	11

	AM	NOON	PM	TOTAL
1	60	0	56	116
1	58	0	60	118
1	36	0	11	47

	TOTAL	AM	NOON	PM
0	95	47	0	48
1	406	199	0	207
0	43	21	0	22

TURNING MOVEMENT COUNT

Polk / Sierra

(Intersection Name)

Wednesday — Day

10/24/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: 4-Way Stop Sign

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	500 PM

Intersection Turning Movement

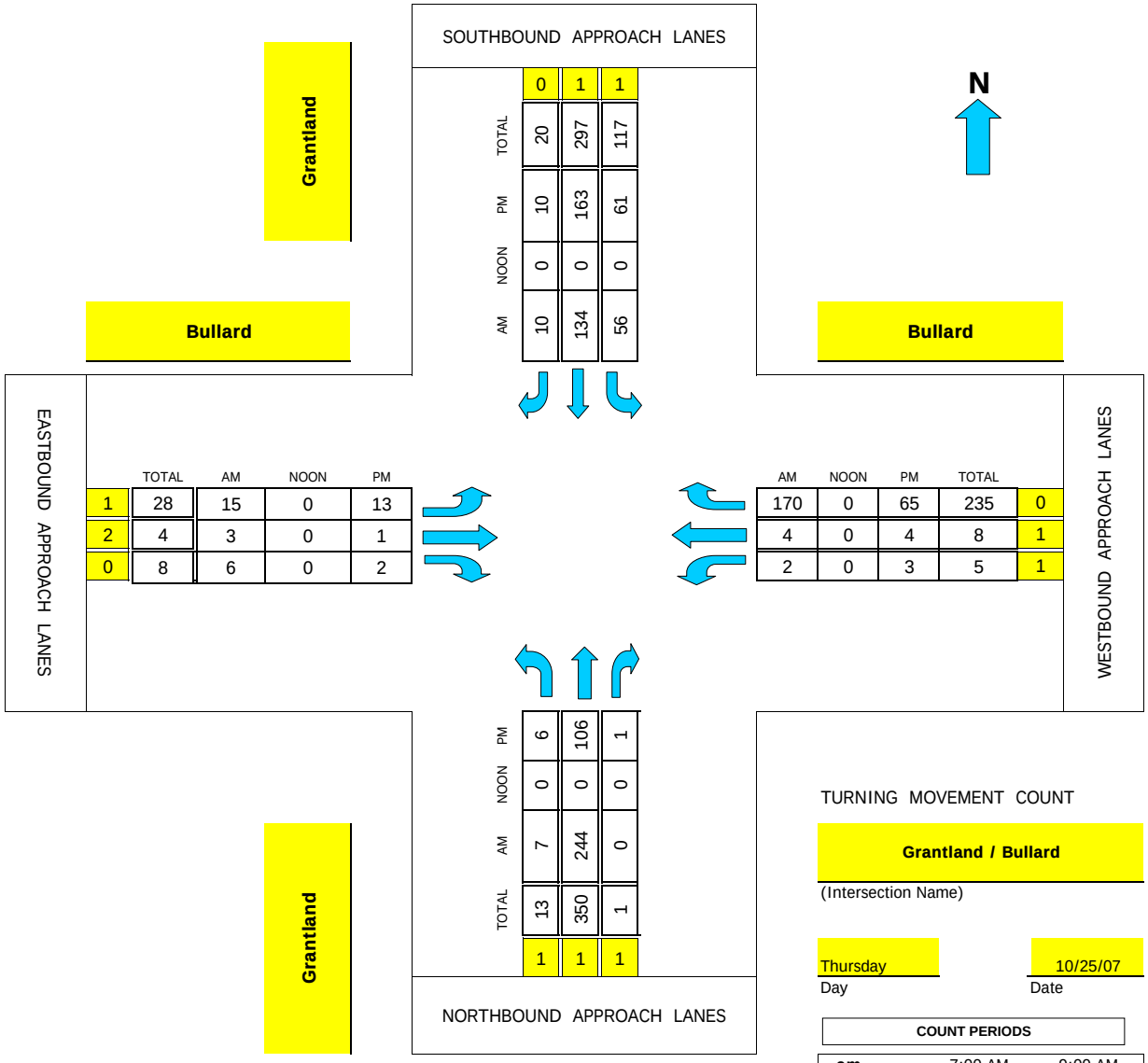
Prepared by:

NDS

National Data & Surveying Services

TMC Summary of Grantland/Bullard

Project #: 07-8202-029



	TOTAL	AM	NOON	PM
0	1	1		
20	297	117	TOTAL	
10	163	61	PM	
0	0	0	NOON	
10	134	56	AM	

	TOTAL	AM	NOON	PM
1	28	15	0	13
2	4	3	0	1
0	8	6	0	2

AM	NOON	PM	TOTAL	
170	0	65	235	0
4	0	4	8	1
2	0	3	5	1

	TOTAL	AM	NOON	PM
	13	7	0	6
	350	244	0	106
	1	0	0	1
	1	1	1	

TURNING MOVEMENT COUNT

Grantland / Bullard

(Intersection Name)

Thursday — Day

10/25/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: 2-way stop sign (EW)

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	500 PM

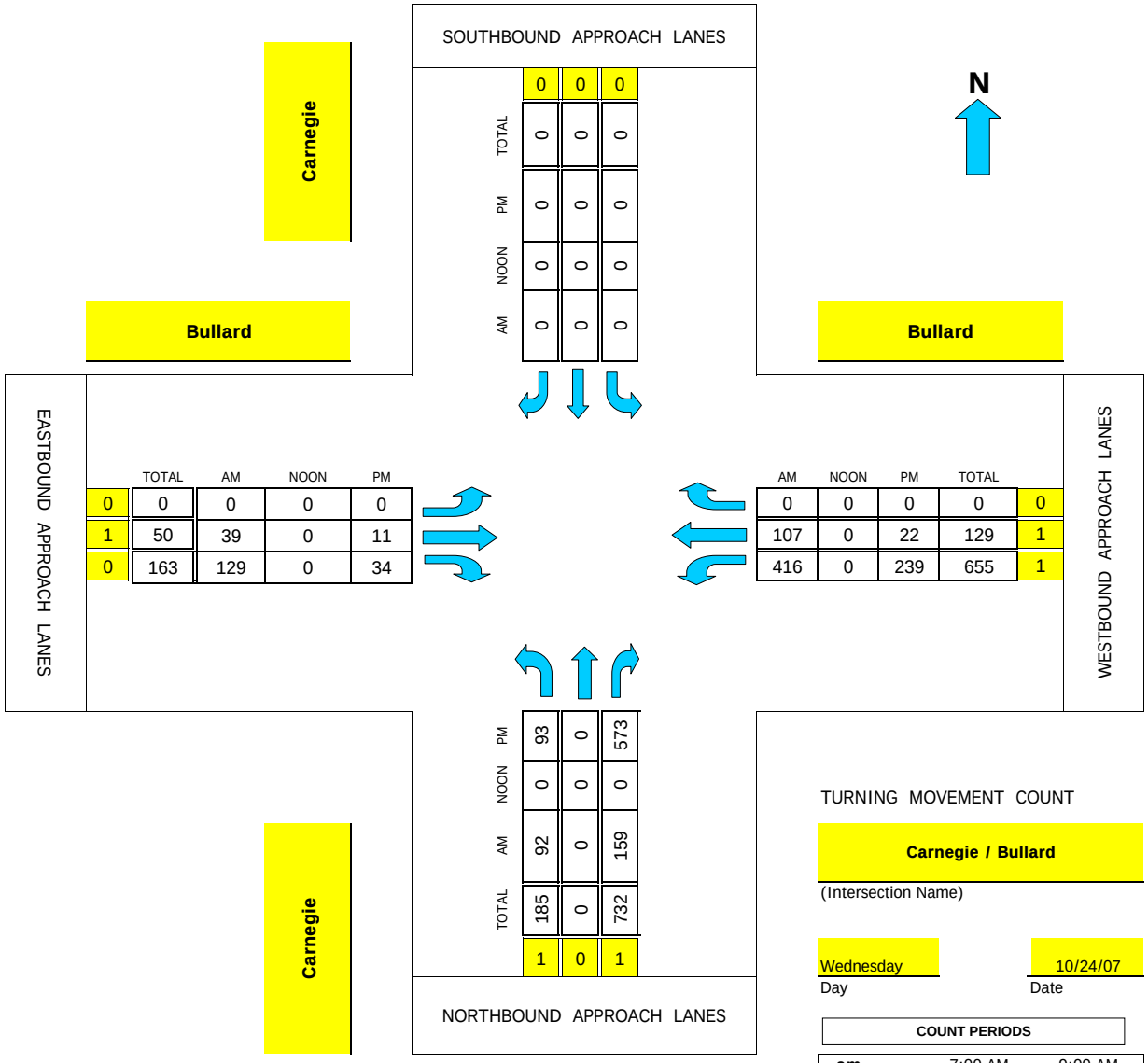
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Carnegie / Bullard

Project #: 07-8202-022



	TOTAL	AM	NOON	PM
0	0	0	0	0
1	50	39	0	11
0	163	129	0	34

	AM	NOON	PM	TOTAL
0	0	0	0	0
1	107	0	22	129
1	416	0	239	655

TOTAL	0	0	0
PM	0	0	0
NOON	0	0	0
AM	0	0	0
	0	0	0

PM	93	0	573
NOON	0	0	0
AM	92	0	159
TOTAL	185	0	732
	1	0	1

TURNING MOVEMENT COUNT

Carnegie / Bullard

(Intersection Name)

Wednesday — Day

10/24/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: 3 Way Stop Signs- Dante= N/S- Bullard= E/W Turn Lane Indicators at NL and WL only-

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

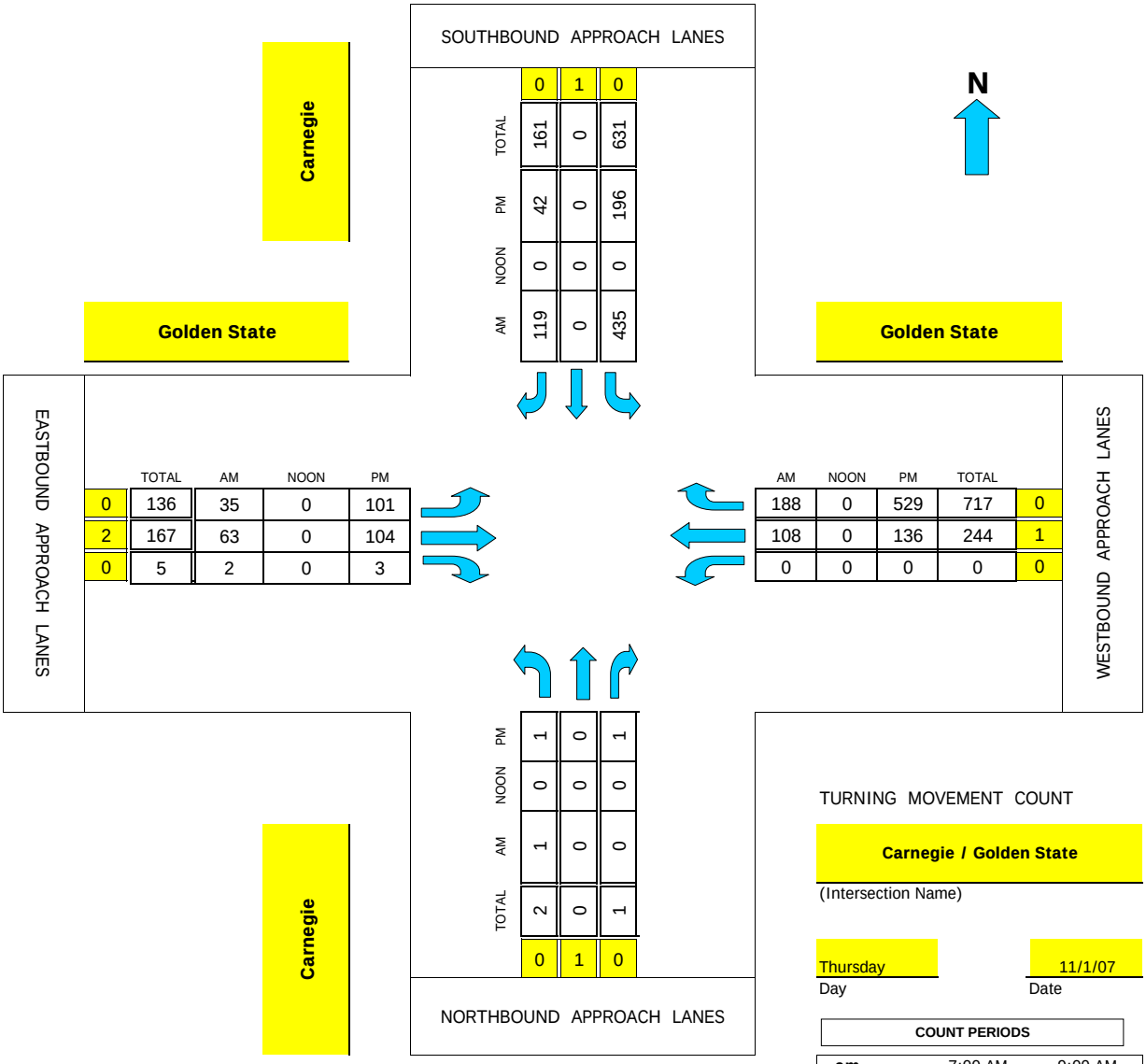
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Carnegie / Golden State

Project #: 07-8202-021



	TOTAL	AM	NOON	PM
0	161	119	0	42
1	0	0	0	0
0	631	435	0	196

	TOTAL	AM	NOON	PM
0	136	35	0	101
2	167	63	0	104
0	5	2	0	3

AM	NOON	PM	TOTAL	
188	0	529	717	0
108	0	136	244	1
0	0	0	0	0

	TOTAL	AM	NOON	PM
0	2	1	0	1
1	0	0	0	0
0	1	0	0	1

TURNING MOVEMENT COUNT

Carnegie / Golden State

(Intersection Name)

Thursday — Day

11/1/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: 3-WAY STOP

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

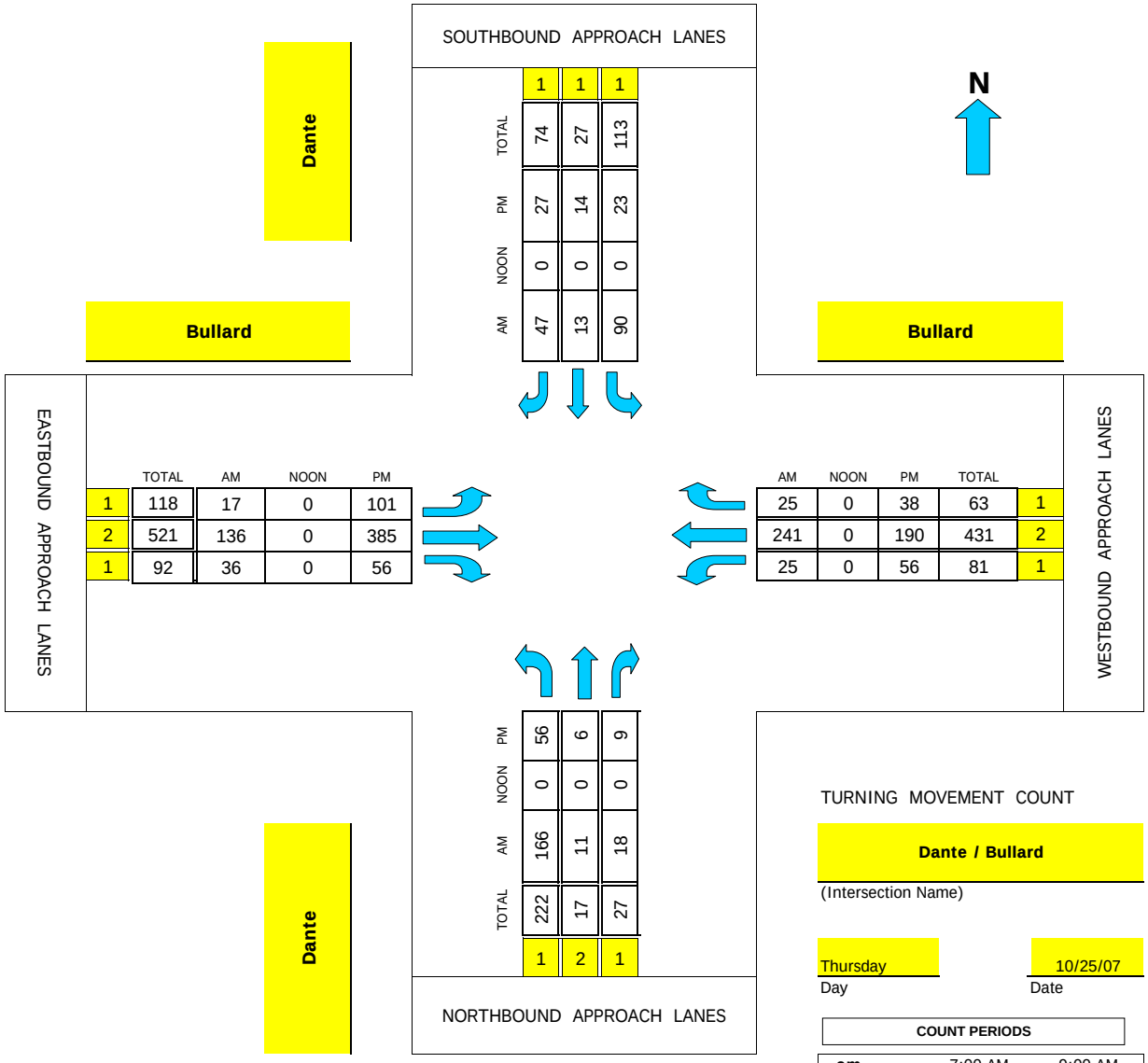
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Dante/Bullard

Project #: 07-8202-026



	TOTAL	AM	NOON	PM
1	74	47	0	27
1	27	13	0	14
1	113	90	0	23

	TOTAL	AM	NOON	PM
1	118	17	0	101
2	521	136	0	385
1	92	36	0	56

	AM	NOON	PM	TOTAL
1	25	0	38	63
2	241	0	190	431
1	25	0	56	81

	TOTAL	AM	NOON	PM
1	222	166	0	56
2	17	11	0	6
1	27	18	0	9

TURNING MOVEMENT COUNT

Dante / Bullard

(Intersection Name)

Thursday — Day

10/25/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: 4-way stop sign

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	500 PM

Intersection Turning Movement

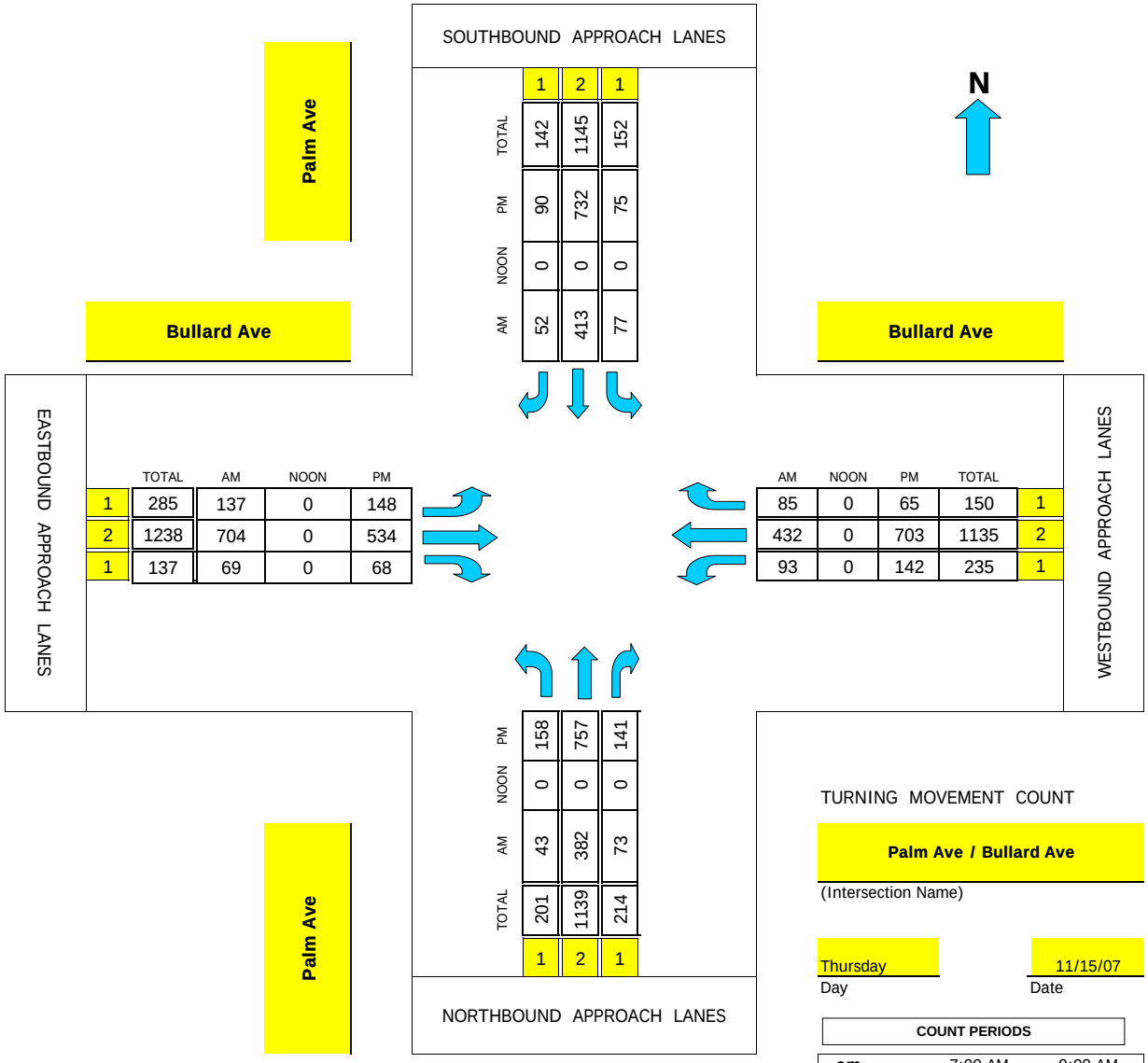
Prepared by:

NDS

National Data & Surveying Services

TMC Summary of Palm Ave/Bullard Ave

Project #: 07-8218-004



	TOTAL	AM	NOON	PM
1	142	52	0	90
2	1145	413	0	732
1	152	77	0	75

	TOTAL	AM	NOON	PM
1	285	137	0	148
2	1238	704	0	534
1	137	69	0	68

AM	NOON	PM	TOTAL	
85	0	65	150	1
432	0	703	1135	2
93	0	142	235	1

	TOTAL	AM	NOON	PM
1	201	43	0	158
2	1139	382	0	757
1	214	73	0	141

TURNING MOVEMENT COUNT

Palm Ave / Bullard Ave

(Intersection Name)

Thursday — Day

11/15/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized;

AM PEAK HOUR	745 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

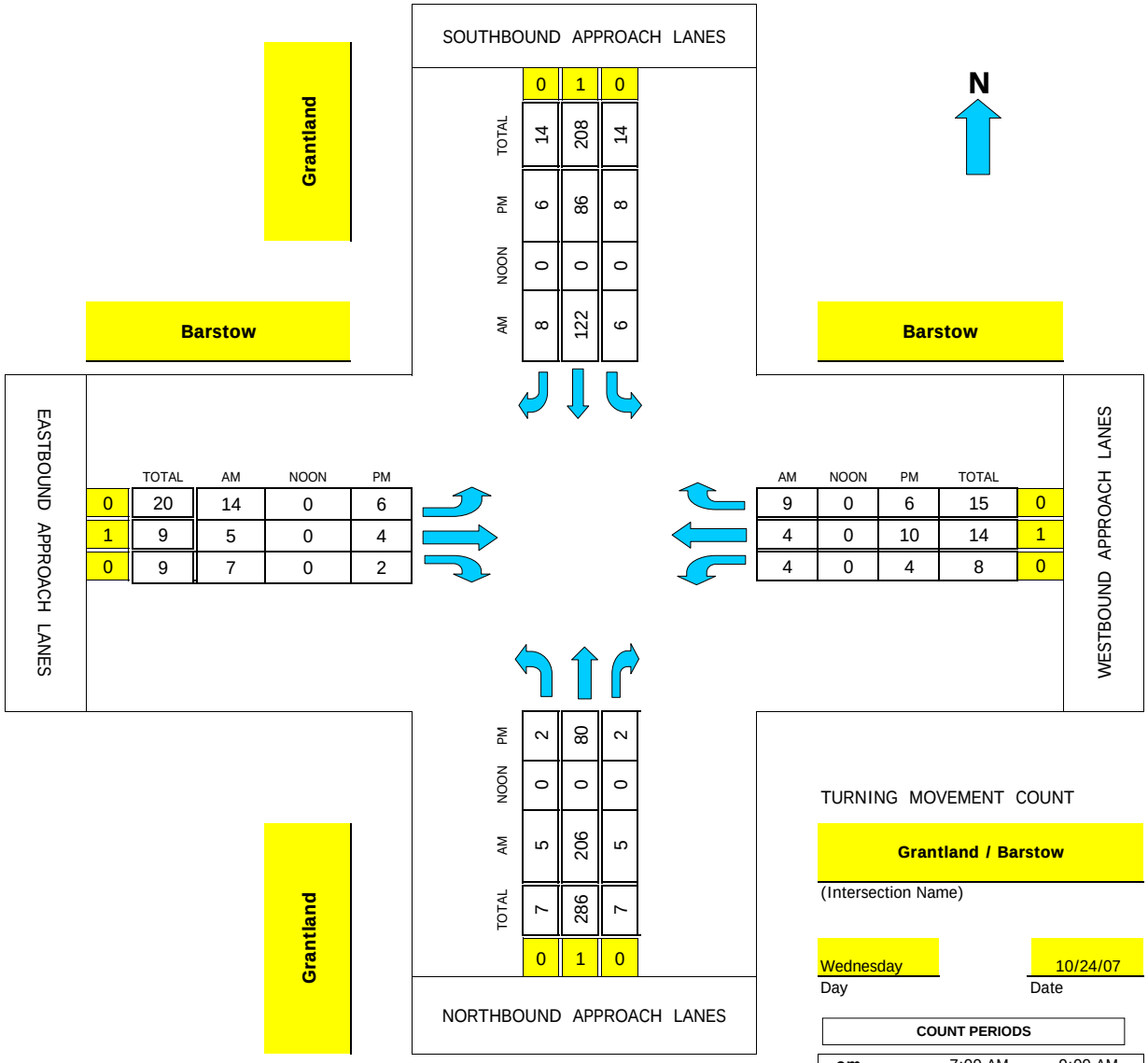
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Grantland/Barstow

Project #: 07-8202-027



TURNING MOVEMENT COUNT

Grantland / Barstow

(Intersection Name)

Wednesday — Day

10/24/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: 2-Way Stop Sign (EW)

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	415 PM

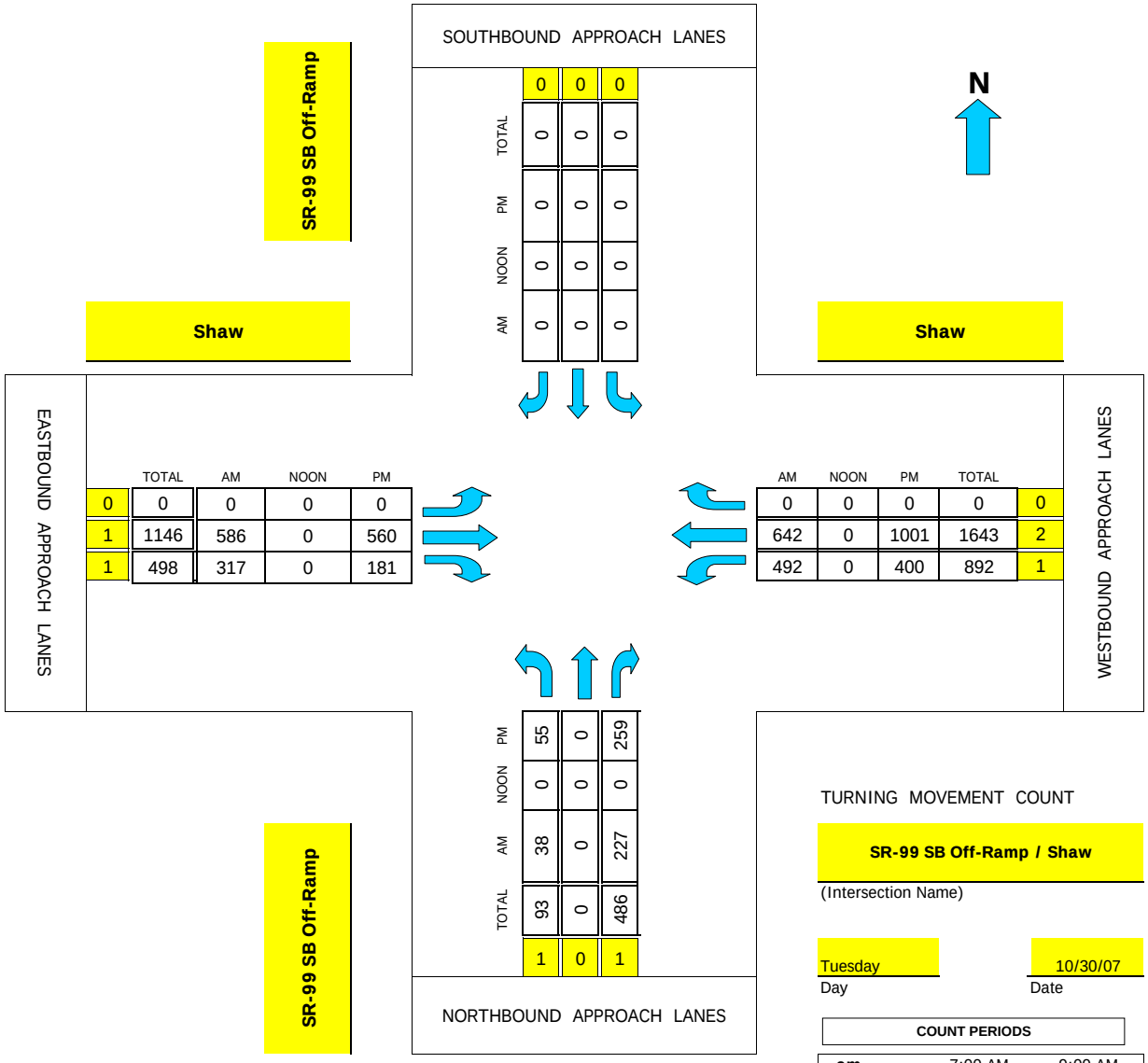
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of SR-99 SB Off-Ramp/Shaw

Project #: 07-8202-024



	TOTAL	AM	NOON	PM
0	0	0	0	0
1	1146	586	0	560
1	498	317	0	181

AM	NOON	PM	TOTAL	
0	0	0	0	0
642	0	1001	1643	2
492	0	400	892	1

	0	0	0
TOTAL	0	0	0
PM	0	0	0
NOON	0	0	0
AM	0	0	0

PM	55	0	259
NOON	0	0	0
AM	38	0	227
TOTAL	93	0	486
	1	0	1

TURNING MOVEMENT COUNT

SR-99 SB Off-Ramp / Shaw

(Intersection Name)

Tuesday — Day

10/30/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: SIGNALET/WTNL/NRWT/WL

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	430 PM

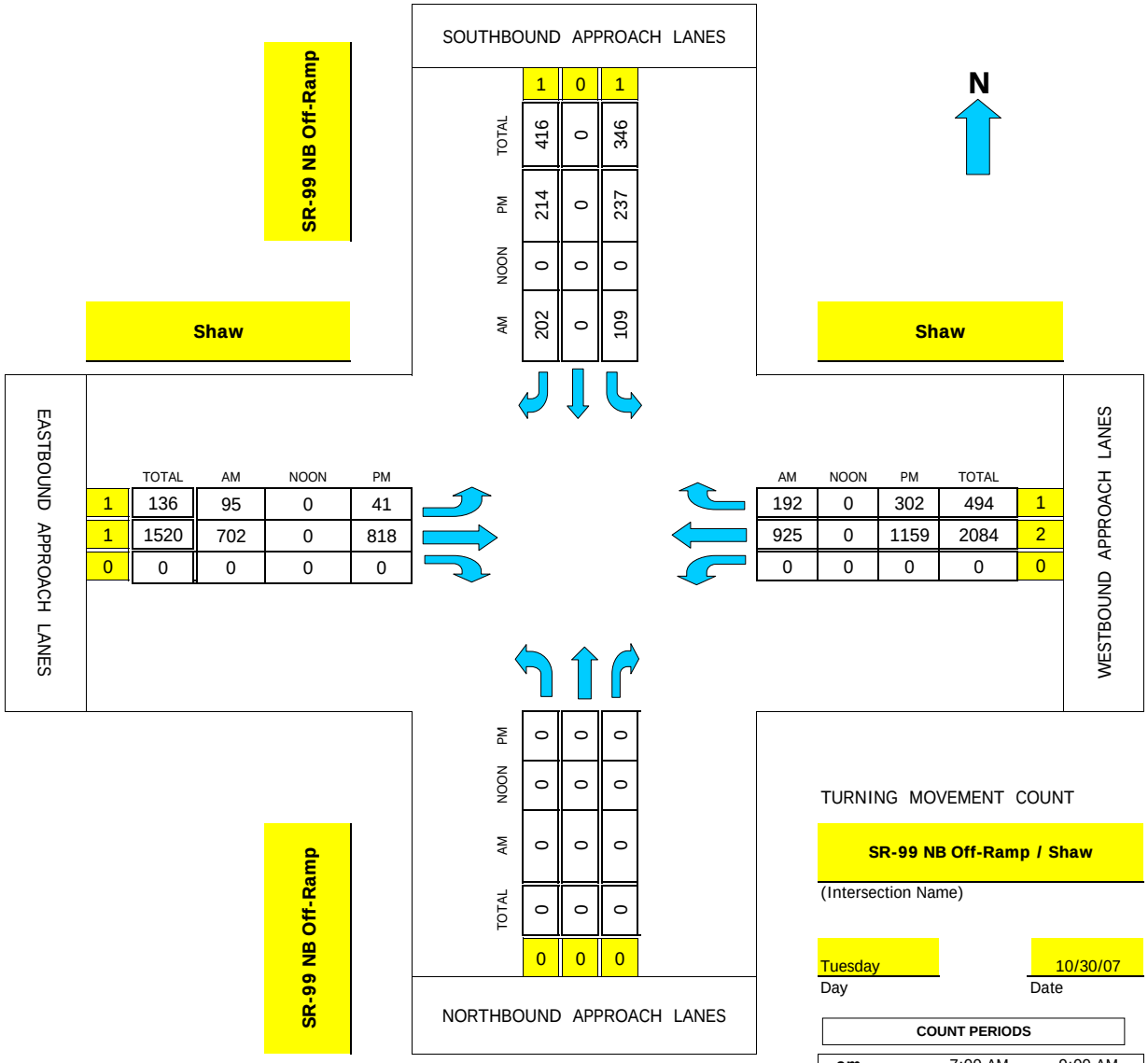
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of SR-99 NB Off-Ramp/Shaw

Project #: 07-8202-025



TURNING MOVEMENT COUNT

SR-99 NB Off-Ramp / Shaw

(Intersection Name)

Tuesday — Day

10/30/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: 3 Way Stop Lights- No identifiable turn lane indicators-

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	500 PM

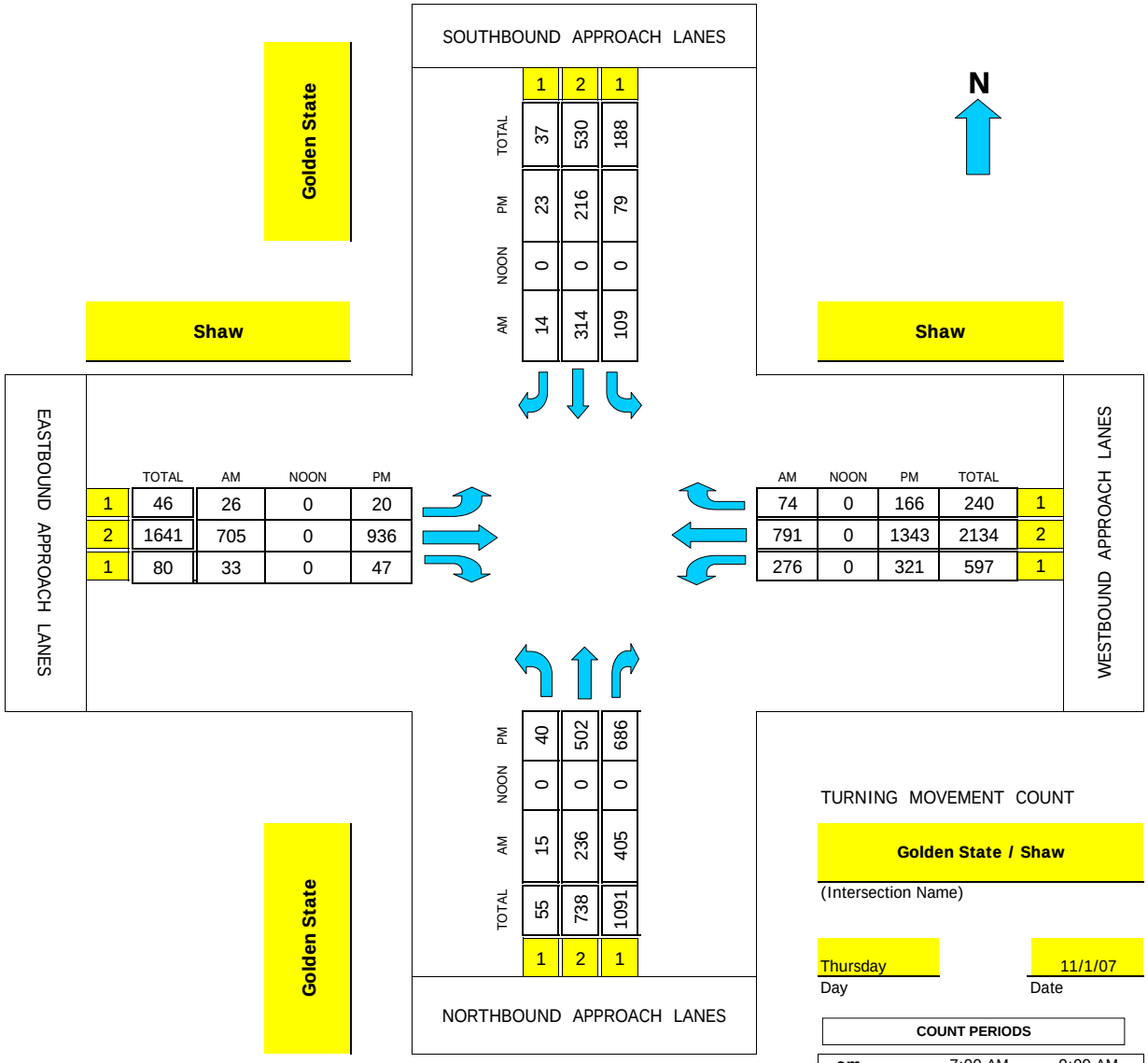
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Golden State/Shaw

Project #: 07-8202-023



	TOTAL	AM	NOON	PM
1	37	14	0	23
2	530	314	0	216
1	188	109	0	79

	TOTAL	AM	NOON	PM
1	46	26	0	20
2	1641	705	0	936
1	80	33	0	47

AM	NOON	PM	TOTAL	
74	0	166	240	1
791	0	1343	2134	2
276	0	321	597	1

	TOTAL	AM	NOON	PM
1	55	15	0	40
2	738	236	0	502
1	1091	405	0	686

TURNING MOVEMENT COUNT

Golden State / Shaw

(Intersection Name)

Thursday — Day

11/1/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized;

AM PEAK HOUR	715 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	430 PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Brawley Ave/Shaw Ave

Project #: 07-8218-010

Brawley Ave

Shaw Ave

SOUTHBOUND APPROACH LANES

	1	2	2
TOTAL	281	869	489
PM	151	308	309
NOON	0	0	0
AM	130	561	180

N

Shaw Ave

EASTBOUND APPROACH LANES

	TOTAL	AM	NOON	PM
2	354	92	0	262
3	2249	920	0	1329
1	182	55	0	127

AM	NOON	PM	TOTAL	
56	0	159	215	1
833	0	1472	2305	3
103	0	184	287	2

WESTBOUND APPROACH LANES

Brawley Ave

	2	2	1
TOTAL	388	772	189
AM	148	161	57
NOON	0	0	0
PM	240	611	132

NORTHBOUND APPROACH LANES

TURNING MOVEMENT COUNT

Brawley Ave / Shaw Ave

(Intersection Name)

Thursday — Day

11/15/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	730 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	430 PM

Intersection Turning Movement

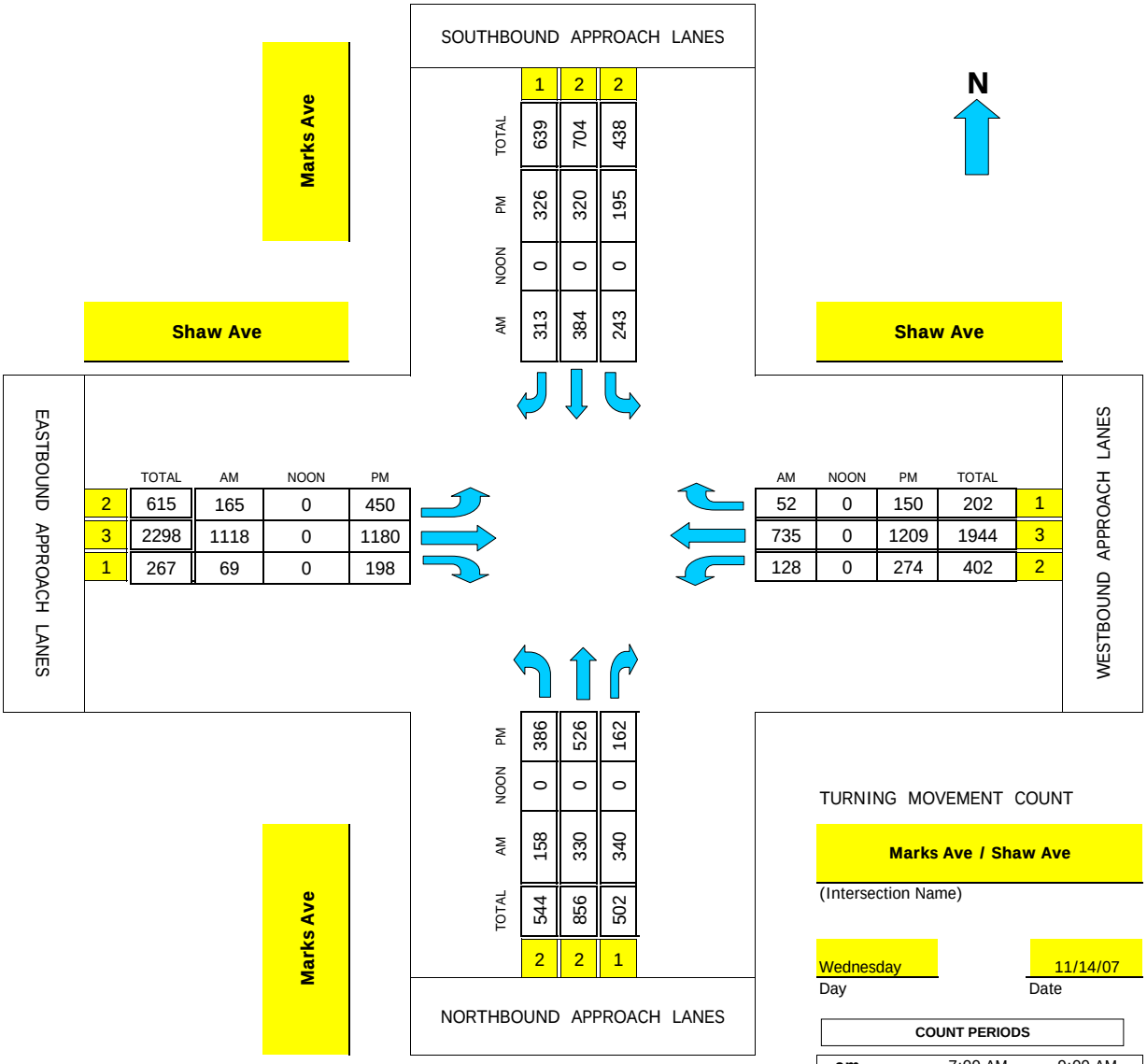
Prepared by:

NDS

National Data & Surveying Services

TMC Summary of Marks Ave/Shaw Ave

Project #: 07-8218-005



	TOTAL	AM	NOON	PM
1	639	313	0	326
2	704	384	0	320
2	438	243	0	195

	TOTAL	AM	NOON	PM
2	615	165	0	450
3	2298	1118	0	1180
1	267	69	0	198

	AM	NOON	PM	TOTAL
1	52	0	150	202
3	735	0	1209	1944
2	128	0	274	402

	TOTAL	AM	NOON	PM
2	544	158	0	386
2	856	330	0	526
1	502	340	0	162

TURNING MOVEMENT COUNT

Marks Ave / Shaw Ave

(Intersection Name)

Wednesday — Day

11/14/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized;

AM PEAK HOUR	730 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	430 PM

Intersection Turning Movement

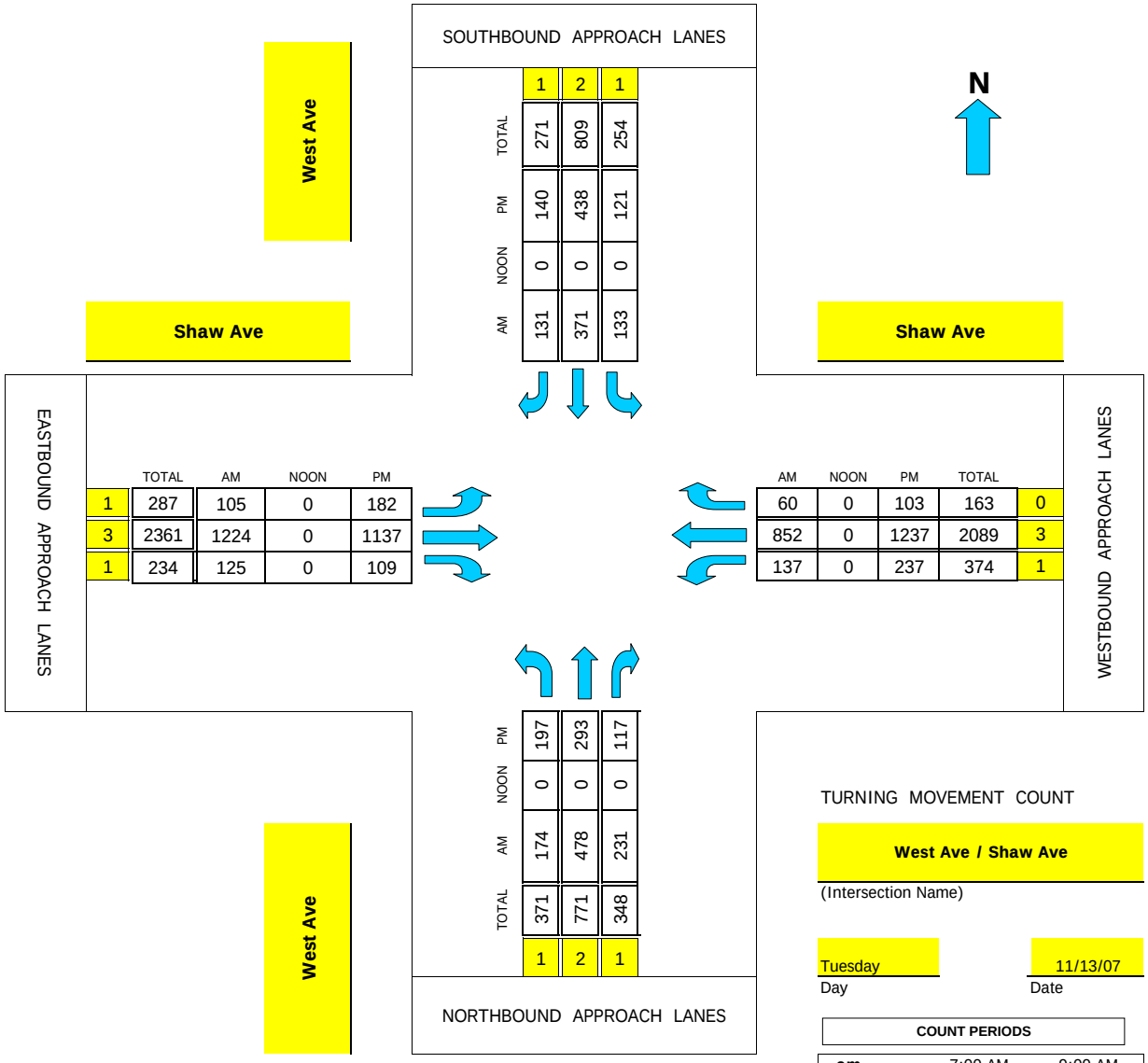
Prepared by:

NDS

National Data & Surveying Services

TMC Summary of West Ave/Shaw Ave

Project #: 07-8218-006



	TOTAL	AM	NOON	PM
1	271	131	0	140
2	809	371	0	438
1	254	133	0	121

	TOTAL	AM	NOON	PM
1	287	105	0	182
3	2361	1224	0	1137
1	234	125	0	109

AM	NOON	PM	TOTAL	
60	0	103	163	0
852	0	1237	2089	3
137	0	237	374	1

	TOTAL	AM	NOON	PM
1	371	174	0	197
2	771	478	0	293
1	348	231	0	117

TURNING MOVEMENT COUNT

West Ave / Shaw Ave

(Intersection Name)

Tuesday — Day

11/13/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized;

AM PEAK HOUR	730 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

Intersection Turning Movement

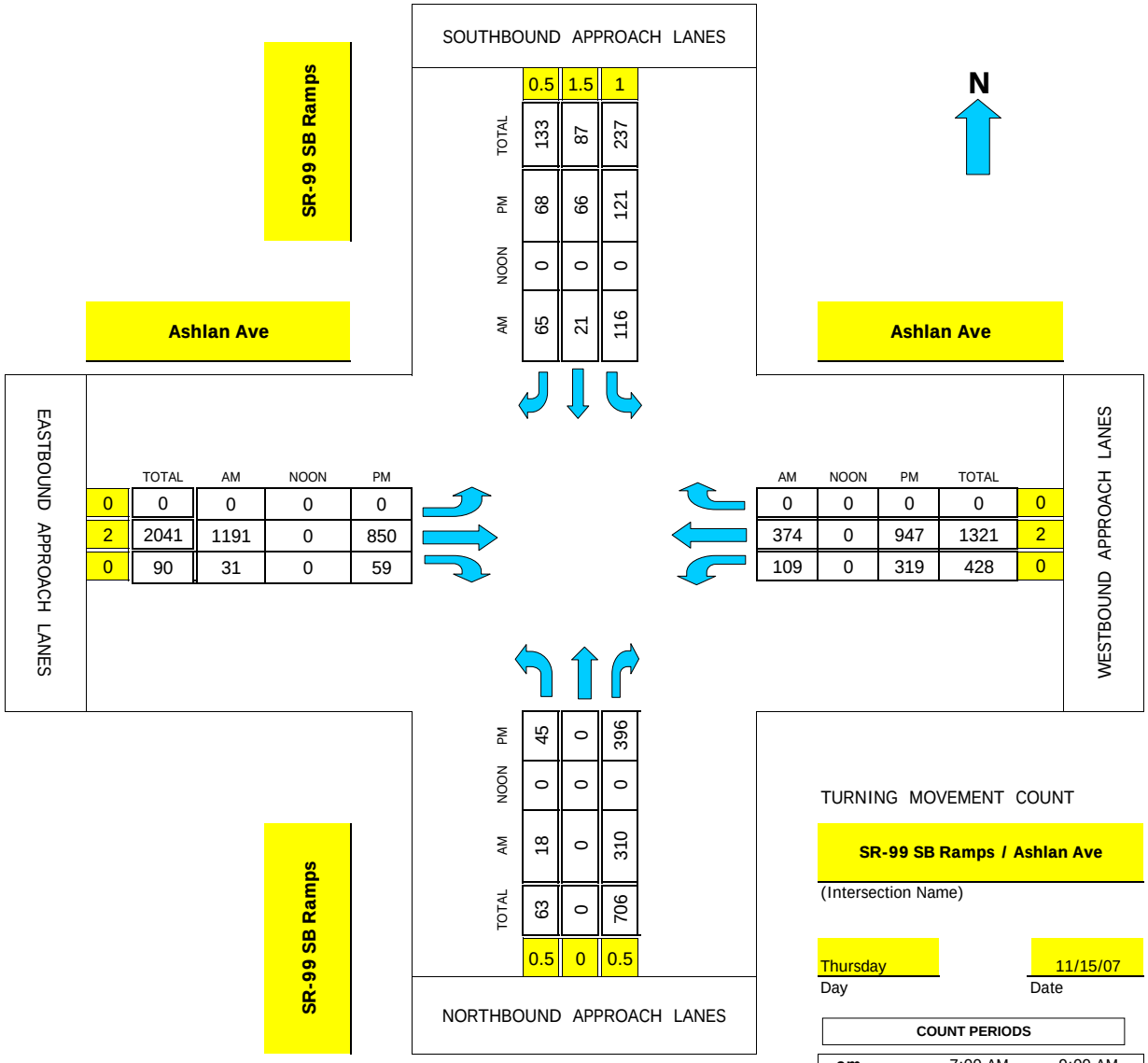
Prepared by:

NDS

National Data & Surveying Services

TMC Summary of SR-99 SB Ramps/Ashlan Ave

Project #: 07-8218-007



	0.5	1.5	1
TOTAL	133	87	237
PM	68	66	121
NOON	0	0	0
AM	65	21	116

	TOTAL	AM	NOON	PM
0	0	0	0	0
2	2041	1191	0	850
0	90	31	0	59

AM	NOON	PM	TOTAL	
0	0	0	0	0
374	0	947	1321	2
109	0	319	428	0

PM	45	0	396
NOON	0	0	0
AM	18	0	310
TOTAL	63	0	706
	0.5	0	0.5

TURNING MOVEMENT COUNT

SR-99 SB Ramps / Ashlan Ave

(Intersection Name)

Thursday — Day

11/15/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

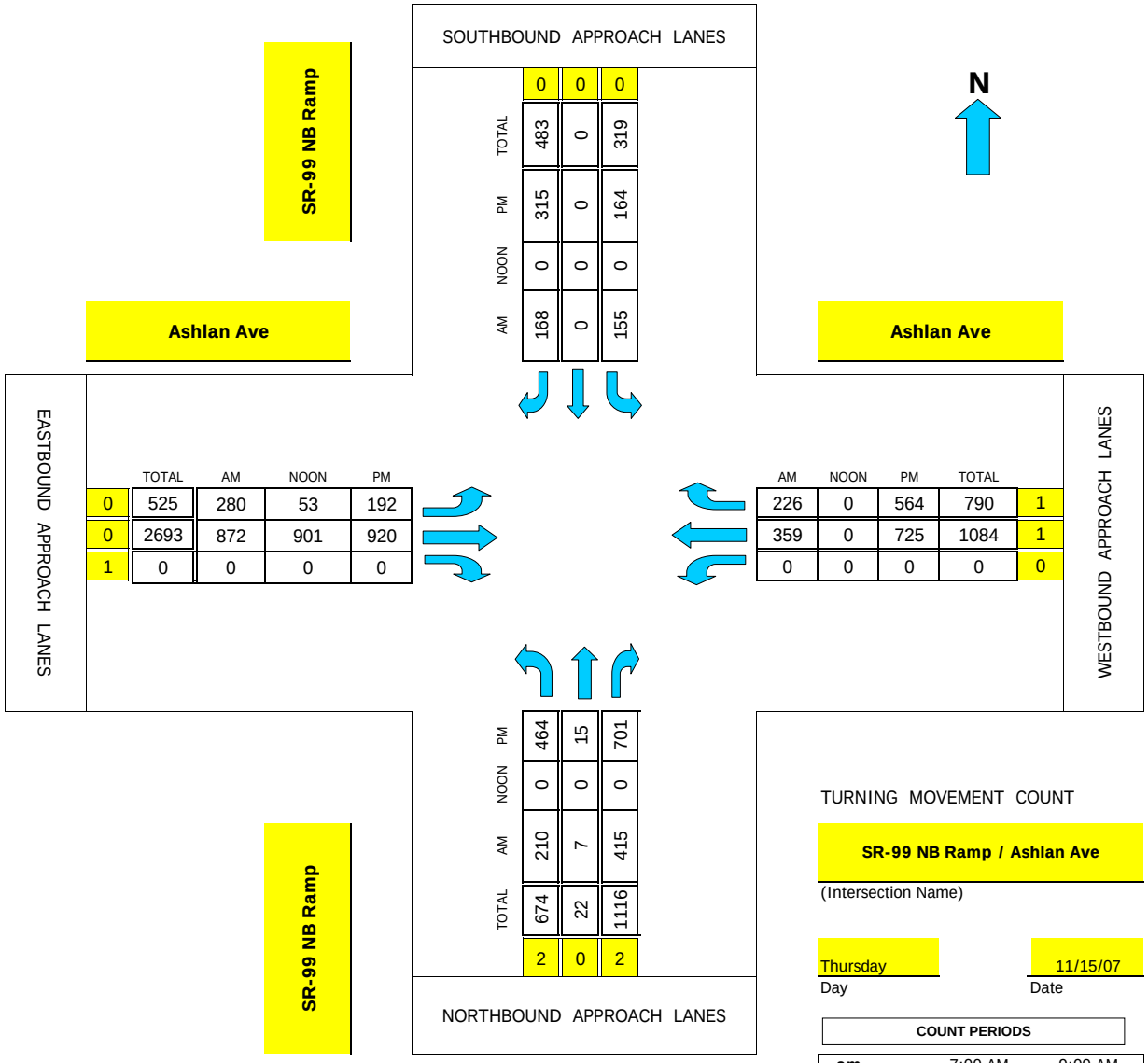
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of SR-99 NB Ramp/Ashlan Ave

Project #: 07-8218-008



	TOTAL	AM	NOON	PM
0	0	0	0	0
	483	168	0	315
	0	0	0	0
	319	155	0	164

	TOTAL	AM	NOON	PM
0	525	280	53	192
0	2693	872	901	920
1	0	0	0	0

AM	NOON	PM	TOTAL	
226	0	564	790	1
359	0	725	1084	1
0	0	0	0	0

	TOTAL	AM	NOON	PM
	674	210	0	464
	22	7	0	15
	1116	415	0	701
2	0	2		

TURNING MOVEMENT COUNT

SR-99 NB Ramp / Ashlan Ave

(Intersection Name)

Thursday — Day

11/15/07 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	715 AM
NOON PEAK HOUR	500 PM
PM PEAK HOUR	430 PM

APPENDIX C

INTERSECTION LEVEL OF SERVICE WORKSHEETS

EXISTING TRAFFIC CONDITION

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	94	29	11	209	554	138
Peak Hour Factor	0.66	0.66	0.91	0.91	0.73	0.73
Hourly flow rate (vph)	142	44	12	230	759	189

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	186	12	230	759	189
Volume Left (vph)	142	0	0	759	0
Volume Right (vph)	0	0	230	0	189
Hadj (s)	0.24	0.08	-0.62	0.59	-0.62
Departure Headway (s)	6.9	7.0	6.3	6.5	5.3
Degree Utilization, x	0.36	0.02	0.40	1.36	0.28
Capacity (veh/h)	515	498	558	570	672
Control Delay (s)	13.6	9.0	12.3	192.2	9.0
Approach Delay (s)	13.6	12.2		155.7	
Approach LOS	B	B		F	

Intersection Summary			
Delay	111.2		
HCM Level of Service	F		
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	16	31	0	304	765	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	34	0	330	832	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type	None					
Median storage veh)						
Upstream signal (ft)					1090	
pX, platoon unblocked	0.68	0.68	0.68			
vC, conflicting volume	1162	832	832			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1238	752	752			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	88	100			
cM capacity (veh/h)	132	279	583			

Direction, Lane #	SE 1	NE 1	SW 1
Volume Total	51	330	832
Volume Left	17	0	0
Volume Right	34	0	0
cSH	387	1700	1700
Volume to Capacity	0.13	0.19	0.49
Queue Length 95th (ft)	11	0	0
Control Delay (s)	25.4	0.0	0.0
Lane LOS	D		
Approach Delay (s)	25.4	0.0	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	42	337	317	0	0	727
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	366	345	0	0	790
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						594
pX, platoon unblocked	0.67					
vC, conflicting volume	1135	345			345	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1200	345			345	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	67	48			100	
cM capacity (veh/h)	138	698			1214	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	412	345	790
Volume Left	46	0	0
Volume Right	366	0	0
cSH	481	1700	1700
Volume to Capacity	0.86	0.20	0.46
Queue Length 95th (ft)	221	0	0
Control Delay (s)	42.8	0.0	0.0
Lane LOS	E		
Approach Delay (s)	42.8	0.0	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	11.4		
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1810	1538	1719	1810	1538	1719	3401		1719	1810	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1719	1810	1538	1719	1810	1538	1719	3401		1719	1810	1538
Volume (vph)	205	49	126	50	150	45	45	552	42	40	569	435
Peak-hour factor, PHF	0.87	0.87	0.87	0.93	0.93	0.93	0.74	0.74	0.74	0.86	0.86	0.86
Adj. Flow (vph)	236	56	145	54	161	48	61	746	57	47	662	506
RTOR Reduction (vph)	0	0	111	0	0	37	0	5	0	0	0	283
Lane Group Flow (vph)	236	56	34	54	161	11	61	798	0	47	662	223
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	13.1	20.7	20.7	5.9	13.5	13.5	6.3	40.7		4.7	39.1	39.1
Effective Green, g (s)	13.6	21.2	21.2	6.4	14.0	14.0	6.8	41.2		5.2	39.6	39.6
Actuated g/C Ratio	0.15	0.24	0.24	0.07	0.16	0.16	0.08	0.46		0.06	0.44	0.44
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	260	426	362	122	282	239	130	1557		99	796	677
v/s Ratio Prot	c0.14	0.03		0.03	c0.09		c0.04	0.23		0.03	c0.37	
v/s Ratio Perm			0.02			0.01						0.14
v/c Ratio	0.91	0.13	0.09	0.44	0.57	0.05	0.47	0.51		0.47	0.83	0.33
Uniform Delay, d1	37.6	27.1	26.9	40.1	35.2	32.3	39.9	17.3		41.1	22.3	16.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	32.2	0.1	0.1	2.6	2.8	0.1	2.7	1.2		3.6	9.9	1.3
Delay (s)	69.8	27.3	27.0	42.6	38.0	32.4	42.5	18.5		44.6	32.1	17.8
Level of Service	E	C	C	D	D	C	D	B		D	C	B
Approach Delay (s)		50.1			37.9			20.2			26.6	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	29.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	2	0	787	0	3	1068	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	2	0	855	0	3	1161	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								560				
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89		
vC, conflicting volume	1597	2023	580	1442	2023	428	1161			855		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1548	2026	580	1374	2026	236	1161			716		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	69	51	457	93	51	683	598			785		

Direction, Lane #	SE 1	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	0	2	428	428	584	580
Volume Left	0	0	0	0	3	0
Volume Right	0	2	0	0	0	0
cSH	1700	683	598	1700	785	1700
Volume to Capacity	0.00	0.00	0.00	0.25	0.00	0.34
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	10.3	0.0	0.0	0.1	0.0
Lane LOS	A	B			A	
Approach Delay (s)	0.0	10.3	0.0		0.1	
Approach LOS	A	B				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3438	1538	1719	3438	1719	1538
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3438	1538	1719	3438	1719	1538
Volume (vph)	506	244	53	925	256	138
Peak-hour factor, PHF	0.73	0.73	0.93	0.93	0.69	0.69
Adj. Flow (vph)	693	334	57	995	371	200
RTOR Reduction (vph)	0	231	0	0	0	123
Lane Group Flow (vph)	693	103	57	995	371	77
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	16.5	16.5	4.4	25.4	20.6	20.6
Effective Green, g (s)	17.0	17.0	4.9	25.9	21.1	21.1
Actuated g/C Ratio	0.31	0.31	0.09	0.47	0.38	0.38
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1063	475	153	1619	659	590
v/s Ratio Prot	0.20		0.03	c0.29	c0.22	
v/s Ratio Perm		0.07				0.05
v/c Ratio	0.65	0.22	0.37	0.61	0.56	0.13
Uniform Delay, d1	16.4	14.1	23.6	10.8	13.3	11.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.2	1.5	0.7	3.5	0.5
Delay (s)	17.9	14.3	25.1	11.5	16.8	11.5
Level of Service	B	B	C	B	B	B
Approach Delay (s)	16.7			12.3	14.9	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	3438	1538	3335	3438	1538	3335	1608		3335	1688	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1719	3438	1538	3335	3438	1538	3335	1608		3335	1688	
Volume (vph)	60	563	7	145	793	5	37	28	101	5	114	129
Peak-hour factor, PHF	0.79	0.79	0.79	0.81	0.81	0.81	0.69	0.69	0.69	0.75	0.75	0.75
Adj. Flow (vph)	76	713	9	179	979	6	54	41	146	7	152	172
RTOR Reduction (vph)	0	0	6	0	0	3	0	96	0	0	54	0
Lane Group Flow (vph)	76	713	3	179	979	3	54	91	0	7	270	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	2%	5%	5%	2%	5%
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	5.9	20.1	20.1	7.3	21.5	21.5	4.2	23.4		1.2	20.4	
Effective Green, g (s)	6.4	20.6	20.6	7.8	22.0	22.0	4.7	23.9		1.7	20.9	
Actuated g/C Ratio	0.09	0.29	0.29	0.11	0.31	0.31	0.07	0.34		0.02	0.30	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	157	1012	453	372	1081	483	224	549		81	504	
v/s Ratio Prot	0.04	0.21		c0.05	c0.28		c0.02	c0.06		0.00	c0.16	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.48	0.70	0.01	0.48	0.91	0.01	0.24	0.17		0.09	0.54	
Uniform Delay, d1	30.2	22.0	17.5	29.2	23.0	16.5	31.0	16.1		33.4	20.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.3	2.3	0.0	1.0	10.7	0.0	0.6	0.6		0.5	4.0	
Delay (s)	32.6	24.2	17.5	30.2	33.7	16.5	31.5	16.7		33.9	24.5	
Level of Service	C	C	B	C	C	B	C	B		C	C	
Approach Delay (s)		25.0			33.1			20.1			24.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3335	3438	1538	1719	3438	1538	3335	1566		3335	1863	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3335	3438	1538	1719	3438	1538	3335	1566		3335	1863	1538
Volume (vph)	6	638	78	85	792	66	108	25	261	117	51	24
Peak-hour factor, PHF	0.84	0.84	0.84	0.76	0.76	0.76	0.74	0.74	0.74	0.73	0.73	0.73
Adj. Flow (vph)	7	760	93	112	1042	87	146	34	353	160	70	33
RTOR Reduction (vph)	0	0	61	0	0	34	0	203	0	0	0	25
Lane Group Flow (vph)	7	760	32	112	1042	53	146	184	0	160	70	8
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	2%	5%	5%	2%	5%
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	1.2	25.6	25.6	6.0	30.4	30.4	7.6	17.6		7.8	17.8	17.8
Effective Green, g (s)	1.7	26.1	26.1	6.5	30.9	30.9	8.1	18.1		8.3	18.3	18.3
Actuated g/C Ratio	0.02	0.35	0.35	0.09	0.41	0.41	0.11	0.24		0.11	0.24	0.24
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	76	1196	535	149	1416	634	360	378		369	455	375
v/s Ratio Prot	0.00	0.22		c0.07	c0.30		0.04	c0.12		c0.05	0.04	
v/s Ratio Perm			0.02			0.03						0.01
v/c Ratio	0.09	0.64	0.06	0.75	0.74	0.08	0.41	0.49		0.43	0.15	0.02
Uniform Delay, d1	35.9	20.5	16.3	33.5	18.6	13.4	31.2	24.5		31.2	22.3	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	1.1	0.0	19.1	2.0	0.1	0.7	4.5		0.8	0.7	0.1
Delay (s)	36.4	21.6	16.3	52.5	20.6	13.5	32.0	28.9		32.0	23.0	21.7
Level of Service	D	C	B	D	C	B	C	C		C	C	C
Approach Delay (s)		21.1			23.0			29.7			28.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3335	3539	1538	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3335	3539	1538	3433	3539	1583
Volume (vph)	179	723	130	81	611	108	114	168	131	359	301	204
Peak-hour factor, PHF	0.81	0.81	0.81	0.80	0.80	0.80	0.90	0.90	0.90	0.68	0.68	0.68
Adj. Flow (vph)	221	893	160	101	764	135	127	187	146	528	443	300
RTOR Reduction (vph)	0	0	115	0	0	101	0	0	111	0	0	216
Lane Group Flow (vph)	221	893	45	101	764	34	127	187	35	528	443	84
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	2%	5%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.4	17.6	17.6	5.8	16.0	16.0	5.9	15.1	15.1	8.5	17.7	17.7
Effective Green, g (s)	7.9	18.1	18.1	6.3	16.5	16.5	6.4	15.6	15.6	9.0	18.2	18.2
Actuated g/C Ratio	0.12	0.28	0.28	0.10	0.25	0.25	0.10	0.24	0.24	0.14	0.28	0.28
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	405	1376	428	323	1254	390	328	849	369	475	991	443
v/s Ratio Prot	c0.07	c0.18		0.03	0.15		0.04	0.05		c0.15	c0.13	
v/s Ratio Perm			0.03			0.02			0.02			0.05
v/c Ratio	0.55	0.65	0.10	0.31	0.61	0.09	0.39	0.22	0.09	1.11	0.45	0.19
Uniform Delay, d1	26.9	20.7	17.4	27.3	21.4	18.5	27.5	19.8	19.2	28.0	19.3	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	1.1	0.1	0.6	0.8	0.1	0.8	0.6	0.5	75.4	1.5	0.9
Delay (s)	28.4	21.7	17.5	27.9	22.3	18.6	28.2	20.4	19.7	103.4	20.7	18.7
Level of Service	C	C	B	C	C	B	C	C	B	F	C	B
Approach Delay (s)		22.3			22.3			22.4			54.6	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	32.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor		0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt		1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)		4940	1538	3335	4940	1538		3539		3433		1583
Flt Permitted		1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (perm)		4940	1538	3335	4940	1538		3539		3433		1583
Volume (vph)	0	1222	1	2	800	50	0	1	0	50	0	1
Peak-hour factor, PHF	0.85	0.85	0.85	0.83	0.83	0.83	0.25	0.25	0.25	0.67	0.67	0.67
Adj. Flow (vph)	0	1438	1	2	964	60	0	4	0	75	0	1
RTOR Reduction (vph)	0	0	1	0	0	29	0	0	0	0	0	1
Lane Group Flow (vph)	0	1438	0	2	964	31	0	4	0	75	0	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		35.3	35.3	1.2	41.0	41.0		19.7		5.8		17.9
Effective Green, g (s)		35.8	35.8	1.7	41.5	41.5		20.2		6.3		18.4
Actuated g/C Ratio		0.45	0.45	0.02	0.52	0.52		0.25		0.08		0.23
Clearance Time (s)		4.5	4.5	4.5	4.5	4.5		4.5		4.5		4.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)		2211	688	71	2563	798		894		270		364
v/s Ratio Prot		c0.29		0.00	c0.20			c0.00		c0.02		
v/s Ratio Perm			0.00			0.02						0.00
v/c Ratio		0.65	0.00	0.03	0.38	0.04		0.00		0.28		0.00
Uniform Delay, d1		17.2	12.2	38.3	11.5	9.5		22.4		34.7		23.7
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2		0.7	0.0	0.2	0.1	0.0		0.0		0.6		0.0
Delay (s)		17.9	12.2	38.5	11.6	9.5		22.4		35.3		23.7
Level of Service		B	B	D	B	A		C		D		C
Approach Delay (s)		17.9			11.5			22.4			35.1	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3396		1719	3422		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.69	1.00	1.00	0.71	1.00	1.00
Satd. Flow (perm)	1719	3396		1719	3422		1292	1863	1583	1320	1863	1583
Volume (vph)	58	1147	101	239	704	22	72	70	258	59	79	36
Peak-hour factor, PHF	0.87	0.87	0.87	0.89	0.89	0.89	0.94	0.94	0.94	0.81	0.81	0.81
Adj. Flow (vph)	67	1318	116	269	791	25	77	74	274	73	98	44
RTOR Reduction (vph)	0	7	0	0	2	0	0	0	192	0	0	33
Lane Group Flow (vph)	67	1427	0	269	814	0	77	74	82	73	98	11
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	7.0	40.1		15.2	48.3		21.2	21.2	21.2	21.2	21.2	21.2
Effective Green, g (s)	7.5	40.6		15.7	48.8		21.7	21.7	21.7	21.7	21.7	21.7
Actuated g/C Ratio	0.08	0.45		0.17	0.54		0.24	0.24	0.24	0.24	0.24	0.24
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	143	1532		300	1855		312	449	382	318	449	382
v/s Ratio Prot	0.04	c0.42		c0.16	0.24			0.04			0.05	
v/s Ratio Perm							c0.06		0.05	0.06		0.01
v/c Ratio	0.47	0.93		0.90	0.44		0.25	0.16	0.21	0.23	0.22	0.03
Uniform Delay, d1	39.3	23.4		36.4	12.4		27.6	27.0	27.3	27.4	27.4	26.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	10.6		27.1	0.2		1.9	0.8	1.3	1.7	1.1	0.1
Delay (s)	41.8	33.9		63.5	12.5		29.4	27.8	28.6	29.1	28.5	26.2
Level of Service	D	C		E	B		C	C	C	C	C	C
Approach Delay (s)		34.3			25.2			28.6			28.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	3438	1538	3335	3438	1538	3433	3539	1583	3335	3539	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	3438	1538	3335	3438	1538	3433	3539	1583	3335	3539	1538
Volume (vph)	100	1562	49	204	815	222	102	119	236	199	141	124
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.88	0.88	0.88	0.89	0.89	0.89
Adj. Flow (vph)	112	1755	55	229	916	249	116	135	268	224	158	139
RTOR Reduction (vph)	0	0	5	0	0	132	0	0	113	0	0	101
Lane Group Flow (vph)	112	1755	50	229	916	117	116	135	155	224	158	38
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	5%	2%	5%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.7	51.5	51.5	9.5	52.3	52.3	8.7	31.5	31.5	9.5	32.3	32.3
Effective Green, g (s)	9.2	52.0	52.0	10.0	52.8	52.8	9.2	32.0	32.0	10.0	32.8	32.8
Actuated g/C Ratio	0.08	0.43	0.43	0.08	0.44	0.44	0.08	0.27	0.27	0.08	0.27	0.27
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	256	1490	666	278	1513	677	263	944	422	278	967	420
v/s Ratio Prot	0.03	c0.51		c0.07	0.27		0.03	0.04		c0.07	0.04	
v/s Ratio Perm			0.03			0.08			c0.10			0.02
v/c Ratio	0.44	1.18	0.07	0.82	0.61	0.17	0.44	0.14	0.37	0.81	0.16	0.09
Uniform Delay, d1	52.9	34.0	19.9	54.1	25.6	20.4	52.9	33.5	35.8	54.0	33.2	32.5
Progression Factor	1.00	1.00	1.00	1.35	0.47	0.13	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	87.4	0.0	14.9	0.6	0.1	1.2	0.3	2.5	15.5	0.4	0.4
Delay (s)	54.1	121.4	20.0	88.2	12.7	2.7	54.1	33.9	38.2	69.6	33.5	32.9
Level of Service	D	F	B	F	B	A	D	C	D	E	C	C
Approach Delay (s)		114.5			23.3			40.6			48.9	
Approach LOS		F			C			D			D	

Intersection Summary			
HCM Average Control Delay	68.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3335	3438	1538	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3335	3438	1538	1770	5085	1583
Volume (vph)	55	1971	133	296	1330	117	76	69	265	224	92	42
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.89	0.89	0.89	0.77	0.77	0.77
Adj. Flow (vph)	63	2266	153	340	1529	134	85	78	298	291	119	55
RTOR Reduction (vph)	0	0	50	0	0	45	0	0	158	0	0	41
Lane Group Flow (vph)	63	2266	103	340	1529	89	85	78	140	291	119	14
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.9	54.5	54.5	12.4	61.0	61.0	6.0	16.6	16.6	18.5	29.1	29.1
Effective Green, g (s)	6.4	55.0	55.0	12.9	61.5	61.5	6.5	17.1	17.1	19.0	29.6	29.6
Actuated g/C Ratio	0.05	0.46	0.46	0.11	0.51	0.51	0.05	0.14	0.14	0.16	0.25	0.25
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	178	2264	705	359	2532	788	181	490	219	280	1254	390
v/s Ratio Prot	0.02	c0.46		c0.10	0.31		0.03	0.02		c0.16	0.02	
v/s Ratio Perm			0.07			0.06			c0.09			0.01
v/c Ratio	0.35	1.00	0.15	0.95	0.60	0.11	0.47	0.16	0.64	1.04	0.09	0.03
Uniform Delay, d1	54.8	32.5	18.9	53.2	20.7	15.1	55.1	45.1	48.5	50.5	34.9	34.3
Progression Factor	0.95	1.34	2.25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	10.6	0.0	33.6	0.4	0.1	1.9	0.7	13.5	64.4	0.2	0.2
Delay (s)	52.5	54.1	42.4	86.8	21.1	15.2	57.0	45.8	62.1	114.9	35.0	34.5
Level of Service	D	D	D	F	C	B	E	D	E	F	D	C
Approach Delay (s)		53.3			31.8			58.4			84.9	
Approach LOS		D			C			E			F	

Intersection Summary			
HCM Average Control Delay	48.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3433	5085	1583	3433	3539	1583
Volume (vph)	792	1616	95	220	857	336	132	674	196	155	641	652
Peak-hour factor, PHF	0.95	0.95	0.95	0.89	0.89	0.89	0.74	0.74	0.74	0.89	0.89	0.89
Adj. Flow (vph)	834	1701	100	247	963	378	178	911	265	174	720	733
RTOR Reduction (vph)	0	0	55	0	0	139	0	0	148	0	0	338
Lane Group Flow (vph)	834	1701	45	247	963	239	178	911	117	174	720	395
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	22.5	33.0	33.0	7.5	18.0	18.0	7.4	24.1	24.1	7.4	24.1	24.1
Effective Green, g (s)	23.0	33.5	33.5	8.0	18.5	18.5	7.9	24.6	24.6	7.9	24.6	24.6
Actuated g/C Ratio	0.26	0.37	0.37	0.09	0.21	0.21	0.09	0.27	0.27	0.09	0.27	0.27
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	852	1839	572	296	1015	316	301	1390	433	301	967	433
v/s Ratio Prot	c0.25	c0.34		0.07	0.19		c0.05	0.18		0.05	0.20	
v/s Ratio Perm			0.03			0.16			0.07			c0.25
v/c Ratio	0.98	0.92	0.08	0.83	0.95	0.76	0.59	0.66	0.27	0.58	0.74	0.91
Uniform Delay, d1	33.3	27.0	18.3	40.3	35.3	33.6	39.5	28.9	25.7	39.4	29.8	31.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.4	8.4	0.1	18.0	17.1	9.9	3.1	2.4	1.5	2.7	5.2	26.1
Delay (s)	58.6	35.5	18.3	58.3	52.3	43.5	42.6	31.4	27.2	42.1	35.0	57.7
Level of Service	E	D	B	E	D	D	D	C	C	D	D	E
Approach Delay (s)		42.2			51.2			32.0			46.0	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	43.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3335	4940	1538	3335	4940	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3335	4940	1538	3335	4940	1538
Volume (vph)	146	1560	124	98	1232	213	92	219	108	196	342	158
Peak-hour factor, PHF	0.87	0.87	0.87	0.84	0.84	0.84	0.87	0.87	0.87	0.89	0.89	0.89
Adj. Flow (vph)	168	1793	143	117	1467	254	106	252	124	220	384	178
RTOR Reduction (vph)	0	0	67	0	0	103	0	0	102	0	0	143
Lane Group Flow (vph)	168	1793	76	117	1467	151	106	252	22	220	384	35
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.6	34.4	34.4	6.5	32.3	32.3	5.9	13.6	13.6	7.5	15.2	15.2
Effective Green, g (s)	9.1	34.9	34.9	7.0	32.8	32.8	6.4	14.1	14.1	8.0	15.7	15.7
Actuated g/C Ratio	0.11	0.44	0.44	0.09	0.41	0.41	0.08	0.18	0.18	0.10	0.20	0.20
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	379	2155	671	292	2025	631	267	871	271	334	969	302
v/s Ratio Prot	c0.05	c0.36		0.04	0.30		0.03	0.05		c0.07	c0.08	
v/s Ratio Perm			0.05			0.10			0.01			0.02
v/c Ratio	0.44	0.83	0.11	0.40	0.72	0.24	0.40	0.29	0.08	0.66	0.40	0.12
Uniform Delay, d1	33.1	20.0	13.4	34.5	19.8	15.4	35.0	28.6	27.5	34.7	28.0	26.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	2.9	0.1	0.9	1.3	0.2	1.0	0.8	0.6	4.6	1.2	0.8
Delay (s)	33.9	22.9	13.5	35.4	21.1	15.6	35.9	29.4	28.1	39.3	29.2	27.2
Level of Service	C	C	B	D	C	B	D	C	C	D	C	C
Approach Delay (s)		23.1			21.3			30.5			31.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	499	174	0	0	263	116
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	542	189	0	0	286	126
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			732		542	542
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			732		542	542
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		43	77
cM capacity (veh/h)			873		501	540

Direction, Lane #	EB 1	EB 2	NB 1
Volume Total	542	189	412
Volume Left	0	0	286
Volume Right	0	189	126
cSH	1700	1700	722
Volume to Capacity	0.32	0.11	0.57
Queue Length 95th (ft)	0	0	91
Control Delay (s)	0.0	0.0	19.0
Lane LOS			C
Approach Delay (s)	0.0		19.0
Approach LOS			C

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	45	1	296	10	2	356
Peak Hour Factor	0.60	0.60	0.59	0.59	0.69	0.69
Hourly flow rate (vph)	75	2	502	17	3	516
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			77		1095	75
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			77		1095	75
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			67		98	47
cM capacity (veh/h)			1503		155	978

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SW 1	SW 2
Volume Total	75	2	502	17	3	516
Volume Left	0	0	502	0	3	0
Volume Right	0	2	0	0	0	516
cSH	1700	1700	1503	1700	155	978
Volume to Capacity	0.04	0.00	0.33	0.01	0.02	0.53
Queue Length 95th (ft)	0	0	37	0	1	79
Control Delay (s)	0.0	0.0	8.6	0.0	28.6	12.7
Lane LOS			A		D	B
Approach Delay (s)	0.0		8.3		12.8	
Approach LOS					B	

Intersection Summary			
Average Delay	9.8		
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	7	256	167	25	157	127
Peak Hour Factor	0.56	0.56	0.65	0.65	0.72	0.72
Hourly flow rate (vph)	12	457	257	38	218	176

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	13	457	295	394
Volume Left (vph)	0	0	257	218
Volume Right (vph)	0	457	0	176
Hadj (s)	0.03	-0.67	0.21	-0.12
Departure Headway (s)	6.3	5.6	6.3	5.9
Degree Utilization, x	0.02	0.71	0.51	0.64
Capacity (veh/h)	547	617	539	576
Control Delay (s)	8.2	19.8	15.7	18.7
Approach Delay (s)	19.5		15.7	18.7
Approach LOS	C		C	C

Intersection Summary			
Delay	18.3		
HCM Level of Service	C		
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #23 Dante/Polk

Cycle (sec):	100	Critical Vol./Cap.(X):	0.410
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	11.1
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Polk					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0 1 0			1 0 1 0 1			1 0 0 1 0			1 0 1 0 1		
Volume Module:												
Base Vol:	47	199	21	51	155	25	48	93	63	36	58	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	47	199	21	51	155	25	48	93	63	36	58	60
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	47	199	21	51	155	25	48	93	63	36	58	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	51	216	23	55	168	27	52	101	68	39	63	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	216	23	55	168	27	52	101	68	39	63	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	51	216	23	55	168	27	52	101	68	39	63	65
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.90	0.10	1.00	1.00	1.00	1.00	0.60	0.40	1.00	1.00	1.00
Final Sat.:	530	528	56	495	535	592	502	339	229	468	501	555
Capacity Analysis Module:												
Vol/Sat:	0.10	0.41	0.41	0.11	0.31	0.05	0.10	0.30	0.30	0.08	0.13	0.12
Crit Moves:		****			****			****			****	
Delay/Veh:	9.8	12.4	12.4	10.5	11.9	8.7	10.2	11.0	11.0	10.5	10.3	9.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.8	12.4	12.4	10.5	11.9	8.7	10.2	11.0	11.0	10.5	10.3	9.4
LOS by Move:	A	B	B	B	B	A	B	B	B	B	B	A
ApproachDel:		12.0			11.2			10.8			10.0	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		12.0			11.2			10.8			10.0	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.1	0.6	0.6	0.1	0.4	0.0	0.1	0.4	0.4	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	3	6	2	4	170	7	244	0	56	134	10
Peak Hour Factor	0.60	0.60	0.60	0.73	0.73	0.73	0.81	0.81	0.81	0.73	0.73	0.73
Hourly flow rate (vph)	25	5	10	3	5	233	9	301	0	77	184	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			4			4						
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	631	662	190	663	669	151	197			301		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	631	662	190	663	669	151	197			301		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	99	99	99	98	73	99			94		
cM capacity (veh/h)	251	355	819	321	352	869	1373			1257		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	25	15	3	238	9	151	151	0	77	197
Volume Left	25	0	3	0	9	0	0	0	77	0
Volume Right	0	10	0	233	0	0	0	0	0	14
cSH	251	1065	321	889	1373	1700	1700	1700	1257	1700
Volume to Capacity	0.10	0.01	0.01	0.27	0.01	0.09	0.09	0.00	0.06	0.12
Queue Length 95th (ft)	8	1	1	27	0	0	0	0	5	0
Control Delay (s)	20.9	11.4	16.3	10.8	7.6	0.0	0.0	0.0	8.1	0.0
Lane LOS	C	B	C	B	A				A	
Approach Delay (s)	17.4		10.8		0.2				2.3	
Approach LOS	C		B							

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	30.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	39	129	416	107	92	159
Peak Hour Factor	0.67	0.67	0.76	0.76	0.69	0.69
Hourly flow rate (vph)	58	193	547	141	133	230

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	251	547	141	133	230
Volume Left (vph)	58	547	0	0	0
Volume Right (vph)	0	0	141	0	230
Hadj (s)	0.08	0.53	-0.67	0.03	-0.67
Departure Headway (s)	6.9	6.9	5.7	7.1	6.4
Degree Utilization, x	0.48	1.05	0.22	0.26	0.41
Capacity (veh/h)	514	514	620	499	554
Control Delay (s)	16.1	77.7	9.1	11.4	12.5
Approach Delay (s)	16.1	63.7		12.1	
Approach LOS	C	F		B	

Intersection Summary			
Delay	40.1		
HCM Level of Service	E		
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	35	63	2	0	108	188	1	0	0	435	0	119
Peak Hour Factor	0.69	0.69	0.69	0.89	0.89	0.89	0.25	1.00	1.00	0.78	0.78	0.78
Hourly flow rate (vph)	51	91	3	0	121	211	4	0	0	558	0	153

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	96	49	121	211	4	710
Volume Left (vph)	51	0	0	0	4	558
Volume Right (vph)	0	3	0	211	0	153
Hadj (s)	0.32	0.04	0.09	-0.67	0.23	0.06
Departure Headway (s)	7.3	7.0	6.8	6.0	6.7	5.3
Degree Utilization, x	0.20	0.09	0.23	0.35	0.01	1.05
Capacity (veh/h)	482	500	519	588	506	674
Control Delay (s)	10.9	9.6	10.6	11.1	9.7	69.7
Approach Delay (s)	10.4		10.9		9.7	69.7
Approach LOS	B		B		A	F

Intersection Summary			
Delay	45.9		
HCM Level of Service	E		
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #30 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.367
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	10.9
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Bullard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	166	11	18	90	13	47	17	136	36	25	241	25
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	166	11	18	90	13	47	17	136	36	25	241	25
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	166	11	18	90	13	47	17	136	36	25	241	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	180	12	20	98	14	51	18	148	39	27	262	27
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	12	20	98	14	51	18	148	39	27	262	27
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	180	12	20	98	14	51	18	148	39	27	262	27
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	492	1042	581	477	507	564	483	1041	577	505	1091	607
Capacity Analysis Module:												
Vol/Sat:	0.37	0.01	0.03	0.21	0.03	0.09	0.04	0.14	0.07	0.05	0.24	0.04
Crit Moves:	****			****				****			****	
Delay/Veh:	13.4	9.3	8.7	11.5	9.5	9.2	10.0	10.2	8.9	9.9	10.8	8.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.4	9.3	8.7	11.5	9.5	9.2	10.0	10.2	8.9	9.9	10.8	8.5
LOS by Move:	B	A	A	B	A	A	A	B	A	A	B	A
ApproachDel:	12.7			10.6			9.9			10.6		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	12.7			10.6			9.9			10.6		
LOS by Appr:	B			B			A			B		
AllWayAvgQ:	0.5	0.0	0.0	0.2	0.0	0.1	0.0	0.1	0.1	0.1	0.3	0.0

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3452		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3452		1770	3539	1583	1770	3539	1583
Volume (vph)	137	704	69	93	432	85	43	382	73	77	413	52
Peak-hour factor, PHF	0.81	0.81	0.81	0.92	0.92	0.92	0.97	0.97	0.97	0.87	0.87	0.87
Adj. Flow (vph)	169	869	85	101	470	92	44	394	75	89	475	60
RTOR Reduction (vph)	0	0	42	0	17	0	0	0	45	0	0	35
Lane Group Flow (vph)	169	869	43	101	545	0	44	394	30	89	475	25
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	12.4	41.1	41.1	5.7	34.4		4.3	17.6	17.6	5.7	19.0	19.0
Effective Green, g (s)	12.9	41.6	41.6	6.2	34.9		4.8	18.1	18.1	6.2	19.5	19.5
Actuated g/C Ratio	0.15	0.47	0.47	0.07	0.40		0.05	0.21	0.21	0.07	0.22	0.22
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	259	880	747	125	1367		96	727	325	125	783	350
v/s Ratio Prot	0.10	c0.47		c0.06	0.16		0.02	0.11		c0.05	c0.13	
v/s Ratio Perm			0.03						0.02			0.02
v/c Ratio	0.65	0.99	0.06	0.81	0.40		0.46	0.54	0.09	0.71	0.61	0.07
Uniform Delay, d1	35.5	23.0	12.6	40.4	19.1		40.4	31.3	28.3	40.1	30.9	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	27.0	0.0	30.5	0.2		3.4	2.9	0.6	17.4	3.5	0.4
Delay (s)	41.3	50.0	12.6	70.8	19.3		43.8	34.2	28.9	57.5	34.3	27.5
Level of Service	D	D	B	E	B		D	C	C	E	C	C
Approach Delay (s)		45.8			27.1			34.2			37.0	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	37.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	88.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	14	5	7	4	4	9	5	206	5	6	122	8
Peak Hour Factor	0.72	0.72	0.72	0.47	0.47	0.47	0.69	0.69	0.69	0.87	0.87	0.87
Hourly flow rate (vph)	19	7	10	9	9	19	7	299	7	7	140	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	490	474	140	480	476	299	149			306		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	490	474	140	480	476	299	149			306		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	99	99	98	98	97	99			99		
cM capacity (veh/h)	465	484	908	481	482	741	1432			1255		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	36	36	306	7	147	9
Volume Left	19	9	7	0	7	0
Volume Right	10	19	0	7	0	9
cSH	540	591	1432	1700	1255	1700
Volume to Capacity	0.07	0.06	0.01	0.00	0.01	0.01
Queue Length 95th (ft)	5	5	0	0	0	0
Control Delay (s)	12.1	11.5	0.2	0.0	0.4	0.0
Lane LOS	B	B	A		A	
Approach Delay (s)	12.1	11.5	0.2		0.4	
Approach LOS	B	B				

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	27.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1810	1538	1719	3438	1719	1538
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1810	1538	1719	3438	1719	1538
Volume (vph)	586	317	492	642	38	227
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.88	0.88
Adj. Flow (vph)	658	356	553	721	43	258
RTOR Reduction (vph)	0	195	0	0	0	207
Lane Group Flow (vph)	658	161	553	721	43	51
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	31.6	31.6	27.5	63.6	17.4	17.4
Effective Green, g (s)	32.1	32.1	28.0	64.1	17.9	17.9
Actuated g/C Ratio	0.36	0.36	0.31	0.71	0.20	0.20
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	646	549	535	2449	342	306
v/s Ratio Prot	c0.36		c0.32	0.21	0.03	
v/s Ratio Perm		0.10				c0.03
v/c Ratio	1.02	0.29	1.03	0.29	0.13	0.17
Uniform Delay, d1	28.9	20.8	31.0	4.7	29.6	29.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.2	0.3	47.8	0.1	0.8	1.2
Delay (s)	69.1	21.1	78.8	4.8	30.4	31.1
Level of Service	E	C	E	A	C	C
Approach Delay (s)	52.3			36.9	31.0	
Approach LOS	D			D	C	

Intersection Summary			
HCM Average Control Delay	42.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1719	1810	3438	1538	1719	1538
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1719	1810	3438	1538	1719	1538
Volume (vph)	95	702	925	192	109	202
Peak-hour factor, PHF	0.84	0.84	0.93	0.93	0.87	0.87
Adj. Flow (vph)	113	836	995	206	125	232
RTOR Reduction (vph)	0	0	0	128	0	162
Lane Group Flow (vph)	113	836	995	78	125	70
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	5.7	31.3	21.1	21.1	16.8	16.8
Effective Green, g (s)	6.2	31.8	21.6	21.6	17.3	17.3
Actuated g/C Ratio	0.11	0.56	0.38	0.38	0.30	0.30
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	187	1008	1301	582	521	466
v/s Ratio Prot	0.07	c0.46	0.29		c0.07	
v/s Ratio Perm				0.05		0.05
v/c Ratio	0.60	0.83	0.76	0.13	0.24	0.15
Uniform Delay, d1	24.3	10.4	15.5	11.6	15.0	14.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	5.7	2.7	0.1	1.1	0.7
Delay (s)	29.7	16.2	18.3	11.7	16.0	15.2
Level of Service	C	B	B	B	B	B
Approach Delay (s)		17.8	17.1		15.5	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3438	1538	1719	3438	1538	1719	3438	1538	1719	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	3438	1538	1719	3438	1538	1719	3438	1538	1719	3438	1538
Volume (vph)	26	705	33	276	791	74	109	314	14	15	236	405
Peak-hour factor, PHF	0.70	0.70	0.70	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84
Adj. Flow (vph)	37	1007	47	317	909	85	125	361	16	18	281	482
RTOR Reduction (vph)	0	0	29	0	0	47	0	0	11	0	0	251
Lane Group Flow (vph)	37	1007	18	317	909	38	125	361	5	18	281	231
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	4.5	29.3	29.3	17.5	42.3	42.3	7.5	26.8	26.8	2.9	22.2	22.2
Effective Green, g (s)	5.0	29.8	29.8	18.0	42.8	42.8	8.0	27.3	27.3	3.4	22.7	22.7
Actuated g/C Ratio	0.05	0.32	0.32	0.19	0.45	0.45	0.08	0.29	0.29	0.04	0.24	0.24
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	91	1084	485	327	1557	697	146	993	444	62	826	369
v/s Ratio Prot	0.02	c0.29		c0.18	0.26		c0.07	0.10		0.01	0.08	
v/s Ratio Perm			0.01			0.03			0.00			c0.15
v/c Ratio	0.41	0.93	0.04	0.97	0.58	0.06	0.86	0.36	0.01	0.29	0.34	0.63
Uniform Delay, d1	43.3	31.3	22.4	38.0	19.2	14.5	42.7	26.7	24.0	44.4	29.7	32.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	13.4	0.0	41.0	0.6	0.0	35.9	1.0	0.0	2.6	1.1	7.8
Delay (s)	46.3	44.7	22.4	79.0	19.8	14.5	78.6	27.7	24.0	47.0	30.8	39.9
Level of Service	D	D	C	E	B	B	E	C	C	D	C	D
Approach Delay (s)		43.8			33.8			40.3			36.8	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	38.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	94.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4940	1583	3433	4940	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4940	1583	3433	4940	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	92	920	55	103	833	56	148	161	57	180	561	130
Peak-hour factor, PHF	0.87	0.87	0.87	0.78	0.78	0.78	0.85	0.85	0.85	0.95	0.95	0.95
Adj. Flow (vph)	106	1057	63	132	1068	72	174	189	67	189	591	137
RTOR Reduction (vph)	0	0	47	0	0	53	0	0	48	0	0	98
Lane Group Flow (vph)	106	1057	16	132	1068	19	174	189	19	189	591	39
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.3	15.4	15.4	5.4	15.5	15.5	5.5	16.9	16.9	5.5	16.9	16.9
Effective Green, g (s)	5.8	15.9	15.9	5.9	16.0	16.0	6.0	17.4	17.4	6.0	17.4	17.4
Actuated g/C Ratio	0.09	0.26	0.26	0.10	0.26	0.26	0.10	0.28	0.28	0.10	0.28	0.28
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	325	1283	411	331	1292	414	337	1006	450	337	1006	450
v/s Ratio Prot	0.03	0.21		c0.04	c0.22		0.05	0.05		c0.06	c0.17	
v/s Ratio Perm			0.01			0.01			0.01			0.02
v/c Ratio	0.33	0.82	0.04	0.40	0.83	0.05	0.52	0.19	0.04	0.56	0.59	0.09
Uniform Delay, d1	25.9	21.3	16.9	26.0	21.3	16.9	26.2	16.6	15.9	26.3	18.8	16.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	4.4	0.0	0.8	4.5	0.0	1.3	0.4	0.2	2.1	2.5	0.4
Delay (s)	26.5	25.8	17.0	26.8	25.8	16.9	27.6	17.0	16.0	28.5	21.3	16.4
Level of Service	C	C	B	C	C	B	C	B	B	C	C	B
Approach Delay (s)		25.4			25.4			21.1			22.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4940	1583	3433	4940	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4940	1583	3433	4940	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	165	1118	69	128	735	52	158	330	340	243	384	313
Peak-hour factor, PHF	0.85	0.85	0.85	0.87	0.87	0.87	0.80	0.80	0.80	0.88	0.88	0.88
Adj. Flow (vph)	194	1315	81	147	845	60	198	412	425	276	436	356
RTOR Reduction (vph)	0	0	54	0	0	43	0	0	181	0	0	200
Lane Group Flow (vph)	194	1315	27	147	845	17	198	412	244	276	436	156
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.3	21.1	21.1	5.8	19.6	19.6	7.3	16.6	16.6	7.5	16.8	16.8
Effective Green, g (s)	7.8	21.6	21.6	6.3	20.1	20.1	7.8	17.1	17.1	8.0	17.3	17.3
Actuated g/C Ratio	0.11	0.31	0.31	0.09	0.29	0.29	0.11	0.25	0.25	0.12	0.25	0.25
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	388	1546	496	313	1439	461	388	877	392	398	887	397
v/s Ratio Prot	c0.06	c0.27		0.04	0.17		0.06	0.12		c0.08	0.12	
v/s Ratio Perm			0.02			0.01			c0.15			0.10
v/c Ratio	0.50	0.85	0.05	0.47	0.59	0.04	0.51	0.47	0.62	0.69	0.49	0.39
Uniform Delay, d1	28.8	22.2	16.6	29.8	20.9	17.5	28.8	22.1	23.1	29.3	22.1	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	4.7	0.0	1.1	0.6	0.0	1.1	1.8	7.2	5.2	1.9	2.9
Delay (s)	29.8	26.9	16.6	30.9	21.5	17.6	29.9	23.9	30.3	34.5	24.0	24.4
Level of Service	C	C	B	C	C	B	C	C	C	C	C	C
Approach Delay (s)		26.7			22.6			27.7			26.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	69.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4940	1583	3433	4940	1583	3433	3438	1583	3433	3438	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4940	1583	3433	4940	1583	3433	3438	1583	3433	3438	1583
Volume (vph)	105	1224	125	137	852	60	174	478	231	133	371	131
Peak-hour factor, PHF	0.81	0.81	0.81	0.88	0.88	0.88	0.77	0.77	0.77	0.94	0.94	0.94
Adj. Flow (vph)	130	1511	154	156	968	68	226	621	300	141	395	139
RTOR Reduction (vph)	0	0	95	0	0	43	0	0	170	0	0	107
Lane Group Flow (vph)	130	1511	59	156	968	25	226	621	130	141	395	32
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	5%	2%	2%	5%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.9	26.4	26.4	7.3	27.8	27.8	7.5	18.9	18.9	6.0	17.4	17.4
Effective Green, g (s)	6.4	26.9	26.9	7.8	28.3	28.3	8.0	19.4	19.4	6.5	17.9	17.9
Actuated g/C Ratio	0.08	0.35	0.35	0.10	0.37	0.37	0.10	0.25	0.25	0.08	0.23	0.23
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	287	1735	556	350	1825	585	359	871	401	291	803	370
v/s Ratio Prot	0.04	c0.31		c0.05	0.20		c0.07	c0.18		0.04	0.11	
v/s Ratio Perm			0.04			0.02			0.08			0.02
v/c Ratio	0.45	0.87	0.11	0.45	0.53	0.04	0.63	0.71	0.32	0.48	0.49	0.09
Uniform Delay, d1	33.4	23.2	16.7	32.4	18.9	15.5	32.9	26.1	23.3	33.5	25.4	23.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	5.1	0.1	0.9	0.3	0.0	3.4	4.9	2.1	1.3	2.1	0.5
Delay (s)	34.6	28.3	16.8	33.3	19.2	15.5	36.3	31.0	25.4	34.7	27.6	23.4
Level of Service	C	C	B	C	B	B	D	C	C	C	C	C
Approach Delay (s)		27.8			20.9			30.6			28.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	76.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.89	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3438	1538	1719	3438		1719		1538	1719	3050	
Flt Permitted		1.00	1.00	0.95	1.00		0.69		1.00	0.95	1.00	
Satd. Flow (perm)		3438	1538	1719	3438		1250		1538	1719	3050	
Volume (vph)	0	1191	31	109	374	0	18	0	310	116	21	65
Peak-hour factor, PHF	0.93	0.93	0.93	0.86	0.86	0.86	0.80	0.80	0.80	0.89	0.89	0.89
Adj. Flow (vph)	0	1281	33	127	435	0	22	0	388	130	24	73
RTOR Reduction (vph)	0	0	14	0	0	0	0	0	198	0	52	0
Lane Group Flow (vph)	0	1281	19	127	435	0	22	0	190	130	45	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		22.6	22.6	5.7	32.8		16.3		16.3	16.3	16.3	
Effective Green, g (s)		23.1	23.1	6.2	33.3		16.8		16.8	16.8	16.8	
Actuated g/C Ratio		0.40	0.40	0.11	0.57		0.29		0.29	0.29	0.29	
Clearance Time (s)		4.5	4.5	4.5	4.5		4.5		4.5	4.5	4.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1367	611	183	1970		361		445	497	882	
v/s Ratio Prot		c0.37		c0.07	0.13						0.01	
v/s Ratio Perm			0.01				0.02		c0.12	0.08		
v/c Ratio		0.94	0.03	0.69	0.22		0.06		0.43	0.26	0.05	
Uniform Delay, d1		16.8	10.7	25.0	6.1		14.9		16.8	15.9	14.9	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		12.2	0.0	10.8	0.1		0.1		0.7	1.3	0.1	
Delay (s)		29.0	10.7	35.9	6.1		15.0		17.4	17.2	15.0	
Level of Service		C	B	D	A		B		B	B	B	
Approach Delay (s)		28.5			12.8			17.3			16.2	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.87	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1719	3438			3438	1538	1633	1429	1461	3335		1538
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.58		1.00
Satd. Flow (perm)	1719	3438			3438	1538	1633	1429	1461	2052		1538
Volume (vph)	280	872	0	0	359	226	210	7	415	155	0	168
Peak-hour factor, PHF	0.79	0.79	0.79	0.89	0.89	0.89	0.91	0.91	0.91	0.70	0.70	0.70
Adj. Flow (vph)	354	1104	0	0	403	254	231	8	456	221	0	240
RTOR Reduction (vph)	0	0	0	0	0	207	0	92	92	0	0	189
Lane Group Flow (vph)	354	1104	0	0	403	47	199	168	144	221	0	51
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	13.5	31.9			13.9	13.9	16.5	16.5	16.5	16.0		16.0
Effective Green, g (s)	14.0	32.4			14.4	14.4	17.0	17.0	17.0	16.5		16.5
Actuated g/C Ratio	0.18	0.42			0.18	0.18	0.22	0.22	0.22	0.21		0.21
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5	4.5		4.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	309	1430			636	284	356	312	319	435		326
v/s Ratio Prot	c0.21	c0.32			0.12		c0.12	0.12				
v/s Ratio Perm						0.03			0.10	c0.11		0.03
v/c Ratio	1.15	0.77			0.63	0.17	0.56	0.54	0.45	0.51		0.16
Uniform Delay, d1	32.0	19.6			29.3	26.7	27.1	27.0	26.4	27.1		25.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	96.6	2.7			2.1	0.3	6.2	6.5	4.5	4.2		1.0
Delay (s)	128.6	22.2			31.4	27.0	33.3	33.5	30.9	31.3		26.0
Level of Service	F	C			C	C	C	C	C	C		C
Approach Delay (s)		48.0			29.7			32.6			28.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	38.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	77.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	86	32	13	123	452	120
Peak Hour Factor	0.66	0.66	0.91	0.91	0.73	0.73
Hourly flow rate (vph)	130	48	14	135	619	164

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	179	14	135	619	164
Volume Left (vph)	130	0	0	619	0
Volume Right (vph)	0	0	135	0	164
Hadj (s)	0.23	0.09	-0.62	0.59	-0.62
Departure Headway (s)	6.7	7.0	6.3	6.1	4.9
Degree Utilization, x	0.33	0.03	0.24	1.06	0.23
Capacity (veh/h)	532	501	560	594	715
Control Delay (s)	12.9	9.0	10.0	76.1	8.2
Approach Delay (s)	12.9	9.9		61.8	
Approach LOS	B	A		F	

Intersection Summary			
Delay	47.0		
HCM Level of Service	E		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	36	55	0	207	582	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	60	0	225	633	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type	None					
Median storage veh)						
Upstream signal (ft)					1090	
pX, platoon unblocked	0.78	0.78	0.78			
vC, conflicting volume	858	633	633			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	818	529	529			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	86	86	100			
cM capacity (veh/h)	270	429	810			

Direction, Lane #	SE 1	NE 1	SW 1
Volume Total	99	225	633
Volume Left	39	0	0
Volume Right	60	0	0
cSH	682	1700	1700
Volume to Capacity	0.14	0.13	0.37
Queue Length 95th (ft)	13	0	0
Control Delay (s)	17.1	0.0	0.0
Lane LOS	C		
Approach Delay (s)	17.1	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	65	533	251	0	0	524
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	71	579	273	0	0	570
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						594
pX, platoon unblocked	0.75					
vC, conflicting volume	842	273			273	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	791	273			273	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	74	24			100	
cM capacity (veh/h)	270	766			1290	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	650	273	570
Volume Left	71	0	0
Volume Right	579	0	0
cSH	638	1700	1700
Volume to Capacity	1.02	0.16	0.34
Queue Length 95th (ft)	409	0	0
Control Delay (s)	65.7	0.0	0.0
Lane LOS	F		
Approach Delay (s)	65.7	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	28.6		
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1810	1538	1719	1810	1538	1719	3400		1719	1810	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1719	1810	1538	1719	1810	1538	1719	3400		1719	1810	1538
Volume (vph)	387	146	60	41	140	81	75	620	49	47	413	299
Peak-hour factor, PHF	0.87	0.87	0.87	0.93	0.93	0.93	0.74	0.74	0.74	0.86	0.86	0.86
Adj. Flow (vph)	445	168	69	44	151	87	101	838	66	55	480	348
RTOR Reduction (vph)	0	0	44	0	0	74	0	6	0	0	0	240
Lane Group Flow (vph)	445	168	25	44	151	13	101	898	0	55	480	108
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	22.8	29.2	29.2	4.0	10.4	10.4	5.4	26.2		4.0	24.8	24.8
Effective Green, g (s)	23.3	29.7	29.7	4.5	10.9	10.9	5.9	26.7		4.5	25.3	25.3
Actuated g/C Ratio	0.29	0.36	0.36	0.06	0.13	0.13	0.07	0.33		0.06	0.31	0.31
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	492	660	561	95	242	206	125	1115		95	563	478
v/s Ratio Prot	c0.26	0.09		0.03	c0.08		c0.06	0.26		0.03	c0.27	
v/s Ratio Perm			0.02			0.01						0.07
v/c Ratio	0.90	0.25	0.04	0.46	0.62	0.06	0.81	0.81		0.58	0.85	0.23
Uniform Delay, d1	28.0	18.1	16.7	37.3	33.3	30.8	37.2	25.0		37.5	26.3	20.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	19.9	0.2	0.0	3.5	4.9	0.1	30.5	4.3		8.3	11.9	0.2
Delay (s)	47.9	18.3	16.7	40.8	38.3	30.9	67.7	29.3		45.8	38.2	21.0
Level of Service	D	B	B	D	D	C	E	C		D	D	C
Approach Delay (s)		37.4			36.4			33.2			31.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	34.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	81.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	2	0	1089	3	1	753	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	2	0	1184	3	1	818	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								560				
pX, platoon unblocked	0.81	0.81		0.81	0.81	0.81				0.81		
vC, conflicting volume	1415	2008	409	1597	2006	593	818			1187		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1276	2009	409	1501	2007	259	818			994		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	99	47	591	68	47	598	806			559		

Direction, Lane #	SE 1	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	0	2	592	595	410	409
Volume Left	0	0	0	0	1	0
Volume Right	0	2	0	3	0	0
cSH	1700	598	806	1700	559	1700
Volume to Capacity	0.00	0.00	0.00	0.35	0.00	0.24
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	11.0	0.0	0.0	0.1	0.0
Lane LOS	A	B			A	
Approach Delay (s)	0.0	11.0	0.0		0.0	
Approach LOS	A	B				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3438	1538	1719	3438	1719	1538
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3438	1538	1719	3438	1719	1538
Volume (vph)	951	89	2	714	69	3
Peak-hour factor, PHF	0.73	0.73	0.93	0.93	0.69	0.69
Adj. Flow (vph)	1303	122	2	768	100	4
RTOR Reduction (vph)	0	67	0	0	0	3
Lane Group Flow (vph)	1303	55	2	768	100	1
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	25.1	25.1	1.0	30.6	16.7	16.7
Effective Green, g (s)	25.6	25.6	1.5	31.1	17.2	17.2
Actuated g/C Ratio	0.45	0.45	0.03	0.55	0.31	0.31
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1563	699	46	1899	525	470
v/s Ratio Prot	c0.38		0.00	c0.22	c0.06	
v/s Ratio Perm		0.04				0.00
v/c Ratio	0.83	0.08	0.04	0.40	0.19	0.00
Uniform Delay, d1	13.5	8.7	26.7	7.3	14.4	13.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.0	0.4	0.1	0.8	0.0
Delay (s)	17.5	8.7	27.1	7.4	15.2	13.6
Level of Service	B	A	C	A	B	B
Approach Delay (s)	16.7			7.5	15.2	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	3438	1538	3335	3438	1538	3335	1592		3335	1593	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1719	3438	1538	3335	3438	1538	3335	1592		3335	1593	
Volume (vph)	111	829	22	71	659	9	13	10	47	5	9	43
Peak-hour factor, PHF	0.79	0.79	0.79	0.81	0.81	0.81	0.69	0.69	0.69	0.75	0.75	0.75
Adj. Flow (vph)	141	1049	28	88	814	11	19	14	68	7	12	57
RTOR Reduction (vph)	0	0	18	0	0	7	0	49	0	0	41	0
Lane Group Flow (vph)	141	1049	10	88	814	4	19	33	0	7	28	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	2%	5%	5%	2%	5%
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	6.3	22.7	22.7	5.2	21.6	21.6	1.1	17.3		1.0	17.2	
Effective Green, g (s)	6.8	23.2	23.2	5.7	22.1	22.1	1.6	17.8		1.5	17.7	
Actuated g/C Ratio	0.11	0.36	0.36	0.09	0.34	0.34	0.02	0.28		0.02	0.28	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	182	1242	556	296	1183	529	83	441		78	439	
v/s Ratio Prot	c0.08	c0.31		0.03	0.24		c0.01	c0.02		0.00	0.02	
v/s Ratio Perm			0.01			0.00						
v/c Ratio	0.77	0.84	0.02	0.30	0.69	0.01	0.23	0.07		0.09	0.06	
Uniform Delay, d1	28.0	18.8	13.2	27.4	18.1	13.8	30.7	17.1		30.7	17.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	18.4	5.4	0.0	0.6	1.7	0.0	1.4	0.3		0.5	0.3	
Delay (s)	46.3	24.3	13.2	27.9	19.8	13.8	32.1	17.4		31.2	17.4	
Level of Service	D	C	B	C	B	B	C	B		C	B	
Approach Delay (s)		26.6			20.5			20.2			18.7	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3335	3438	1538	1719	3438	1538	3335	1612		3335	1863	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3335	3438	1538	1719	3438	1538	3335	1612		3335	1863	1538
Volume (vph)	8	777	88	287	648	134	64	59	196	138	60	24
Peak-hour factor, PHF	0.84	0.84	0.84	0.76	0.76	0.76	0.74	0.74	0.74	0.73	0.73	0.73
Adj. Flow (vph)	10	925	105	378	853	176	86	80	265	189	82	33
RTOR Reduction (vph)	0	0	42	0	0	67	0	133	0	0	0	26
Lane Group Flow (vph)	10	925	63	378	853	109	86	212	0	189	82	7
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	2%	5%	5%	2%	5%
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	1.3	28.9	28.9	20.9	48.5	48.5	5.8	18.4		7.5	20.1	20.1
Effective Green, g (s)	1.8	29.4	29.4	21.4	49.0	49.0	6.3	18.9		8.0	20.6	20.6
Actuated g/C Ratio	0.02	0.31	0.31	0.23	0.52	0.52	0.07	0.20		0.09	0.22	0.22
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	64	1079	483	393	1798	804	224	325		285	410	338
v/s Ratio Prot	0.00	c0.27		c0.22	0.25		0.03	c0.13		c0.06	0.04	
v/s Ratio Perm			0.04			0.07						0.00
v/c Ratio	0.16	0.86	0.13	0.96	0.47	0.14	0.38	0.65		0.66	0.20	0.02
Uniform Delay, d1	45.2	30.2	23.0	35.7	14.2	11.5	41.8	34.4		41.5	29.8	28.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.1	6.9	0.1	35.3	0.2	0.1	1.1	9.8		5.7	1.1	0.1
Delay (s)	46.3	37.1	23.1	71.1	14.4	11.6	42.9	44.2		47.2	30.9	28.8
Level of Service	D	D	C	E	B	B	D	D		D	C	C
Approach Delay (s)		35.7			29.3			44.0			40.8	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	34.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	93.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3335	3539	1538	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3335	3539	1538	3433	3539	1583
Volume (vph)	260	736	122	90	802	204	137	263	58	151	214	133
Peak-hour factor, PHF	0.81	0.81	0.81	0.80	0.80	0.80	0.90	0.90	0.90	0.68	0.68	0.68
Adj. Flow (vph)	321	909	151	112	1002	255	152	292	64	222	315	196
RTOR Reduction (vph)	0	0	108	0	0	189	0	0	47	0	0	141
Lane Group Flow (vph)	321	909	43	112	1002	66	152	292	17	222	315	55
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	2%	5%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.5	18.4	18.4	5.8	16.7	16.7	5.9	16.8	16.8	7.4	18.3	18.3
Effective Green, g (s)	8.0	18.9	18.9	6.3	17.2	17.2	6.4	17.3	17.3	7.9	18.8	18.8
Actuated g/C Ratio	0.12	0.28	0.28	0.09	0.26	0.26	0.10	0.26	0.26	0.12	0.28	0.28
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	402	1406	438	316	1280	398	321	922	401	408	1002	448
v/s Ratio Prot	c0.10	0.18		0.03	c0.20		0.05	0.08		c0.06	c0.09	
v/s Ratio Perm			0.03			0.04			0.01			0.04
v/c Ratio	0.80	0.65	0.10	0.35	0.78	0.17	0.47	0.32	0.04	0.54	0.31	0.12
Uniform Delay, d1	28.4	20.8	17.5	28.1	22.9	19.0	28.4	19.8	18.4	27.6	18.7	17.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.6	1.0	0.1	0.7	3.2	0.2	1.1	0.9	0.2	1.5	0.8	0.6
Delay (s)	39.0	21.9	17.6	28.8	26.1	19.2	29.5	20.7	18.5	29.0	19.5	18.2
Level of Service	D	C	B	C	C	B	C	C	B	C	B	B
Approach Delay (s)		25.4			25.0			23.1			22.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	66.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3433	3008		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3433	3008		3433	1863	1583
Volume (vph)	1	940	1	4	1104	60	2	0	4	60	1	9
Peak-hour factor, PHF	0.85	0.85	0.85	0.83	0.83	0.83	0.25	0.25	0.25	0.67	0.67	0.67
Adj. Flow (vph)	1	1106	1	5	1330	72	8	0	16	90	1	13
RTOR Reduction (vph)	0	0	1	0	0	38	0	12	0	0	0	11
Lane Group Flow (vph)	1	1106	0	5	1330	34	8	4	0	90	1	2
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	21.2	21.2	0.8	21.2	21.2	7.3	13.3		3.9	9.9	9.9
Effective Green, g (s)	1.3	21.7	21.7	1.3	21.7	21.7	7.8	13.8		4.4	10.4	10.4
Actuated g/C Ratio	0.02	0.38	0.38	0.02	0.38	0.38	0.14	0.24		0.08	0.18	0.18
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	76	1874	583	76	1874	583	468	726		264	339	288
v/s Ratio Prot	0.00	0.22		c0.00	c0.27		0.00	c0.00		c0.03	0.00	
v/s Ratio Perm			0.00			0.02						c0.00
v/c Ratio	0.01	0.59	0.00	0.07	0.71	0.06	0.02	0.01		0.34	0.00	0.01
Uniform Delay, d1	27.3	14.2	11.0	27.4	15.1	11.3	21.4	16.5		25.0	19.2	19.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.5	0.0	0.4	1.3	0.0	0.0	0.0		0.8	0.0	0.0
Delay (s)	27.4	14.7	11.0	27.7	16.3	11.3	21.4	16.5		25.8	19.2	19.2
Level of Service	C	B	B	C	B	B	C	B		C	B	B
Approach Delay (s)		14.7			16.1			18.1			24.9	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	57.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3387		1719	3411		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	3387		1719	3411		1770	1863	1583	1770	1863	1583
Volume (vph)	42	859	95	299	1034	57	126	74	237	25	55	34
Peak-hour factor, PHF	0.87	0.87	0.87	0.89	0.89	0.89	0.94	0.94	0.94	0.81	0.81	0.81
Adj. Flow (vph)	48	987	109	336	1162	64	134	79	252	31	68	42
RTOR Reduction (vph)	0	9	0	0	4	0	0	0	190	0	0	33
Lane Group Flow (vph)	48	1087	0	336	1222	0	134	79	62	31	68	9
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	4.5	31.3		17.5	44.3		7.5	22.4	22.4	4.4	19.3	19.3
Effective Green, g (s)	5.0	31.8		18.0	44.8		8.0	22.9	22.9	4.9	19.8	19.8
Actuated g/C Ratio	0.05	0.34		0.19	0.48		0.09	0.24	0.24	0.05	0.21	0.21
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	92	1151		331	1633		151	456	387	93	394	335
v/s Ratio Prot	0.03	c0.32		c0.20	0.36		c0.08	c0.04		0.02	0.04	
v/s Ratio Perm									0.04			0.01
v/c Ratio	0.52	0.94		1.02	0.75		0.89	0.17	0.16	0.33	0.17	0.03
Uniform Delay, d1	43.1	30.0		37.8	19.8		42.4	27.9	27.8	42.8	30.2	29.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3	15.0		53.4	1.9		41.7	0.8	0.9	2.1	1.0	0.1
Delay (s)	48.4	45.0		91.2	21.7		84.0	28.7	28.7	44.9	31.1	29.4
Level of Service	D	D		F	C		F	C	C	D	C	C
Approach Delay (s)		45.2			36.7			44.6			33.6	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	40.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	93.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	3438	1538	3335	3438	1538	3433	3539	1583	3335	3539	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	3438	1538	3335	3438	1538	3433	3539	1583	3335	3539	1538
Volume (vph)	183	1043	74	300	1341	352	107	219	228	251	204	288
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.88	0.88	0.88	0.89	0.89	0.89
Adj. Flow (vph)	206	1172	83	337	1507	396	122	249	259	282	229	324
RTOR Reduction (vph)	0	0	16	0	0	203	0	0	143	0	0	153
Lane Group Flow (vph)	206	1172	67	337	1507	193	122	249	116	282	229	171
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	5%	2%	5%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.5	37.5	37.5	10.5	40.5	40.5	7.2	16.5	16.5	7.5	16.8	16.8
Effective Green, g (s)	8.0	38.0	38.0	11.0	41.0	41.0	7.7	17.0	17.0	8.0	17.3	17.3
Actuated g/C Ratio	0.09	0.42	0.42	0.12	0.46	0.46	0.09	0.19	0.19	0.09	0.19	0.19
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	296	1452	649	408	1566	701	294	668	299	296	680	296
v/s Ratio Prot	0.06	0.34		c0.10	c0.44		0.04	0.07		c0.08	0.06	
v/s Ratio Perm			0.04			0.13			0.07			c0.11
v/c Ratio	0.70	0.81	0.10	0.83	0.96	0.28	0.41	0.37	0.39	0.95	0.34	0.58
Uniform Delay, d1	39.8	22.8	15.7	38.6	23.8	15.3	39.0	31.8	32.0	40.8	31.4	33.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9	3.4	0.1	12.8	14.7	0.2	1.0	1.6	3.8	39.5	1.3	7.9
Delay (s)	46.8	26.2	15.8	51.4	38.5	15.5	40.0	33.4	35.7	80.3	32.7	41.0
Level of Service	D	C	B	D	D	B	D	C	D	F	C	D
Approach Delay (s)		28.5			36.3			35.6			52.0	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	36.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3335	3438	1538	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3335	3438	1538	1770	5085	1583
Volume (vph)	87	1363	129	266	1995	278	119	129	414	193	136	143
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.89	0.89	0.89	0.77	0.77	0.77
Adj. Flow (vph)	100	1567	148	306	2293	320	134	145	465	251	177	186
RTOR Reduction (vph)	0	0	76	0	0	82	0	0	129	0	0	111
Lane Group Flow (vph)	100	1567	72	306	2293	238	134	145	336	251	177	75
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.3	44.7	44.7	12.3	49.7	49.7	7.4	20.5	20.5	14.5	27.6	27.6
Effective Green, g (s)	7.8	45.2	45.2	12.8	50.2	50.2	7.9	21.0	21.0	15.0	28.1	28.1
Actuated g/C Ratio	0.07	0.41	0.41	0.12	0.46	0.46	0.07	0.19	0.19	0.14	0.26	0.26
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	236	2030	632	388	2254	702	240	656	294	241	1299	404
v/s Ratio Prot	0.03	0.32		c0.09	c0.46		0.04	0.04		c0.14	0.03	
v/s Ratio Perm			0.05			0.15			c0.22			0.05
v/c Ratio	0.42	0.77	0.11	0.79	1.02	0.34	0.56	0.22	1.14	1.04	0.14	0.19
Uniform Delay, d1	48.9	28.0	20.0	47.3	29.9	19.2	49.4	37.6	44.5	47.5	31.6	32.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	1.9	0.1	10.2	23.4	0.3	2.8	0.8	97.2	69.2	0.2	1.0
Delay (s)	50.2	29.8	20.1	57.5	53.3	19.5	52.2	38.4	141.7	116.7	31.8	33.0
Level of Service	D	C	C	E	D	B	D	D	F	F	C	C
Approach Delay (s)		30.2			50.0			105.5			66.9	
Approach LOS		C			D			F			E	

Intersection Summary			
HCM Average Control Delay	52.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3433	5085	1583	3433	3539	1583
Volume (vph)	766	1136	50	248	1582	196	140	757	162	279	690	853
Peak-hour factor, PHF	0.95	0.95	0.95	0.89	0.89	0.89	0.74	0.74	0.74	0.89	0.89	0.89
Adj. Flow (vph)	806	1196	53	279	1778	220	189	1023	219	313	775	958
RTOR Reduction (vph)	0	0	31	0	0	69	0	0	160	0	0	226
Lane Group Flow (vph)	806	1196	22	279	1778	151	189	1023	59	313	775	733
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	22.5	42.9	42.9	14.1	34.5	34.5	7.5	31.8	31.8	13.2	37.5	37.5
Effective Green, g (s)	23.0	43.4	43.4	14.6	35.0	35.0	8.0	32.3	32.3	13.7	38.0	38.0
Actuated g/C Ratio	0.19	0.36	0.36	0.12	0.29	0.29	0.07	0.27	0.27	0.11	0.32	0.32
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	639	1787	556	406	1441	449	229	1369	426	392	1121	501
v/s Ratio Prot	c0.24	0.24		0.08	c0.36		0.06	0.20		c0.09	0.22	
v/s Ratio Perm			0.01			0.10			0.04			c0.46
v/c Ratio	1.26	0.67	0.04	0.69	1.23	0.34	0.83	0.75	0.14	0.80	0.69	1.46
Uniform Delay, d1	48.5	32.3	24.8	50.5	42.5	33.4	55.3	40.1	33.3	51.8	35.9	41.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	129.9	1.0	0.0	4.8	111.5	0.4	20.9	3.8	0.7	10.8	3.5	218.7
Delay (s)	178.4	33.2	24.8	55.3	154.0	33.8	76.2	43.9	34.0	62.6	39.4	259.7
Level of Service	F	C	C	E	F	C	E	D	C	E	D	F
Approach Delay (s)		90.0			130.3			46.6			146.1	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM Average Control Delay	108.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4940	1538	3335	4940	1538	3335	4940	1538	3335	4940	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4940	1538	3335	4940	1538	3335	4940	1538	3335	4940	1538
Volume (vph)	151	1299	323	158	1194	236	196	525	87	259	705	368
Peak-hour factor, PHF	0.87	0.87	0.87	0.84	0.84	0.84	0.87	0.87	0.87	0.89	0.89	0.89
Adj. Flow (vph)	174	1493	371	188	1421	281	225	603	100	291	792	413
RTOR Reduction (vph)	0	0	188	0	0	129	0	0	76	0	0	168
Lane Group Flow (vph)	174	1493	183	188	1421	152	225	603	24	291	792	245
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.3	24.6	24.6	7.4	24.7	24.7	7.5	17.5	17.5	7.5	17.5	17.5
Effective Green, g (s)	7.8	25.1	25.1	7.9	25.2	25.2	8.0	18.0	18.0	8.0	18.0	18.0
Actuated g/C Ratio	0.10	0.33	0.33	0.11	0.34	0.34	0.11	0.24	0.24	0.11	0.24	0.24
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	347	1653	515	351	1660	517	356	1186	369	356	1186	369
v/s Ratio Prot	0.05	c0.30		c0.06	0.29		0.07	0.12		c0.09	c0.16	
v/s Ratio Perm			0.12			0.10			0.02			0.16
v/c Ratio	0.50	0.90	0.35	0.54	0.86	0.29	0.63	0.51	0.07	0.82	0.67	0.66
Uniform Delay, d1	31.8	23.8	18.8	31.8	23.2	18.3	32.1	24.7	22.0	32.8	25.8	25.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	7.3	0.4	1.6	4.6	0.3	3.6	1.6	0.3	13.5	3.0	9.1
Delay (s)	32.9	31.1	19.3	33.4	27.8	18.7	35.7	26.2	22.3	46.3	28.8	34.9
Level of Service	C	C	B	C	C	B	D	C	C	D	C	C
Approach Delay (s)		29.1			27.0			28.1			33.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	290	231	0	0	162	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	315	251	0	0	176	32
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			566		315	315
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			566		315	315
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		74	96
cM capacity (veh/h)			1006		678	725

Direction, Lane #	EB 1	EB 2	NB 1
Volume Total	315	251	208
Volume Left	0	0	176
Volume Right	0	251	32
cSH	1700	1700	799
Volume to Capacity	0.19	0.15	0.26
Queue Length 95th (ft)	0	0	26
Control Delay (s)	0.0	0.0	11.9
Lane LOS			B
Approach Delay (s)	0.0		11.9
Approach LOS			B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	8	2	59	21	2	70
Peak Hour Factor	0.60	0.60	0.59	0.59	0.69	0.69
Hourly flow rate (vph)	13	3	100	36	3	101
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			17		249	13
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			17		249	13
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		100	90
cM capacity (veh/h)			1581		687	1058

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SW 1	SW 2
Volume Total	13	3	100	36	3	101
Volume Left	0	0	100	0	3	0
Volume Right	0	3	0	0	0	101
cSH	1700	1700	1581	1700	687	1058
Volume to Capacity	0.01	0.00	0.06	0.02	0.00	0.10
Queue Length 95th (ft)	0	0	5	0	0	8
Control Delay (s)	0.0	0.0	7.4	0.0	10.3	8.8
Lane LOS			A		B	A
Approach Delay (s)	0.0		5.5		8.8	
Approach LOS					A	

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	34	80	41	12	81	50
Peak Hour Factor	0.56	0.56	0.65	0.65	0.72	0.72
Hourly flow rate (vph)	61	143	63	18	112	69

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	61	143	82	182
Volume Left (vph)	0	0	63	113
Volume Right (vph)	0	143	0	69
Hadj (s)	0.03	-0.67	0.19	-0.07
Departure Headway (s)	5.1	4.4	4.9	4.5
Degree Utilization, x	0.09	0.17	0.11	0.23
Capacity (veh/h)	680	792	705	759
Control Delay (s)	7.3	7.1	8.5	8.8
Approach Delay (s)	7.1		8.5	8.8
Approach LOS	A		A	A

Intersection Summary			
Delay	8.0		
HCM Level of Service	A		
Intersection Capacity Utilization	23.8%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #23 Dante/Polk

Cycle (sec):	100	Critical Vol./Cap.(X):	0.405
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	11.0
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Polk					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0	1 0	1 0	1 0	1 0	1 0	1 0	1 0	1 0	1 0	1 0	1 0
Volume Module:												
Base Vol:	48	207	22	68	219	47	32	46	11	11	60	56
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	48	207	22	68	219	47	32	46	11	11	60	56
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	207	22	68	219	47	32	46	11	11	60	56
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	52	225	24	74	238	51	35	50	12	12	65	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	225	24	74	238	51	35	50	12	12	65	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	52	225	24	74	238	51	35	50	12	12	65	61
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.90	0.10	1.00	1.00	1.00	1.00	0.81	0.19	1.00	1.00	1.00
Final Sat.:	562	562	60	539	587	655	485	429	102	469	503	558
Capacity Analysis Module:												
Vol/Sat:	0.09	0.40	0.40	0.14	0.41	0.08	0.07	0.12	0.12	0.03	0.13	0.11
Crit Moves:		****			****			****			****	
Delay/Veh:	9.5	11.8	11.8	10.1	12.5	8.4	10.1	9.7	9.7	10.0	10.2	9.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.5	11.8	11.8	10.1	12.5	8.4	10.1	9.7	9.7	10.0	10.2	9.3
LOS by Move:	A	B	B	B	B	A	B	A	A	A	B	A
ApproachDel:		11.4			11.4			9.8			9.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.4			11.4			9.8			9.8	
LOS by Appr:		B			B			A			A	
AllWayAvgQ:	0.1	0.6	0.6	0.1	0.6	0.1	0.1	0.1	0.1	0.0	0.1	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	13	1	2	3	4	65	6	106	0	61	163	10
Peak Hour Factor	0.60	0.60	0.60	0.73	0.73	0.73	0.81	0.81	0.81	0.73	0.73	0.73
Hourly flow rate (vph)	22	2	3	4	5	89	7	131	0	84	223	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			4			4						
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	525	543	230	539	550	65	237			131		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	525	543	230	539	550	65	237			131		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	100	99	99	91	99			94		
cM capacity (veh/h)	373	417	772	402	414	985	1327			1452		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	22	5	4	95	7	65	65	0	84	237
Volume Left	22	0	4	0	7	0	0	0	84	0
Volume Right	0	3	0	89	0	0	0	0	0	14
cSH	373	1158	402	1046	1327	1700	1700	1700	1452	1700
Volume to Capacity	0.06	0.00	0.01	0.09	0.01	0.04	0.04	0.00	0.06	0.14
Queue Length 95th (ft)	5	0	1	7	0	0	0	0	5	0
Control Delay (s)	15.2	11.0	14.0	9.3	7.7	0.0	0.0	0.0	7.6	0.0
Lane LOS	C	B	B	A	A				A	
Approach Delay (s)	14.4		9.5		0.4				2.0	
Approach LOS	B		A							

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	25.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	11	34	239	22	93	573
Peak Hour Factor	0.67	0.67	0.76	0.76	0.69	0.69
Hourly flow rate (vph)	16	51	314	29	135	830

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	67	314	29	135	830
Volume Left (vph)	16	314	0	0	0
Volume Right (vph)	0	0	29	0	830
Hadj (s)	0.08	0.53	-0.67	0.03	-0.67
Departure Headway (s)	6.6	7.2	6.0	5.9	5.2
Degree Utilization, x	0.12	0.63	0.05	0.22	1.20
Capacity (veh/h)	522	494	588	592	697
Control Delay (s)	10.6	20.3	8.1	9.4	122.3
Approach Delay (s)	10.6	19.3		106.5	
Approach LOS	B	C		F	

Intersection Summary			
Delay	80.0		
HCM Level of Service	F		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	101	104	3	0	136	529	1	0	1	196	0	42
Peak Hour Factor	0.69	0.69	0.69	0.89	0.89	0.89	0.25	1.00	1.00	0.78	0.78	0.78
Hourly flow rate (vph)	146	151	4	0	153	594	4	0	1	251	0	54

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	222	80	153	594	5	305
Volume Left (vph)	146	0	0	0	4	251
Volume Right (vph)	0	4	0	594	1	54
Hadj (s)	0.38	0.04	0.08	-0.67	0.07	0.09
Departure Headway (s)	7.0	6.6	6.2	5.4	7.3	6.3
Degree Utilization, x	0.43	0.15	0.26	0.89	0.01	0.54
Capacity (veh/h)	494	523	568	657	431	543
Control Delay (s)	13.9	9.6	10.2	35.7	10.4	16.5
Approach Delay (s)	12.7		30.5		10.4	16.5
Approach LOS	B		D		B	C

Intersection Summary			
Delay	23.3		
HCM Level of Service	C		
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #30 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.344
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	10.6
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Bullard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	56	6	9	23	14	27	101	385	56	56	190	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	56	6	9	23	14	27	101	385	56	56	190	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	56	6	9	23	14	27	101	385	56	56	190	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	61	7	10	25	15	29	110	418	61	61	207	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	61	7	10	25	15	29	110	418	61	61	207	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	61	7	10	25	15	29	110	418	61	61	207	41
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	445	944	519	441	469	517	559	1218	685	512	1105	616
Capacity Analysis Module:												
Vol/Sat:	0.14	0.01	0.02	0.06	0.03	0.06	0.20	0.34	0.09	0.12	0.19	0.07
Crit Moves:	****					****		****			****	
Delay/Veh:	11.3	9.7	9.1	10.6	9.9	9.4	10.4	11.3	8.2	10.3	10.3	8.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.3	9.7	9.1	10.6	9.9	9.4	10.4	11.3	8.2	10.3	10.3	8.6
LOS by Move:	B	A	A	B	A	A	B	B	A	B	B	A
ApproachDel:	10.9			9.9			10.9			10.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	10.9			9.9			10.9			10.1		
LOS by Appr:	B			A			B			B		
AllWayAvgQ:	0.1	0.0	0.0	0.1	0.0	0.0	0.2	0.5	0.1	0.1	0.2	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3494		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3494		1770	3539	1583	1770	3539	1583
Volume (vph)	148	534	68	142	703	65	158	757	141	75	732	90
Peak-hour factor, PHF	0.81	0.81	0.81	0.92	0.92	0.92	0.97	0.97	0.97	0.87	0.87	0.87
Adj. Flow (vph)	183	659	84	154	764	71	163	780	145	86	841	103
RTOR Reduction (vph)	0	0	54	0	8	0	0	0	44	0	0	35
Lane Group Flow (vph)	183	659	30	154	827	0	163	780	101	86	841	68
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.9	32.4	32.4	7.5	28.0		8.5	26.9	26.9	6.0	24.4	24.4
Effective Green, g (s)	12.4	32.9	32.9	8.0	28.5		9.0	27.4	27.4	6.5	24.9	24.9
Actuated g/C Ratio	0.14	0.36	0.36	0.09	0.31		0.10	0.30	0.30	0.07	0.27	0.27
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	242	675	574	156	1097		175	1068	478	127	970	434
v/s Ratio Prot	c0.10	c0.35		c0.09	0.24		c0.09	0.22		0.05	c0.24	
v/s Ratio Perm			0.02						0.06			0.04
v/c Ratio	0.76	0.98	0.05	0.99	0.75		0.93	0.73	0.21	0.68	0.87	0.16
Uniform Delay, d1	37.7	28.6	18.8	41.3	28.0		40.6	28.4	23.6	41.1	31.4	25.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.6	28.5	0.0	67.6	3.0		48.3	4.4	1.0	13.4	10.3	0.8
Delay (s)	50.4	57.1	18.9	109.0	31.0		88.9	32.8	24.6	54.5	41.7	25.8
Level of Service	D	E	B	F	C		F	C	C	D	D	C
Approach Delay (s)		52.3			43.1			40.1			41.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	43.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	6	4	2	4	10	6	2	80	2	6	86	6
Peak Hour Factor	0.72	0.72	0.72	0.47	0.47	0.47	0.69	0.69	0.69	0.87	0.87	0.87
Hourly flow rate (vph)	8	6	3	9	21	13	3	116	3	7	99	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	258	237	99	240	241	116	106			119		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	258	237	99	240	241	116	106			119		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	100	99	97	99	100			100		
cM capacity (veh/h)	665	659	957	704	656	936	1485			1469		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	17	43	119	3	106	7
Volume Left	8	9	3	0	7	0
Volume Right	3	13	0	3	0	7
cSH	699	732	1485	1700	1469	1700
Volume to Capacity	0.02	0.06	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	2	5	0	0	0	0
Control Delay (s)	10.3	10.2	0.2	0.0	0.5	0.0
Lane LOS	B	B	A		A	
Approach Delay (s)	10.3	10.2	0.2		0.5	
Approach LOS	B	B				

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1810	1538	1719	3438	1719	1538
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1810	1538	1719	3438	1719	1538
Volume (vph)	560	181	400	1001	55	259
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.88	0.88
Adj. Flow (vph)	629	203	449	1125	62	294
RTOR Reduction (vph)	0	127	0	0	0	232
Lane Group Flow (vph)	629	76	449	1125	62	62
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	33.1	33.1	24.8	62.4	18.6	18.6
Effective Green, g (s)	33.6	33.6	25.3	62.9	19.1	19.1
Actuated g/C Ratio	0.37	0.37	0.28	0.70	0.21	0.21
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	676	574	483	2403	365	326
v/s Ratio Prot	c0.35		c0.26	0.33	0.04	
v/s Ratio Perm		0.05				c0.04
v/c Ratio	0.93	0.13	0.93	0.47	0.17	0.19
Uniform Delay, d1	27.1	18.6	31.5	6.1	29.0	29.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.5	0.1	24.3	0.1	1.0	1.3
Delay (s)	46.6	18.7	55.8	6.2	30.0	30.4
Level of Service	D	B	E	A	C	C
Approach Delay (s)	39.8			20.3	30.3	
Approach LOS	D			C	C	

Intersection Summary			
HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1719	1810	3438	1538	1719	1538
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1719	1810	3438	1538	1719	1538
Volume (vph)	41	818	1159	302	237	214
Peak-hour factor, PHF	0.84	0.84	0.93	0.93	0.87	0.87
Adj. Flow (vph)	49	974	1246	325	272	246
RTOR Reduction (vph)	0	0	0	175	0	178
Lane Group Flow (vph)	49	974	1246	151	272	68
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	4.5	38.6	29.6	29.6	17.4	17.4
Effective Green, g (s)	5.0	39.1	30.1	30.1	17.9	17.9
Actuated g/C Ratio	0.08	0.60	0.46	0.46	0.28	0.28
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	132	1089	1592	712	473	424
v/s Ratio Prot	0.03	c0.54	0.36		c0.16	
v/s Ratio Perm				0.10		0.04
v/c Ratio	0.37	0.89	0.78	0.21	0.58	0.16
Uniform Delay, d1	28.5	11.2	14.7	10.4	20.3	17.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	9.6	2.6	0.1	5.0	0.8
Delay (s)	30.3	20.8	17.3	10.5	25.3	18.7
Level of Service	C	C	B	B	C	B
Approach Delay (s)		21.2	15.9		22.1	
Approach LOS		C	B		C	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1719	3438	1538	1719	3438	1538	1719	3438	1538	1719	3438	1538
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1719	3438	1538	1719	3438	1538	1719	3438	1538	1719	3438	1538
Volume (vph)	20	936	47	321	1343	166	79	216	23	40	502	686
Peak-hour factor, PHF	0.70	0.70	0.70	0.87	0.87	0.87	0.87	0.87	0.87	0.84	0.84	0.84
Adj. Flow (vph)	29	1337	67	369	1544	191	91	248	26	48	598	817
RTOR Reduction (vph)	0	0	23	0	0	57	0	0	18	0	0	214
Lane Group Flow (vph)	29	1337	44	369	1544	134	91	248	8	48	598	603
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	4.5	40.3	40.3	20.5	56.3	56.3	7.5	37.3	37.3	6.6	36.4	36.4
Effective Green, g (s)	5.0	40.8	40.8	21.0	56.8	56.8	8.0	37.8	37.8	7.1	36.9	36.9
Actuated g/C Ratio	0.04	0.33	0.33	0.17	0.46	0.46	0.07	0.31	0.31	0.06	0.30	0.30
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	70	1143	511	294	1592	712	112	1059	474	99	1034	463
v/s Ratio Prot	0.02	c0.39		c0.21	0.45		c0.05	0.07		0.03	0.17	
v/s Ratio Perm			0.03			0.09			0.01			c0.39
v/c Ratio	0.41	1.17	0.09	1.26	0.97	0.19	0.81	0.23	0.02	0.48	0.58	1.30
Uniform Delay, d1	57.4	41.0	28.1	50.8	32.1	19.4	56.6	31.7	29.5	56.0	36.3	42.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	86.0	0.1	139.6	15.8	0.1	34.4	0.5	0.1	3.7	2.4	151.2
Delay (s)	61.4	127.0	28.2	190.4	47.9	19.5	91.0	32.2	29.6	59.7	38.7	194.1
Level of Service	E	F	C	F	D	B	F	C	C	E	D	F
Approach Delay (s)		121.0			70.3			46.7			126.1	
Approach LOS		F			E			D			F	

Intersection Summary			
HCM Average Control Delay	97.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	122.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4940	1583	3433	4940	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4940	1583	3433	4940	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	262	1329	127	184	1472	159	240	611	132	309	308	151
Peak-hour factor, PHF	0.87	0.87	0.87	0.78	0.78	0.78	0.85	0.85	0.85	0.95	0.95	0.95
Adj. Flow (vph)	301	1528	146	236	1887	204	282	719	155	325	324	159
RTOR Reduction (vph)	0	0	73	0	0	77	0	0	92	0	0	125
Lane Group Flow (vph)	301	1528	73	236	1887	127	282	719	63	325	324	34
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.5	30.5	30.5	7.5	30.5	30.5	7.5	16.5	16.5	7.5	16.5	16.5
Effective Green, g (s)	8.0	31.0	31.0	8.0	31.0	31.0	8.0	17.0	17.0	8.0	17.0	17.0
Actuated g/C Ratio	0.10	0.39	0.39	0.10	0.39	0.39	0.10	0.21	0.21	0.10	0.21	0.21
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1914	613	343	1914	613	343	752	336	343	752	336
v/s Ratio Prot	c0.09	0.31		0.07	c0.38		0.08	c0.20		c0.09	0.09	
v/s Ratio Perm			0.05			0.08			0.04			0.02
v/c Ratio	0.88	0.80	0.12	0.69	0.99	0.21	0.82	0.96	0.19	0.95	0.43	0.10
Uniform Delay, d1	35.5	21.7	15.7	34.8	24.3	16.3	35.3	31.1	25.8	35.8	27.3	25.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.4	2.4	0.1	5.7	17.2	0.2	14.6	23.7	1.2	34.7	1.8	0.6
Delay (s)	57.0	24.1	15.8	40.4	41.5	16.5	49.9	54.8	27.1	70.5	29.1	25.9
Level of Service	E	C	B	D	D	B	D	D	C	E	C	C
Approach Delay (s)		28.5			39.2			49.9			45.1	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	38.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4940	1583	3433	4940	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4940	1583	3433	4940	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	450	1180	198	274	1209	150	386	526	162	195	320	326
Peak-hour factor, PHF	0.85	0.85	0.85	0.87	0.87	0.87	0.80	0.80	0.80	0.88	0.88	0.88
Adj. Flow (vph)	529	1388	233	315	1390	172	482	658	202	222	364	370
RTOR Reduction (vph)	0	0	117	0	0	97	0	0	122	0	0	202
Lane Group Flow (vph)	529	1388	116	315	1390	75	482	658	80	222	364	168
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.5	30.6	30.6	10.4	26.5	26.5	13.5	23.5	23.5	7.5	17.5	17.5
Effective Green, g (s)	15.0	31.1	31.1	10.9	27.0	27.0	14.0	24.0	24.0	8.0	18.0	18.0
Actuated g/C Ratio	0.17	0.35	0.35	0.12	0.30	0.30	0.16	0.27	0.27	0.09	0.20	0.20
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	572	1707	547	416	1482	475	534	944	422	305	708	317
v/s Ratio Prot	c0.15	0.28		0.09	c0.28		c0.14	c0.19		0.06	0.10	
v/s Ratio Perm			0.07			0.05			0.05			0.11
v/c Ratio	0.92	0.81	0.21	0.76	0.94	0.16	0.90	0.70	0.19	0.73	0.51	0.53
Uniform Delay, d1	36.9	26.8	20.8	38.3	30.7	23.1	37.3	29.7	25.5	39.9	32.1	32.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.9	3.1	0.2	7.7	11.5	0.2	18.5	4.3	1.0	8.4	2.7	6.2
Delay (s)	57.8	29.9	21.0	46.0	42.2	23.3	55.8	34.0	26.5	48.3	34.8	38.4
Level of Service	E	C	C	D	D	C	E	C	C	D	C	D
Approach Delay (s)		35.8			41.1			40.7			39.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	38.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	4940	1583	3433	4940	1583	3433	3438	1583	3433	3438	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	4940	1583	3433	4940	1583	3433	3438	1583	3433	3438	1583
Volume (vph)	182	1137	109	237	1237	103	197	293	117	121	438	140
Peak-hour factor, PHF	0.81	0.81	0.81	0.88	0.88	0.88	0.77	0.77	0.77	0.94	0.94	0.94
Adj. Flow (vph)	225	1404	135	269	1406	117	256	381	152	129	466	149
RTOR Reduction (vph)	0	0	95	0	0	70	0	0	110	0	0	111
Lane Group Flow (vph)	225	1404	40	269	1406	47	256	381	42	129	466	38
Heavy Vehicles (%)	2%	5%	2%	2%	5%	2%	2%	5%	2%	2%	5%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.4	20.5	20.5	7.5	20.6	20.6	7.5	19.0	19.0	5.9	17.4	17.4
Effective Green, g (s)	7.9	21.0	21.0	8.0	21.1	21.1	8.0	19.5	19.5	6.4	17.9	17.9
Actuated g/C Ratio	0.11	0.30	0.30	0.11	0.30	0.30	0.11	0.28	0.28	0.09	0.25	0.25
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	383	1463	469	387	1470	471	387	946	435	310	868	400
v/s Ratio Prot	0.07	0.28		c0.08	c0.28		c0.07	0.11		0.04	c0.14	
v/s Ratio Perm			0.03			0.03			0.03			0.02
v/c Ratio	0.59	0.96	0.09	0.70	0.96	0.10	0.66	0.40	0.10	0.42	0.54	0.09
Uniform Delay, d1	30.0	24.5	18.0	30.3	24.4	18.0	30.2	21.0	19.1	30.5	22.9	20.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	14.8	0.1	5.3	14.3	0.1	4.2	1.3	0.4	0.9	2.4	0.5
Delay (s)	32.3	39.4	18.1	35.6	38.8	18.1	34.4	22.2	19.6	31.4	25.3	20.8
Level of Service	C	D	B	D	D	B	C	C	B	C	C	C
Approach Delay (s)		36.8			36.9			25.7			25.4	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	33.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.92	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3438	1538	1719	3438		1719		1538	1719	3177	
Flt Permitted		1.00	1.00	0.95	1.00		0.66		1.00	0.95	1.00	
Satd. Flow (perm)		3438	1538	1719	3438		1189		1538	1719	3177	
Volume (vph)	0	850	59	319	947	0	45	0	396	121	66	68
Peak-hour factor, PHF	0.93	0.93	0.93	0.86	0.86	0.86	0.80	0.80	0.80	0.89	0.89	0.89
Adj. Flow (vph)	0	914	63	371	1101	0	56	0	495	136	74	76
RTOR Reduction (vph)	0	0	36	0	0	0	0	0	357	0	55	0
Lane Group Flow (vph)	0	914	27	371	1101	0	56	0	138	136	95	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		18.5	18.5	15.2	38.2		17.5		17.5	17.5	17.5	
Effective Green, g (s)		19.0	19.0	15.7	38.7		18.0		18.0	18.0	18.0	
Actuated g/C Ratio		0.29	0.29	0.24	0.60		0.28		0.28	0.28	0.28	
Clearance Time (s)		4.5	4.5	4.5	4.5		4.5		4.5	4.5	4.5	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1010	452	417	2056		331		428	478	884	
v/s Ratio Prot		c0.27		c0.22	0.32						0.03	
v/s Ratio Perm			0.02				0.05		c0.09	0.08		
v/c Ratio		0.90	0.06	0.89	0.54		0.17		0.32	0.28	0.11	
Uniform Delay, d1		22.0	16.4	23.7	7.7		17.7		18.5	18.3	17.4	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		11.3	0.1	20.0	0.3		0.2		0.4	1.5	0.2	
Delay (s)		33.3	16.5	43.7	8.0		17.9		18.9	19.8	17.6	
Level of Service		C	B	D	A		B		B	B	B	
Approach Delay (s)		32.2			17.0			18.8			18.7	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.89	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1719	3438			3438	1538	1633	1446	1461	3335		1538
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.47		1.00
Satd. Flow (perm)	1719	3438			3438	1538	1633	1446	1461	1664		1538
Volume (vph)	192	920	0	0	725	564	464	15	701	164	0	315
Peak-hour factor, PHF	0.79	0.79	0.79	0.89	0.89	0.89	0.91	0.91	0.91	0.70	0.70	0.70
Adj. Flow (vph)	243	1165	0	0	815	634	510	16	770	234	0	450
RTOR Reduction (vph)	0	0	0	0	0	234	0	49	49	0	0	217
Lane Group Flow (vph)	243	1165	0	0	815	400	409	419	370	234	0	233
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	12.5	41.5			24.5	24.5	29.0	29.0	29.0	16.0		16.0
Effective Green, g (s)	13.0	42.0			25.0	25.0	29.5	29.5	29.5	16.5		16.5
Actuated g/C Ratio	0.13	0.42			0.25	0.25	0.30	0.30	0.30	0.16		0.16
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5	4.5		4.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	223	1444			860	385	482	427	431	275		254
v/s Ratio Prot	c0.14	0.34			0.24		0.25	c0.29				
v/s Ratio Perm						c0.26			0.25	0.14		c0.15
v/c Ratio	1.09	0.81			0.95	1.04	0.85	0.98	0.86	0.85		0.92
Uniform Delay, d1	43.5	25.4			36.9	37.5	33.1	35.0	33.3	40.6		41.1
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	86.2	3.4			19.0	56.3	16.8	39.3	19.5	26.7		38.5
Delay (s)	129.7	28.8			55.8	93.8	49.9	74.3	52.8	67.3		79.6
Level of Service	F	C			E	F	D	E	D	E		E
Approach Delay (s)		46.3			72.5			59.7			75.4	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	61.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

5: Webber Ave. & Herndon Ave

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	3	0	1	8	705	4	2	729	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	3	0	1	9	766	4	2	792	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								560				
pX, platoon unblocked												
vC, conflicting volume	1199	1585	397	1186	1584	385	793			771		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1199	1585	397	1186	1584	385	793			771		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	98	100	100	99			100		
cM capacity (veh/h)	139	106	603	143	106	613	823			840		

Direction, Lane #	SE 1	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	0	4	392	388	398	397
Volume Left	0	3	9	0	2	0
Volume Right	0	1	0	4	0	1
cSH	1700	176	823	1700	840	1700
Volume to Capacity	0.00	0.02	0.01	0.23	0.00	0.23
Queue Length 95th (ft)	0	2	1	0	0	0
Control Delay (s)	0.0	25.9	0.3	0.0	0.1	0.0
Lane LOS	A	D	A		A	
Approach Delay (s)	0.0	25.9	0.2		0.0	
Approach LOS	A	D				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3438	1538	1719	3438	1719	1538
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3438	1538	1719	3438	1719	1538
Volume (vph)	657	53	9	628	48	24
Peak-hour factor, PHF	0.73	0.73	0.93	0.93	0.69	0.69
Adj. Flow (vph)	900	73	10	675	70	35
RTOR Reduction (vph)	0	46	0	0	0	22
Lane Group Flow (vph)	900	27	10	675	70	13
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	19.8	19.8	1.3	25.6	20.4	20.4
Effective Green, g (s)	20.3	20.3	1.8	26.1	20.9	20.9
Actuated g/C Ratio	0.37	0.37	0.03	0.47	0.38	0.38
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1269	568	56	1631	653	584
v/s Ratio Prot	c0.26		0.01	c0.20	c0.04	
v/s Ratio Perm		0.02				0.01
v/c Ratio	0.71	0.05	0.18	0.41	0.11	0.02
Uniform Delay, d1	14.8	11.1	25.9	9.4	11.0	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.0	1.5	0.2	0.3	0.1
Delay (s)	16.7	11.2	27.4	9.6	11.4	10.7
Level of Service	B	B	C	A	B	B
Approach Delay (s)	16.3			9.9	11.1	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	3438	1538	1719	3438	1538	3335	1543		3335	1544	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1719	3438	1538	1719	3438	1538	3335	1543		3335	1544	
Volume (vph)	45	613	16	39	619	6	9	1	45	8	1	41
Peak-hour factor, PHF	0.79	0.79	0.79	0.81	0.81	0.81	0.69	0.69	0.69	0.75	0.75	0.75
Adj. Flow (vph)	57	776	20	48	764	7	13	1	65	11	1	55
RTOR Reduction (vph)	0	0	15	0	0	5	0	40	0	0	34	0
Lane Group Flow (vph)	57	776	5	48	764	2	13	26	0	11	22	0
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	2%	5%	5%	2%	5%
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	4.5	16.9	16.9	4.4	16.8	16.8	1.3	24.5		1.2	24.4	
Effective Green, g (s)	5.0	17.4	17.4	4.9	17.3	17.3	1.8	25.0		1.7	24.9	
Actuated g/C Ratio	0.08	0.27	0.27	0.08	0.27	0.27	0.03	0.38		0.03	0.38	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	132	920	412	130	915	409	92	593		87	591	
v/s Ratio Prot	c0.03	c0.23		0.03	0.22		c0.00	c0.02		0.00	0.01	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.43	0.84	0.01	0.37	0.83	0.00	0.14	0.04		0.13	0.04	
Uniform Delay, d1	28.6	22.5	17.5	28.6	22.5	17.5	30.8	12.5		30.9	12.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.3	7.1	0.0	1.8	6.7	0.0	0.7	0.1		0.7	0.1	
Delay (s)	30.9	29.6	17.5	30.4	29.2	17.5	31.6	12.7		31.6	12.7	
Level of Service	C	C	B	C	C	B	C	B		C	B	
Approach Delay (s)		29.4			29.1			15.8			15.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	21	6	60	24	11	36
Peak Hour Factor	0.60	0.60	0.59	0.59	0.69	0.69
Hourly flow rate (vph)	35	10	102	41	16	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			45		279	35
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			45		279	35
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		98	95
cM capacity (veh/h)			1544		658	1029

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SW 1	SW 2
Volume Total	35	10	102	41	16	52
Volume Left	0	0	102	0	16	0
Volume Right	0	10	0	0	0	52
cSH	1700	1700	1544	1700	658	1029
Volume to Capacity	0.02	0.01	0.07	0.02	0.02	0.05
Queue Length 95th (ft)	0	0	5	0	2	4
Control Delay (s)	0.0	0.0	7.5	0.0	10.6	8.7
Lane LOS			A		B	A
Approach Delay (s)	0.0		5.4		9.1	
Approach LOS					A	

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	13	43	10	14	45	17
Peak Hour Factor	0.56	0.56	0.65	0.65	0.72	0.72
Hourly flow rate (vph)	23	77	15	22	62	24

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	23	77	37	86
Volume Left (vph)	0	0	15	63
Volume Right (vph)	0	77	0	24
Hadj (s)	0.03	-0.67	0.12	0.01
Departure Headway (s)	4.8	4.1	4.4	4.2
Degree Utilization, x	0.03	0.09	0.05	0.10
Capacity (veh/h)	740	859	788	828
Control Delay (s)	6.7	6.2	7.6	7.7
Approach Delay (s)	6.3		7.6	7.7
Approach LOS	A		A	A

Intersection Summary			
Delay	7.1		
HCM Level of Service	A		
Intersection Capacity Utilization	18.2%	ICU Level of Service	A
Analysis Period (min)	15		

2010 BASELINE TRAFFIC CONDITION

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	105	32	12	478	1054	154
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	114	35	13	520	1146	167

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	149	13	520	1146	167
Volume Left (vph)	114	0	0	1146	0
Volume Right (vph)	0	0	520	0	167
Hadj (s)	0.19	0.03	-0.67	0.53	-0.67
Departure Headway (s)	7.4	6.9	6.2	7.1	5.9
Degree Utilization, x	0.31	0.03	0.90	2.27	0.28
Capacity (veh/h)	474	508	574	513	589
Control Delay (s)	13.6	8.9	40.2	594.5	10.0
Approach Delay (s)	13.6	39.4		520.0	
Approach LOS	B	E		F	

Intersection Summary			
Delay	353.9		
HCM Level of Service	F		
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	26	39	0	585	1285	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	42	0	636	1397	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type	None					
Median storage veh)						
Upstream signal (ft)					1082	
pX, platoon unblocked	0.60	0.60	0.60			
vC, conflicting volume	2033	1397	1397			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2721	1661	1661			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	41	100			
cM capacity (veh/h)	14	72	232			

Direction, Lane #	SE 1	NE 1	SW 1
Volume Total	71	636	1397
Volume Left	28	0	0
Volume Right	42	0	0
cSH	33	1700	1700
Volume to Capacity	2.11	0.37	0.82
Queue Length 95th (ft)	199	0	0
Control Delay (s)	769.9	0.0	0.0
Lane LOS	F		
Approach Delay (s)	769.9	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	25.9		
Intersection Capacity Utilization	115.1%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	55	654	604	0	0	1234
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	711	657	0	0	1341
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						591
pX, platoon unblocked	0.63					
vC, conflicting volume	1998	657			657	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2575	657			657	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	0			100	
cM capacity (veh/h)	18	465			931	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	771	657	1341
Volume Left	60	0	0
Volume Right	711	0	0
cSH	159	1700	1700
Volume to Capacity	4.85	0.39	0.79
Queue Length 95th (ft)	Err	0	0
Control Delay (s)	Err	0.0	0.0
Lane LOS	F		
Approach Delay (s)	Err	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	2783.4		
Intersection Capacity Utilization	115.1%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Volume (vph)	361	114	246	62	200	79	190	985	66	114	945	615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	392	124	267	67	217	86	207	1071	72	124	1027	668
RTOR Reduction (vph)	0	0	163	0	0	73	0	0	46	0	0	268
Lane Group Flow (vph)	392	124	104	67	217	13	207	1071	26	124	1027	400
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.4	17.9	17.9	2.4	10.9	10.9	9.5	24.9	24.9	8.8	24.2	24.2
Effective Green, g (s)	9.4	17.9	17.9	2.4	10.9	10.9	9.5	24.9	24.9	8.8	24.2	24.2
Actuated g/C Ratio	0.13	0.26	0.26	0.03	0.16	0.16	0.14	0.36	0.36	0.13	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	461	905	405	118	551	246	466	1809	563	223	1223	547
v/s Ratio Prot	c0.11	0.04		0.02	c0.06		0.06	0.21		c0.07	c0.29	
v/s Ratio Perm			0.07			0.01			0.02			0.25
v/c Ratio	0.85	0.14	0.26	0.57	0.39	0.05	0.44	0.59	0.05	0.56	0.84	0.73
Uniform Delay, d1	29.6	20.1	20.8	33.3	26.6	25.2	27.8	18.4	14.8	28.8	21.1	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.0	0.1	0.3	6.1	0.5	0.1	0.7	1.4	0.2	3.0	7.0	8.4
Delay (s)	43.6	20.2	21.1	39.4	27.0	25.3	28.5	19.8	14.9	31.8	28.1	28.4
Level of Service	D	C	C	D	C	C	C	B	B	C	C	C
Approach Delay (s)		32.2			28.9			20.9			28.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Weber/Herndon

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: F[61.8]

Street Name:	Weber						Herndon					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 1	1 0	1	1 0	1 1	0
Volume Module:												
Base Vol:	1	0	2	0	0	0	2	1403	0	3	1714	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	0	2	0	0	0	2	1403	0	3	1714	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	0	2	0	0	0	2	1403	0	3	1714	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	1	0	2	0	0	0	2	1525	0	3	1863	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	1	0	2	0	0	0	2	1525	0	3	1863	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	2467	3399	763	2636	3399	932	1863	xxxx	xxxxx	1525	xxxx	xxxxx
Potent Cap.:	26	8	352	12	8	272	328	xxxx	xxxxx	443	xxxx	xxxxx
Move Cap.:	25	7	352	12	7	272	328	xxxx	xxxxx	443	xxxx	xxxxx
Volume/Cap:	0.04	0.00	0.01	0.00	0.00	0.00	0.01	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	16.0	xxxx	xxxxx	13.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	C	*	*	B	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	67	xxxxx	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	61.8	xxxxx	xxxxx	xxxx	xxxxx	16.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	*	C	*	*	*	*	*
ApproachDel:		61.8		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		F		*			*			*		

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	310	964	287	59	1353	223	299	5	154	206	21	312
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	337	1048	312	64	1471	242	325	5	167	224	23	339
RTOR Reduction (vph)	0	0	123	0	0	71	0	0	141	0	0	215
Lane Group Flow (vph)	337	1048	189	64	1471	171	325	5	26	224	23	124
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.0	60.8	60.8	7.0	46.8	46.8	20.0	18.4	18.4	17.8	16.2	16.2
Effective Green, g (s)	21.0	60.8	60.8	7.0	46.8	46.8	20.0	18.4	18.4	17.8	16.2	16.2
Actuated g/C Ratio	0.18	0.51	0.51	0.06	0.39	0.39	0.17	0.15	0.15	0.15	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	310	1793	802	103	1380	617	295	286	243	263	252	214
v/s Ratio Prot	c0.19	0.30		0.04	c0.42		c0.18	0.00		0.13	0.01	
v/s Ratio Perm			0.12			0.11			0.02			c0.08
v/c Ratio	1.09	0.58	0.24	0.62	1.07	0.28	1.10	0.02	0.11	0.85	0.09	0.58
Uniform Delay, d1	49.5	20.7	16.6	55.2	36.6	25.0	50.0	43.1	43.7	49.8	45.5	48.7
Progression Factor	1.00	1.00	1.00	1.20	1.26	1.58	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	76.4	0.5	0.2	8.4	41.1	0.2	82.5	0.1	0.9	22.4	0.2	4.0
Delay (s)	125.9	21.2	16.7	74.9	87.3	39.8	132.5	43.2	44.6	72.2	45.6	52.7
Level of Service	F	C	B	E	F	D	F	D	D	E	D	D
Approach Delay (s)		41.2			80.3			102.0			59.9	
Approach LOS		D			F			F			E	

Intersection Summary			
HCM Average Control Delay	65.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1645		3433	1715	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.43	1.00		0.65	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1571	1645		2357	1715	
Volume (vph)	67	1026	9	162	1212	12	54	32	114	21	129	144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	1115	10	176	1317	13	59	35	124	23	140	157
RTOR Reduction (vph)	0	0	6	0	0	7	0	88	0	0	66	0
Lane Group Flow (vph)	73	1115	4	176	1317	6	59	71	0	23	231	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		
Actuated Green, G (s)	3.2	25.4	25.4	5.0	27.2	27.2	17.6	17.6		17.6	17.6	
Effective Green, g (s)	3.2	25.4	25.4	5.0	27.2	27.2	17.6	17.6		17.6	17.6	
Actuated g/C Ratio	0.05	0.42	0.42	0.08	0.45	0.45	0.29	0.29		0.29	0.29	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	94	1498	670	286	1604	718	461	483		691	503	
v/s Ratio Prot	0.04	0.32		c0.05	c0.37			0.04			c0.13	
v/s Ratio Perm			0.00			0.00	0.04			0.01		
v/c Ratio	0.78	0.74	0.01	0.62	0.82	0.01	0.13	0.15		0.03	0.46	
Uniform Delay, d1	28.0	14.6	10.0	26.6	14.3	9.0	15.6	15.7		15.1	17.3	
Progression Factor	1.28	0.84	1.28	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	26.7	1.6	0.0	3.9	3.5	0.0	0.6	0.6		0.1	3.0	
Delay (s)	62.5	13.9	12.8	30.5	17.8	9.0	16.1	16.3		15.2	20.3	
Level of Service	E	B	B	C	B	A	B	B		B	C	
Approach Delay (s)		16.9			19.2			16.3			19.9	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1610		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1610		3433	1863	1583
Volume (vph)	7	1113	104	110	1205	99	134	32	308	171	67	27
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	1210	113	120	1310	108	146	35	335	186	73	29
RTOR Reduction (vph)	0	0	64	0	0	36	0	106	0	0	0	23
Lane Group Flow (vph)	8	1210	49	120	1310	72	146	264	0	186	73	6
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	30.2	30.2	3.2	32.6	32.6	5.2	15.2		5.4	15.4	15.4
Effective Green, g (s)	0.8	30.2	30.2	3.2	32.6	32.6	5.2	15.2		5.4	15.4	15.4
Actuated g/C Ratio	0.01	0.43	0.43	0.05	0.47	0.47	0.07	0.22		0.08	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	39	1527	683	157	1648	737	255	350		265	410	348
v/s Ratio Prot	0.00	0.34		c0.03	c0.37		0.04	c0.16		c0.05	0.04	
v/s Ratio Perm			0.03			0.05						0.00
v/c Ratio	0.21	0.79	0.07	0.76	0.79	0.10	0.57	0.75		0.70	0.18	0.02
Uniform Delay, d1	34.3	17.2	11.7	33.0	15.9	10.5	31.3	25.6		31.5	22.2	21.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.6	2.9	0.0	19.6	2.7	0.1	3.1	13.9		8.1	0.9	0.1
Delay (s)	36.9	20.1	11.7	52.6	18.6	10.5	34.4	39.6		39.7	23.1	21.5
Level of Service	D	C	B	D	B	B	C	D		D	C	C
Approach Delay (s)		19.5			20.7			38.1			33.6	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	255	1186	169	90	970	268	150	286	147	487	397	273
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	277	1289	184	98	1054	291	163	311	160	529	432	297
RTOR Reduction (vph)	0	0	129	0	0	216	0	0	123	0	0	130
Lane Group Flow (vph)	277	1289	55	98	1054	75	163	311	37	529	432	167
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	19.6	19.6	3.2	16.8	16.8	4.8	15.2	15.2	11.0	21.4	21.4
Effective Green, g (s)	6.0	19.6	19.6	3.2	16.8	16.8	4.8	15.2	15.2	11.0	21.4	21.4
Actuated g/C Ratio	0.09	0.30	0.30	0.05	0.26	0.26	0.07	0.23	0.23	0.17	0.33	0.33
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	317	1533	477	169	1314	409	254	828	370	581	1165	521
v/s Ratio Prot	c0.08	c0.25		0.03	0.21		0.05	0.09		c0.15	c0.12	
v/s Ratio Perm			0.04			0.05			0.02			0.11
v/c Ratio	0.87	0.84	0.12	0.58	0.80	0.18	0.64	0.38	0.10	0.91	0.37	0.32
Uniform Delay, d1	29.1	21.2	16.4	30.2	22.5	18.8	29.3	20.9	19.5	26.5	16.7	16.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.3	4.4	0.1	4.8	3.6	0.2	5.5	1.3	0.5	18.5	0.9	1.6
Delay (s)	51.5	25.6	16.5	35.0	26.2	19.0	34.7	22.2	20.1	45.0	17.6	18.0
Level of Service	D	C	B	D	C	B	C	C	C	D	B	B
Approach Delay (s)		28.7			25.3			24.9			29.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor		0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt		1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)		5085	1583	3433	5085	1583		3539		3433		1583
Flt Permitted		1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (perm)		5085	1583	3433	5085	1583		3539		3433		1583
Volume (vph)	0	1827	1	2	1330	56	0	1	0	56	0	1
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1986	1	2	1446	61	0	1	0	61	0	1
RTOR Reduction (vph)	0	0	0	0	0	21	0	0	0	0	0	1
Lane Group Flow (vph)	0	1986	1	2	1446	40	0	1	0	61	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		49.0	49.0	1.2	54.2	54.2		19.1		4.7		18.3
Effective Green, g (s)		49.0	49.0	1.2	54.2	54.2		19.1		4.7		18.3
Actuated g/C Ratio		0.54	0.54	0.01	0.60	0.60		0.21		0.05		0.20
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)		2769	862	46	3062	953		751		179		322
v/s Ratio Prot		c0.39		0.00	c0.28			c0.00		c0.02		
v/s Ratio Perm			0.00			0.03						0.00
v/c Ratio		0.72	0.00	0.04	0.47	0.04		0.00		0.34		0.00
Uniform Delay, d1		15.3	9.3	43.8	9.9	7.3		27.9		41.2		28.6
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2		0.9	0.0	0.4	0.1	0.0		0.0		1.1		0.0
Delay (s)		16.2	9.3	44.2	10.1	7.3		27.9		42.3		28.6
Level of Service		B	A	D	B	A		C		D		C
Approach Delay (s)		16.2			10.0			27.9			42.1	
Approach LOS		B			A			C			D	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3482		1770	3528		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3482		1770	3528		1770	1863	1583	1770	1863	1583
Volume (vph)	74	1633	196	370	1147	25	155	98	421	66	94	45
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	80	1775	213	402	1247	27	168	107	458	72	102	49
RTOR Reduction (vph)	0	7	0	0	1	0	0	0	216	0	0	42
Lane Group Flow (vph)	80	1981	0	402	1273	0	168	107	242	72	102	7
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	8.7	55.8		22.0	69.1		10.0	21.2	21.2	5.0	16.2	16.2
Effective Green, g (s)	8.7	55.8		22.0	69.1		10.0	21.2	21.2	5.0	16.2	16.2
Actuated g/C Ratio	0.07	0.46		0.18	0.58		0.08	0.18	0.18	0.04	0.13	0.13
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	128	1619		325	2032		148	329	280	74	252	214
v/s Ratio Prot	0.05	c0.57		c0.23	0.36		c0.09	0.06		0.04	0.05	
v/s Ratio Perm									c0.15			0.00
v/c Ratio	0.62	1.22		1.24	0.63		1.14	0.33	0.87	0.97	0.40	0.03
Uniform Delay, d1	54.1	32.1		49.0	16.9		55.0	43.2	48.0	57.4	47.5	45.1
Progression Factor	1.00	1.00		1.19	0.47		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.2	106.2		124.6	0.4		114.9	2.6	28.2	94.8	4.8	0.3
Delay (s)	63.2	138.3		183.1	8.3		169.9	45.8	76.2	152.2	52.3	45.3
Level of Service	E	F		F	A		F	D	E	F	D	D
Approach Delay (s)		135.4			50.3			93.2			83.0	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	96.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	119	2176	90	228	1338	248	142	137	263	222	159	150
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	2365	98	248	1454	270	154	149	286	241	173	163
RTOR Reduction (vph)	0	0	7	0	0	91	0	0	80	0	0	107
Lane Group Flow (vph)	129	2365	91	248	1454	179	154	149	206	241	173	56
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.8	72.0	72.0	7.0	71.2	71.2	7.0	18.0	18.0	7.0	18.0	18.0
Effective Green, g (s)	7.8	72.0	72.0	7.0	71.2	71.2	7.0	18.0	18.0	7.0	18.0	18.0
Actuated g/C Ratio	0.06	0.60	0.60	0.06	0.59	0.59	0.06	0.15	0.15	0.06	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	223	2123	950	200	2100	939	200	531	237	200	531	237
v/s Ratio Prot	0.04	c0.67		c0.07	0.41		0.04	0.04		c0.07	0.05	
v/s Ratio Perm			0.06			0.11			c0.13			0.04
v/c Ratio	0.58	1.11	0.10	1.24	0.69	0.19	0.77	0.28	0.87	1.20	0.33	0.24
Uniform Delay, d1	54.5	24.0	10.2	56.5	16.8	11.2	55.7	45.3	49.9	56.5	45.6	44.9
Progression Factor	1.23	0.82	0.30	1.01	0.52	0.49	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	52.0	0.0	133.8	0.7	0.1	16.6	1.3	32.6	129.8	1.6	2.3
Delay (s)	67.5	71.7	3.0	191.1	9.5	5.6	72.3	46.6	82.4	186.3	47.2	47.3
Level of Service	E	E	A	F	A	A	E	D	F	F	D	D
Approach Delay (s)		68.9			31.8			70.7			105.3	
Approach LOS		E			C			E			F	

Intersection Summary			
HCM Average Control Delay	60.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	62	2621	176	335	1890	130	91	77	306	250	103	48
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	2849	191	364	2054	141	99	84	333	272	112	52
RTOR Reduction (vph)	0	0	49	0	0	36	0	0	94	0	0	40
Lane Group Flow (vph)	67	2849	142	364	2054	105	99	84	239	272	112	12
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	58.8	58.8	11.0	65.8	65.8	6.9	18.2	18.2	16.0	27.3	27.3
Effective Green, g (s)	4.0	58.8	58.8	11.0	65.8	65.8	6.9	18.2	18.2	16.0	27.3	27.3
Actuated g/C Ratio	0.03	0.49	0.49	0.09	0.55	0.55	0.06	0.15	0.15	0.13	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2492	776	315	2788	868	197	537	240	236	1157	360
v/s Ratio Prot	0.02	c0.56		c0.11	0.40		0.03	0.02		c0.15	0.02	
v/s Ratio Perm			0.09			0.07			c0.15			0.01
v/c Ratio	0.59	1.14	0.18	1.16	0.74	0.12	0.50	0.16	1.00	1.15	0.10	0.03
Uniform Delay, d1	57.2	30.6	17.1	54.5	20.5	13.1	54.9	44.2	50.9	52.0	36.6	36.1
Progression Factor	1.01	0.83	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	65.0	0.0	99.8	1.0	0.1	2.0	0.6	56.9	106.0	0.2	0.2
Delay (s)	58.3	90.5	16.8	154.3	21.6	13.2	56.9	44.9	107.7	158.0	36.8	36.2
Level of Service	E	F	B	F	C	B	E	D	F	F	D	D
Approach Delay (s)		85.3			40.0			87.7			112.3	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	69.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Volume (vph)	943	2148	108	247	1284	375	153	800	219	173	728	783
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1025	2335	117	268	1396	408	166	870	238	188	791	851
RTOR Reduction (vph)	0	0	42	0	0	82	0	0	123	0	0	1
Lane Group Flow (vph)	1025	2335	75	268	1396	326	166	870	115	188	791	850
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	29.0	48.0	48.0	8.0	27.0	27.0	5.0	21.0	21.0	7.0	23.0	52.0
Effective Green, g (s)	29.0	48.0	48.0	8.0	27.0	27.0	5.0	21.0	21.0	7.0	23.0	52.0
Actuated g/C Ratio	0.29	0.48	0.48	0.08	0.27	0.27	0.05	0.21	0.21	0.07	0.23	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	996	2441	760	275	1373	427	172	1068	332	240	814	886
v/s Ratio Prot	c0.30	c0.46		0.08	0.27		0.05	0.17		c0.05	0.22	c0.28
v/s Ratio Perm			0.05			0.21			0.07			0.26
v/c Ratio	1.03	0.96	0.10	0.97	1.02	0.76	0.97	0.81	0.35	0.78	0.97	0.96
Uniform Delay, d1	35.5	25.0	14.2	45.9	36.5	33.6	47.4	37.6	33.6	45.8	38.2	23.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.2	9.9	0.1	46.9	28.5	7.9	57.8	6.8	2.8	15.3	25.4	20.7
Delay (s)	71.7	34.9	14.2	92.8	65.0	41.5	105.3	44.5	36.5	61.0	63.6	43.7
Level of Service	E	C	B	F	E	D	F	D	D	E	E	D
Approach Delay (s)		45.1			64.0			50.9			54.1	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	52.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	229	1953	139	109	1583	238	126	255	123	219	383	223
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	249	2123	151	118	1721	259	137	277	134	238	416	242
RTOR Reduction (vph)	0	0	66	0	0	97	0	0	93	0	0	97
Lane Group Flow (vph)	249	2123	85	118	1721	162	137	277	41	238	416	145
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	33.6	33.6	3.2	29.8	29.8	5.0	16.2	16.2	6.0	17.2	17.2
Effective Green, g (s)	7.0	33.6	33.6	3.2	29.8	29.8	5.0	16.2	16.2	6.0	17.2	17.2
Actuated g/C Ratio	0.09	0.45	0.45	0.04	0.40	0.40	0.07	0.22	0.22	0.08	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	320	2278	709	146	2020	629	229	1098	342	275	1166	363
v/s Ratio Prot	c0.07	c0.42		0.03	0.34		0.04	0.05		c0.07	0.08	
v/s Ratio Perm			0.05			0.10			0.03			c0.09
v/c Ratio	0.78	0.93	0.12	0.81	0.85	0.26	0.60	0.25	0.12	0.87	0.36	0.40
Uniform Delay, d1	33.2	19.6	12.1	35.6	20.6	15.2	34.0	24.4	23.7	34.1	24.3	24.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.3	7.7	0.1	26.9	3.7	0.2	4.2	0.6	0.7	23.5	0.9	3.3
Delay (s)	44.5	27.3	12.1	62.5	24.3	15.4	38.2	24.9	24.4	57.6	25.1	27.8
Level of Service	D	C	B	E	C	B	D	C	C	E	C	C
Approach Delay (s)		28.1			25.3			28.1			34.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	822	365	0	0	540	183
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	893	397	0	0	587	199
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1290		893	893
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1290		893	893
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	42
cM capacity (veh/h)			537		312	340

Direction, Lane #	EB 1	EB 2	NB 1
Volume Total	893	397	786
Volume Left	0	0	587
Volume Right	0	397	199
cSH	1700	1700	324
Volume to Capacity	0.53	0.23	2.43
Queue Length 95th (ft)	0	0	1561
Control Delay (s)	0.0	0.0	675.9
Lane LOS			F
Approach Delay (s)	0.0		675.9
Approach LOS			F

Intersection Summary			
Average Delay	255.9		
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	50	1	330	11	2	397
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	1	359	12	2	432
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			55		784	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			55		784	54
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			77		99	57
cM capacity (veh/h)			1549		278	1013

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SW 1
Volume Total	54	1	359	12	434
Volume Left	0	0	359	0	2
Volume Right	0	1	0	0	432
cSH	1700	1700	1549	1700	1018
Volume to Capacity	0.03	0.00	0.23	0.01	0.43
Queue Length 95th (ft)	0	0	22	0	54
Control Delay (s)	0.0	0.0	8.0	0.0	11.2
Lane LOS			A		B
Approach Delay (s)	0.0		7.8		11.2
Approach LOS					B

Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	11	286	186	41	175	142
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	311	202	45	190	154

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	12	311	247	345
Volume Left (vph)	12	0	0	190
Volume Right (vph)	0	311	45	0
Hadj (s)	0.53	-0.67	-0.07	0.14
Departure Headway (s)	6.6	5.4	5.3	5.3
Degree Utilization, x	0.02	0.46	0.36	0.51
Capacity (veh/h)	515	619	644	646
Control Delay (s)	8.5	11.8	11.2	13.7
Approach Delay (s)	11.7		11.2	13.7
Approach LOS	B		B	B

Intersection Summary			
Delay	12.3		
HCM Level of Service	B		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #23 Dante/Polk

Cycle (sec):	100	Critical Vol./Cap.(X):	0.511
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	12.6
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Polk					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	1 0	1	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	52	238	23	60	189	28	54	104	70	40	65	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	52	238	23	60	189	28	54	104	70	40	65	71
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	52	238	23	60	189	28	54	104	70	40	65	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	57	259	25	65	205	30	59	113	76	43	71	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	259	25	65	205	30	59	113	76	43	71	77
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	57	259	25	65	205	30	59	113	76	43	71	77
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.91	0.09	1.00	1.00	1.00	1.00	0.60	0.40	1.00	1.00	1.00
Final Sat.:	506	506	49	470	507	556	474	318	214	438	467	514
Capacity Analysis Module:												
Vol/Sat:	0.11	0.51	0.51	0.14	0.41	0.05	0.12	0.36	0.36	0.10	0.15	0.15
Crit Moves:		****			****				****		****	
Delay/Veh:	10.3	14.9	14.9	11.1	13.8	9.1	10.8	12.3	12.3	11.1	11.0	10.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.3	14.9	14.9	11.1	13.8	9.1	10.8	12.3	12.3	11.1	11.0	10.2
LOS by Move:	B	B	B	B	B	A	B	B	B	B	B	B
ApproachDel:		14.1			12.7			11.9			10.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		14.1			12.7			11.9			10.7	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.1	0.9	0.9	0.1	0.6	0.1	0.1	0.5	0.5	0.1	0.2	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	67	4	7	10	4	190	8	449	0	62	221	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	73	4	8	11	4	207	9	488	0	67	240	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			4			4						
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	753	891	251	886	902	244	262			488		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	753	891	251	886	902	244	262			488		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	64	98	99	95	98	73	99			94		
cM capacity (veh/h)	203	261	749	221	257	757	1299			1071		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	73	12	11	211	9	244	244	0	67	262
Volume Left	73	0	11	0	9	0	0	0	67	0
Volume Right	0	8	0	207	0	0	0	0	0	22
cSH	203	717	221	772	1299	1700	1700	1700	1071	1700
Volume to Capacity	0.36	0.02	0.05	0.27	0.01	0.14	0.14	0.00	0.06	0.15
Queue Length 95th (ft)	38	1	4	28	1	0	0	0	5	0
Control Delay (s)	32.3	13.2	22.1	11.7	7.8	0.0	0.0	0.0	8.6	0.0
Lane LOS	D	B	C	B	A				A	
Approach Delay (s)	29.6		12.2		0.1				1.8	
Approach LOS	D		B							

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	44	144	542	120	103	209
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	157	589	130	112	227

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	204	589	130	112	227
Volume Left (vph)	0	589	0	112	0
Volume Right (vph)	157	0	0	0	227
Hadj (s)	-0.43	0.53	0.03	0.53	-0.67
Departure Headway (s)	5.9	6.4	5.9	7.4	6.2
Degree Utilization, x	0.33	1.05	0.21	0.23	0.39
Capacity (veh/h)	594	552	594	475	566
Control Delay (s)	11.8	76.2	9.3	11.4	12.0
Approach Delay (s)	11.8	64.1		11.8	
Approach LOS	B	F		B	

Intersection Summary			
Delay	41.6		
HCM Level of Service	E		
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	67	187	8	4	125	229	2	1	4	509	6	182
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	73	203	9	4	136	249	2	1	4	553	7	198

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	174	110	140	249	8	758
Volume Left (vph)	73	0	4	0	2	553
Volume Right (vph)	0	9	0	249	4	198
Hadj (s)	0.24	-0.02	0.05	-0.67	-0.25	0.02
Departure Headway (s)	7.4	7.1	7.0	6.3	6.9	5.8
Degree Utilization, x	0.36	0.22	0.27	0.44	0.01	1.21
Capacity (veh/h)	481	498	501	561	480	619
Control Delay (s)	13.2	10.8	11.5	13.0	10.0	130.0
Approach Delay (s)	12.3		12.4		10.0	130.0
Approach LOS	B		B		B	F

Intersection Summary			
Delay	74.3		
HCM Level of Service	F		
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #30 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.436
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	12.1
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Bullard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	185	12	20	103	14	52	19	177	40	28	289	33
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	185	12	20	103	14	52	19	177	40	28	289	33
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	185	12	20	103	14	52	19	177	40	28	289	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	201	13	22	112	15	57	21	192	43	30	314	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	201	13	22	112	15	57	21	192	43	30	314	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	201	13	22	112	15	57	21	192	43	30	314	36
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	461	970	536	445	470	519	456	981	539	478	1032	568
Capacity Analysis Module:												
Vol/Sat:	0.44	0.01	0.04	0.25	0.03	0.11	0.05	0.20	0.08	0.06	0.30	0.06
Crit Moves:	****			****				****			****	
Delay/Veh:	15.4	9.7	9.2	12.7	10.0	9.8	10.4	11.2	9.4	10.3	12.1	9.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.4	9.7	9.2	12.7	10.0	9.8	10.4	11.2	9.4	10.3	12.1	9.0
LOS by Move:	C	A	A	B	B	A	B	B	A	B	B	A
ApproachDel:	14.5			11.6			10.8			11.6		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	14.5			11.6			10.8			11.6		
LOS by Appr:	B			B			B			B		
AllWayAvgQ:	0.7	0.0	0.0	0.3	0.0	0.1	0.0	0.2	0.1	0.1	0.4	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Volume (vph)	170	894	81	104	545	95	49	432	82	86	461	69
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	972	88	113	592	103	53	470	89	93	501	75
RTOR Reduction (vph)	0	0	40	0	15	0	0	0	46	0	0	43
Lane Group Flow (vph)	185	972	48	113	680	0	53	470	43	93	501	32
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.7	47.0	47.0	6.0	39.3		3.2	16.0	16.0	5.0	17.8	17.8
Effective Green, g (s)	13.7	47.0	47.0	6.0	39.3		3.2	16.0	16.0	5.0	17.8	17.8
Actuated g/C Ratio	0.15	0.52	0.52	0.07	0.44		0.04	0.18	0.18	0.06	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	269	973	827	118	1511		63	629	281	98	700	313
v/s Ratio Prot	0.10	c0.52		c0.06	0.20		0.03	0.13		c0.05	c0.14	
v/s Ratio Perm			0.03						0.03			0.02
v/c Ratio	0.69	1.00	0.06	0.96	0.45		0.84	0.75	0.15	0.95	0.72	0.10
Uniform Delay, d1	36.1	21.5	10.6	41.9	17.8		43.1	35.1	31.3	42.4	33.7	29.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.1	28.4	0.0	68.8	0.2		60.8	4.8	0.3	73.5	3.5	0.1
Delay (s)	43.2	49.9	10.6	110.7	18.0		104.0	39.9	31.5	115.9	37.2	29.7
Level of Service	D	D	B	F	B		F	D	C	F	D	C
Approach Delay (s)		46.1			31.0			44.2			47.3	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	42.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	59	29	11	4	18	58	8	307	6	38	163	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	64	32	12	4	20	63	9	334	7	41	177	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	684	617	177	639	638	334	204			340		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	684	617	177	639	638	334	204			340		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	79	92	99	99	95	91	99			97		
cM capacity (veh/h)	308	389	866	349	379	708	1367			1219		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	108	87	342	7	218	27
Volume Left	64	4	9	0	41	0
Volume Right	12	63	0	7	0	27
cSH	355	568	1367	1700	1219	1700
Volume to Capacity	0.30	0.15	0.01	0.00	0.03	0.02
Queue Length 95th (ft)	31	13	0	0	3	0
Control Delay (s)	19.5	12.5	0.3	0.0	1.8	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	19.5	12.5	0.2		1.6	
Approach LOS	C	B				

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Volume (vph)	896	487	571	846	65	267
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	974	529	621	920	71	290
RTOR Reduction (vph)	0	179	0	0	0	249
Lane Group Flow (vph)	974	350	621	920	71	41
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	55.0	55.0	36.0	95.0	17.0	17.0
Effective Green, g (s)	55.0	55.0	36.0	95.0	17.0	17.0
Actuated g/C Ratio	0.46	0.46	0.30	0.79	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	854	726	531	2802	251	224
v/s Ratio Prot	c0.52		c0.35	0.26	c0.04	
v/s Ratio Perm		0.22				0.03
v/c Ratio	1.14	0.48	1.17	0.33	0.28	0.18
Uniform Delay, d1	32.5	22.6	42.0	3.5	46.0	45.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	77.2	0.5	95.0	0.1	2.8	1.8
Delay (s)	109.7	23.1	137.0	3.6	48.9	47.2
Level of Service	F	C	F	A	D	D
Approach Delay (s)	79.2			57.4	47.5	
Approach LOS	E			E	D	

Intersection Summary			
HCM Average Control Delay	66.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Volume (vph)	112	1033	1157	259	145	254
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	1123	1258	282	158	276
RTOR Reduction (vph)	0	0	0	140	0	160
Lane Group Flow (vph)	122	1123	1258	142	158	116
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	5.6	44.8	35.2	35.2	17.2	17.2
Effective Green, g (s)	5.6	44.8	35.2	35.2	17.2	17.2
Actuated g/C Ratio	0.08	0.64	0.50	0.50	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	142	1192	1780	796	435	389
v/s Ratio Prot	0.07	c0.60	0.36		c0.09	
v/s Ratio Perm				0.09		0.07
v/c Ratio	0.86	0.94	0.71	0.18	0.36	0.30
Uniform Delay, d1	31.8	11.4	13.4	9.5	21.9	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	37.1	14.3	1.3	0.1	2.3	2.0
Delay (s)	68.9	25.8	14.7	9.6	24.2	23.4
Level of Service	E	C	B	A	C	C
Approach Delay (s)		30.0	13.8		23.7	
Approach LOS		C	B		C	

Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	36	1004	38	370	1126	161	213	379	30	17	301	526
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1091	41	402	1224	175	232	412	33	18	327	572
RTOR Reduction (vph)	0	0	21	0	0	78	0	0	24	0	0	301
Lane Group Flow (vph)	39	1091	20	402	1224	97	232	412	9	18	327	271
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	3.6	31.6	31.6	22.0	50.0	50.0	13.0	28.4	28.4	2.0	17.4	17.4
Effective Green, g (s)	3.6	31.6	31.6	22.0	50.0	50.0	13.0	28.4	28.4	2.0	17.4	17.4
Actuated g/C Ratio	0.04	0.32	0.32	0.22	0.50	0.50	0.13	0.28	0.28	0.02	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	64	1118	500	389	1770	792	230	1005	450	35	616	275
v/s Ratio Prot	0.02	c0.31		c0.23	0.35		c0.13	0.12		0.01	0.09	
v/s Ratio Perm			0.01			0.06			0.01			c0.17
v/c Ratio	0.61	0.98	0.04	1.03	0.69	0.12	1.01	0.41	0.02	0.51	0.53	0.99
Uniform Delay, d1	47.5	33.8	23.7	39.0	19.1	13.3	43.5	29.0	25.8	48.5	37.6	41.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.3	21.1	0.0	54.5	1.2	0.1	61.6	1.2	0.1	12.2	3.3	51.0
Delay (s)	62.8	54.9	23.7	93.5	20.3	13.4	105.1	30.2	25.9	60.7	40.8	92.2
Level of Service	E	D	C	F	C	B	F	C	C	E	D	F
Approach Delay (s)		54.1			36.0			55.7			73.3	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	51.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	103	1191	73	121	1127	94	170	230	64	235	684	145
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	1295	79	132	1225	102	185	250	70	255	743	158
RTOR Reduction (vph)	0	0	55	0	0	71	0	0	51	0	0	112
Lane Group Flow (vph)	112	1295	24	132	1225	31	185	250	19	255	743	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	18.0	18.0	3.2	18.0	18.0	5.3	16.5	16.5	6.3	17.5	17.5
Effective Green, g (s)	3.2	18.0	18.0	3.2	18.0	18.0	5.3	16.5	16.5	6.3	17.5	17.5
Actuated g/C Ratio	0.05	0.30	0.30	0.05	0.30	0.30	0.09	0.28	0.28	0.10	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1526	475	183	1526	475	303	973	435	360	1032	462
v/s Ratio Prot	0.03	c0.25		c0.04	0.24		0.05	0.07		c0.07	c0.21	
v/s Ratio Perm			0.01			0.02			0.01			0.03
v/c Ratio	0.61	0.85	0.05	0.72	0.80	0.06	0.61	0.26	0.04	0.71	0.72	0.10
Uniform Delay, d1	27.8	19.7	14.9	28.0	19.4	15.0	26.4	17.0	16.0	26.0	19.1	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	4.6	0.0	13.1	3.2	0.1	3.6	0.6	0.2	6.3	4.3	0.4
Delay (s)	33.7	24.3	15.0	41.1	22.5	15.0	30.0	17.6	16.2	32.2	23.4	15.9
Level of Service	C	C	B	D	C	B	C	B	B	C	C	B
Approach Delay (s)		24.5			23.7			21.9			24.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	247	1432	101	144	943	59	181	408	384	279	509	403
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	1557	110	157	1025	64	197	443	417	303	553	438
RTOR Reduction (vph)	0	0	64	0	0	46	0	0	110	0	0	110
Lane Group Flow (vph)	268	1557	46	157	1025	18	197	443	307	303	553	328
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	23.0	23.0	4.0	20.0	20.0	5.0	20.0	20.0	7.0	22.0	22.0
Effective Green, g (s)	7.0	23.0	23.0	4.0	20.0	20.0	5.0	20.0	20.0	7.0	22.0	22.0
Actuated g/C Ratio	0.10	0.33	0.33	0.06	0.29	0.29	0.07	0.29	0.29	0.10	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1671	520	196	1453	452	245	1011	452	343	1112	498
v/s Ratio Prot	c0.08	c0.31		0.05	0.20		0.06	0.13		c0.09	0.16	
v/s Ratio Perm			0.03			0.01			0.19			c0.21
v/c Ratio	0.78	0.93	0.09	0.80	0.71	0.04	0.80	0.44	0.68	0.88	0.50	0.66
Uniform Delay, d1	30.8	22.7	16.3	32.6	22.4	18.1	32.0	20.4	22.2	31.1	19.5	20.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.0	9.9	0.1	20.5	1.6	0.0	17.2	1.4	8.0	22.5	1.6	6.7
Delay (s)	41.8	32.6	16.3	53.1	23.9	18.1	49.2	21.8	30.1	53.6	21.1	27.5
Level of Service	D	C	B	D	C	B	D	C	C	D	C	C
Approach Delay (s)		33.0			27.3			30.2			30.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	122	1578	146	155	1065	67	200	538	266	148	419	158
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	1715	159	168	1158	73	217	585	289	161	455	172
RTOR Reduction (vph)	0	0	100	0	0	47	0	0	113	0	0	113
Lane Group Flow (vph)	133	1715	59	168	1158	26	217	585	176	161	455	59
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	23.8	23.8	4.0	23.8	23.8	5.0	17.0	17.0	5.0	17.0	17.0
Effective Green, g (s)	4.0	23.8	23.8	4.0	23.8	23.8	5.0	17.0	17.0	5.0	17.0	17.0
Actuated g/C Ratio	0.06	0.36	0.36	0.06	0.36	0.36	0.08	0.26	0.26	0.08	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	209	1839	573	209	1839	573	261	914	409	261	914	409
v/s Ratio Prot	0.04	c0.34		c0.05	0.23		c0.06	c0.17		0.05	0.13	
v/s Ratio Perm			0.04			0.02			0.11			0.04
v/c Ratio	0.64	0.93	0.10	0.80	0.63	0.05	0.83	0.64	0.43	0.62	0.50	0.14
Uniform Delay, d1	30.2	20.2	13.9	30.5	17.4	13.6	30.0	21.7	20.4	29.5	20.8	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	9.2	0.1	19.6	0.7	0.0	19.7	3.4	3.3	4.3	1.9	0.7
Delay (s)	36.4	29.4	14.0	50.1	18.0	13.7	49.6	25.1	23.7	33.8	22.7	19.5
Level of Service	D	C	B	D	B	B	D	C	C	C	C	B
Approach Delay (s)		28.7			21.7			29.6			24.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.89	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3151	
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1274		1583	1770	3151	
Volume (vph)	0	1466	35	137	501	0	20	0	403	161	27	73
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1593	38	149	545	0	22	0	438	175	29	79
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	155	0	59	0
Lane Group Flow (vph)	0	1593	27	149	545	0	22	0	283	175	49	0
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		35.8	35.8	8.0	47.8		19.0		19.0	19.0	19.0	
Effective Green, g (s)		35.8	35.8	8.0	47.8		19.0		19.0	19.0	19.0	
Actuated g/C Ratio		0.48	0.48	0.11	0.64		0.25		0.25	0.25	0.25	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1694	758	189	2262		324		402	450	800	
v/s Ratio Prot		c0.45		c0.08	0.15						0.02	
v/s Ratio Perm			0.02				0.02		c0.18	0.10		
v/c Ratio		0.94	0.04	0.79	0.24		0.07		0.70	0.39	0.06	
Uniform Delay, d1		18.5	10.3	32.6	5.8		21.2		25.3	23.1	21.1	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		10.8	0.0	19.2	0.1		0.1		5.5	2.5	0.1	
Delay (s)		29.3	10.4	51.8	5.8		21.3		30.9	25.6	21.3	
Level of Service		C	B	D	A		C		C	C	C	
Approach Delay (s)		28.8			15.7			30.4			24.0	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1479	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.56		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1479	1504	2013		1583
Volume (vph)	344	1103	0	0	537	295	262	15	487	179	0	210
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	374	1199	0	0	584	321	285	16	529	195	0	228
RTOR Reduction (vph)	0	0	0	0	0	184	0	80	80	0	0	187
Lane Group Flow (vph)	374	1199	0	0	584	137	243	228	199	195	0	41
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	20.9	41.5			16.6	16.6	19.0	19.0	19.0	16.0		16.0
Effective Green, g (s)	20.9	41.5			16.6	16.6	19.0	19.0	19.0	16.0		16.0
Actuated g/C Ratio	0.24	0.47			0.19	0.19	0.21	0.21	0.21	0.18		0.18
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	418	1660			664	297	361	318	323	364		286
v/s Ratio Prot	c0.21	0.34			c0.17		0.14	c0.15				
v/s Ratio Perm						0.09			0.13	c0.10		0.03
v/c Ratio	0.89	0.72			0.88	0.46	0.67	0.72	0.62	0.54		0.14
Uniform Delay, d1	32.7	18.9			35.0	32.0	31.9	32.3	31.4	32.9		30.5
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	20.9	1.6			12.7	1.1	9.6	13.0	8.5	5.6		1.1
Delay (s)	53.7	20.5			47.7	33.1	41.5	45.2	40.0	38.4		31.5
Level of Service	D	C			D	C	D	D	D	D		C
Approach Delay (s)		28.3			42.5			42.4			34.7	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	35.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	88.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	95	35	14	400	1055	133
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	38	15	435	1147	145

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	141	15	435	1147	145
Volume Left (vph)	103	0	0	1147	0
Volume Right (vph)	0	0	435	0	145
Hadj (s)	0.18	0.03	-0.67	0.53	-0.67
Departure Headway (s)	7.2	6.9	6.2	6.9	5.7
Degree Utilization, x	0.28	0.03	0.74	2.19	0.23
Capacity (veh/h)	487	512	573	534	619
Control Delay (s)	13.0	8.9	23.8	554.4	9.1
Approach Delay (s)	13.0	23.3		493.4	
Approach LOS	B	C		F	

Intersection Summary			
Delay	344.9		
HCM Level of Service	F		
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	45	74	0	493	1185	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	80	0	536	1288	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type	None					
Median storage veh)						
Upstream signal (ft)					1082	
pX, platoon unblocked	0.62	0.62	0.62			
vC, conflicting volume	1824	1288	1288			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2326	1464	1464			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	18	100			
cM capacity (veh/h)	25	98	287			

Direction, Lane #	SE 1	NE 1	SW 1
Volume Total	129	536	1288
Volume Left	49	0	0
Volume Right	80	0	0
cSH	62	1700	1700
Volume to Capacity	2.09	0.32	0.76
Queue Length 95th (ft)	309	0	0
Control Delay (s)	649.1	0.0	0.0
Lane LOS	F		
Approach Delay (s)	649.1	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	43.0		
Intersection Capacity Utilization	124.7%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	85	891	545	0	0	1107
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	92	968	592	0	0	1203
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						591
pX, platoon unblocked	0.65					
vC, conflicting volume	1796	592			592	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2220	592			592	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	0			100	
cM capacity (veh/h)	31	506			983	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	1061	592	1203
Volume Left	92	0	0
Volume Right	968	0	0
cSH	218	1700	1700
Volume to Capacity	4.87	0.35	0.71
Queue Length 95th (ft)	Err	0	0
Control Delay (s)	Err	0.0	0.0
Lane LOS	F		
Approach Delay (s)	Err	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	3713.5		
Intersection Capacity Utilization	124.7%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Volume (vph)	537	200	127	82	193	153	153	1148	75	112	887	442
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	584	217	138	89	210	166	166	1248	82	122	964	480
RTOR Reduction (vph)	0	0	99	0	0	111	0	0	56	0	0	320
Lane Group Flow (vph)	584	217	39	89	210	55	166	1248	26	122	964	160
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.8	21.4	21.4	4.0	10.6	10.6	8.6	23.6	23.6	10.0	25.0	25.0
Effective Green, g (s)	14.8	21.4	21.4	4.0	10.6	10.6	8.6	23.6	23.6	10.0	25.0	25.0
Actuated g/C Ratio	0.20	0.29	0.29	0.05	0.14	0.14	0.11	0.31	0.31	0.13	0.33	0.33
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	677	1010	452	183	500	224	394	1600	498	236	1180	528
v/s Ratio Prot	c0.17	0.06		0.03	c0.06		0.05	0.25		c0.07	c0.27	
v/s Ratio Perm			0.02			0.03			0.02			0.10
v/c Ratio	0.86	0.21	0.09	0.49	0.42	0.25	0.42	0.78	0.05	0.52	0.82	0.30
Uniform Delay, d1	29.1	20.4	19.6	34.5	29.4	28.6	30.9	23.3	17.9	30.3	22.9	18.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.0	0.1	0.1	2.0	0.6	0.6	0.7	3.8	0.2	1.9	6.3	1.5
Delay (s)	40.1	20.5	19.7	36.5	30.0	29.2	31.6	27.2	18.1	32.2	29.2	20.0
Level of Service	D	C	B	D	C	C	C	C	B	C	C	C
Approach Delay (s)		32.6			31.0			27.2			26.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

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                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Weber/Herndon
********************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: F[100.4]
********************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  1  1  0  1    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1    0     2     0    0     0     2 1838     3     1 1439     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    1    0     2     0    0     0     2 1838     3     1 1439     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    1    0     2     0    0     0     2 1838     3     1 1439     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     1    0     2     0    0     0     2 1998     3     1 1564     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    1    0     2     0    0     0     2 1998     3     1 1564     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8  6.5   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 2786 3568   999  2570 3572   782  1564 xxxx xxxxx  2001 xxxx xxxxx
Potent Cap.:   15    6   246    13    6   341   428 xxxx xxxxx   290 xxxx xxxxx
Move Cap.:     15    6   246    13    6   341   428 xxxx xxxxx   290 xxxx xxxxx
Volume/Cap:  0.07 0.00  0.01  0.00 0.00  0.00  0.01 xxxx  xxxx  0.00 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  13.5 xxxx xxxxx  17.4 xxxx xxxxx
LOS by Move:   *    *     *     *    *     *     B    *     *     C    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx   41 xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.2 xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx  100 xxxxx xxxxx xxxx xxxxx  13.5 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    F     *     *    *     *     B    *     *     *    *     *
ApproachDel:     100.4           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        F                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	310	1507	118	2	1311	188	88	11	3	224	10	322
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	337	1638	128	2	1425	204	96	12	3	243	11	350
RTOR Reduction (vph)	0	0	30	0	0	59	0	0	3	0	0	288
Lane Group Flow (vph)	337	1638	98	2	1425	145	96	12	0	243	11	62
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	22.0	72.4	72.4	0.8	51.2	51.2	16.0	14.8	14.8	16.0	14.8	14.8
Effective Green, g (s)	22.0	72.4	72.4	0.8	51.2	51.2	16.0	14.8	14.8	16.0	14.8	14.8
Actuated g/C Ratio	0.18	0.60	0.60	0.01	0.43	0.43	0.13	0.12	0.12	0.13	0.12	0.12
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	325	2135	955	12	1510	675	236	230	195	236	230	195
v/s Ratio Prot	c0.19	0.46		0.00	c0.40		0.05	0.01		c0.14	0.01	
v/s Ratio Perm			0.06			0.09			0.00			c0.04
v/c Ratio	1.04	0.77	0.10	0.17	0.94	0.21	0.41	0.05	0.00	1.03	0.05	0.32
Uniform Delay, d1	49.0	17.6	10.1	59.3	33.0	21.7	47.7	46.4	46.1	52.0	46.4	48.0
Progression Factor	1.00	1.00	1.00	1.15	1.33	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	59.8	1.7	0.0	4.2	8.6	0.1	5.1	0.4	0.0	66.5	0.1	1.0
Delay (s)	108.8	19.3	10.1	72.3	52.5	36.3	52.8	46.8	46.1	118.5	46.5	49.0
Level of Service	F	B	B	E	D	D	D	D	D	F	D	D
Approach Delay (s)		33.1			50.5			52.0			76.9	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM Average Control Delay	45.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1638		3433	1639	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.71	1.00		0.71	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	2583	1638		2569	1639	
Volume (vph)	123	1375	34	81	1238	27	27	13	52	18	12	48
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	1495	37	88	1346	29	29	14	57	20	13	52
RTOR Reduction (vph)	0	0	19	0	0	15	0	42	0	0	38	0
Lane Group Flow (vph)	134	1495	18	88	1346	14	29	29	0	20	27	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		
Actuated Green, G (s)	6.0	28.9	28.9	3.2	26.1	26.1	15.9	15.9		15.9	15.9	
Effective Green, g (s)	6.0	28.9	28.9	3.2	26.1	26.1	15.9	15.9		15.9	15.9	
Actuated g/C Ratio	0.10	0.48	0.48	0.05	0.44	0.44	0.26	0.26		0.26	0.26	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	177	1705	762	183	1539	689	684	434		681	434	
v/s Ratio Prot	c0.08	c0.42		0.03	0.38			c0.02			0.02	
v/s Ratio Perm			0.01			0.01	0.01			0.01		
v/c Ratio	0.76	0.88	0.02	0.48	0.87	0.02	0.04	0.07		0.03	0.06	
Uniform Delay, d1	26.3	14.0	8.2	27.6	15.5	9.7	16.4	16.5		16.3	16.5	
Progression Factor	1.51	0.89	1.27	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.1	3.2	0.0	2.0	5.9	0.0	0.1	0.3		0.1	0.3	
Delay (s)	49.8	15.6	10.4	29.6	21.3	9.7	16.5	16.8		16.4	16.7	
Level of Service	D	B	B	C	C	A	B	B		B	B	
Approach Delay (s)		18.2			21.6			16.7			16.7	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1651		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1651		3433	1863	1583
Volume (vph)	9	1286	143	377	1198	202	136	84	262	210	78	27
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	1398	155	410	1302	220	148	91	285	228	85	29
RTOR Reduction (vph)	0	0	86	0	0	55	0	131	0	0	0	24
Lane Group Flow (vph)	10	1398	69	410	1302	165	148	245	0	228	85	5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	40.2	40.2	11.0	50.4	50.4	7.7	15.8		7.0	15.1	15.1
Effective Green, g (s)	0.8	40.2	40.2	11.0	50.4	50.4	7.7	15.8		7.0	15.1	15.1
Actuated g/C Ratio	0.01	0.45	0.45	0.12	0.56	0.56	0.09	0.18		0.08	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	31	1581	707	420	1982	886	294	290		267	313	266
v/s Ratio Prot	0.00	c0.40		c0.12	0.37		0.04	c0.15		c0.07	0.05	
v/s Ratio Perm			0.04			0.10						0.00
v/c Ratio	0.32	0.88	0.10	0.98	0.66	0.19	0.50	0.84		0.85	0.27	0.02
Uniform Delay, d1	44.3	22.8	14.4	39.4	13.8	9.7	39.3	35.9		41.0	32.7	31.3
Progression Factor	1.00	1.00	1.00	1.04	0.48	0.15	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.0	6.3	0.1	25.3	0.4	0.1	1.4	24.9		22.4	2.1	0.1
Delay (s)	50.3	29.0	14.5	66.2	7.1	1.6	40.7	60.8		63.3	34.8	31.4
Level of Service	D	C	B	E	A	A	D	E		E	C	C
Approach Delay (s)		27.7			19.0			55.1			53.5	
Approach LOS		C			B			E			D	

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	458	1138	167	102	1258	523	173	547	65	571	494	330
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	498	1237	182	111	1367	568	188	595	71	621	537	359
RTOR Reduction (vph)	0	0	99	0	0	255	0	0	46	0	0	191
Lane Group Flow (vph)	498	1237	83	111	1367	313	188	595	25	621	537	168
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.0	35.0	35.0	4.8	25.8	25.8	8.7	17.2	17.2	17.0	25.5	25.5
Effective Green, g (s)	14.0	35.0	35.0	4.8	25.8	25.8	8.7	17.2	17.2	17.0	25.5	25.5
Actuated g/C Ratio	0.16	0.39	0.39	0.05	0.29	0.29	0.10	0.19	0.19	0.19	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	534	1978	616	183	1458	454	332	676	303	648	1003	449
v/s Ratio Prot	c0.15	0.24		0.03	c0.27		0.05	c0.17		c0.18	0.15	
v/s Ratio Perm			0.05			0.20			0.02			0.11
v/c Ratio	0.93	0.63	0.13	0.61	0.94	0.69	0.57	0.88	0.08	0.96	0.54	0.37
Uniform Delay, d1	37.5	22.2	17.7	41.7	31.3	28.5	38.8	35.4	29.9	36.1	27.2	25.8
Progression Factor	1.03	0.46	0.32	0.71	1.40	2.68	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.4	0.2	0.0	3.9	8.7	3.0	2.2	15.2	0.5	25.1	2.0	2.4
Delay (s)	50.0	10.5	5.7	33.4	52.5	79.5	41.1	50.6	30.4	61.3	29.3	28.2
Level of Service	D	B	A	C	D	E	D	D	C	E	C	C
Approach Delay (s)		20.3			59.0			46.9			42.1	
Approach LOS		C			E			D			D	

Intersection Summary			
HCM Average Control Delay	41.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Volume (vph)	1	1767	1	4	1892	66	2	0	4	66	1	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1921	1	4	2057	72	2	0	4	72	1	11
RTOR Reduction (vph)	0	0	0	0	0	19	0	3	0	0	0	9
Lane Group Flow (vph)	1	1921	1	4	2057	53	2	1	0	72	1	2
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	1.1	51.0	51.0	1.2	51.1	51.1	5.6	17.5		4.3	16.2	16.2
Effective Green, g (s)	1.1	51.0	51.0	1.2	51.1	51.1	5.6	17.5		4.3	16.2	16.2
Actuated g/C Ratio	0.01	0.57	0.57	0.01	0.57	0.57	0.06	0.19		0.05	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	42	2882	897	46	2887	899	214	585		164	335	285
v/s Ratio Prot	0.00	0.38		c0.00	c0.40		0.00	0.00		c0.02	0.00	
v/s Ratio Perm			0.00			0.03						c0.00
v/c Ratio	0.02	0.67	0.00	0.09	0.71	0.06	0.01	0.00		0.44	0.00	0.01
Uniform Delay, d1	43.9	13.6	8.5	43.9	14.1	8.7	39.6	29.2		41.7	30.3	30.3
Progression Factor	0.84	1.58	1.46	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.4	0.0	0.8	0.9	0.0	0.0	0.0		1.9	0.0	0.0
Delay (s)	37.0	21.9	12.3	44.7	15.0	8.7	39.6	29.2		43.6	30.3	30.3
Level of Service	D	C	B	D	B	A	D	C		D	C	C
Approach Delay (s)		21.9			14.8			32.7			41.7	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3436		1770	3520		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.68	1.00	1.00	0.66	1.00	1.00
Satd. Flow (perm)	1770	3436		1770	3520		1274	1863	1583	1228	1863	1583
Volume (vph)	58	1459	352	484	1650	63	327	95	410	28	84	61
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	1586	383	526	1793	68	355	103	446	30	91	66
RTOR Reduction (vph)	0	19	0	0	2	0	0	0	251	0	0	51
Lane Group Flow (vph)	63	1950	0	526	1859	0	355	103	195	30	91	15
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	4.8	48.8		24.0	68.0		25.2	25.2	25.2	25.2	25.2	25.2
Effective Green, g (s)	4.8	48.8		24.0	68.0		25.2	25.2	25.2	25.2	25.2	25.2
Actuated g/C Ratio	0.04	0.44		0.22	0.62		0.23	0.23	0.23	0.23	0.23	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	77	1524		386	2176		292	427	363	281	427	363
v/s Ratio Prot	0.04	c0.57		c0.30	0.53			0.06			0.05	
v/s Ratio Perm							c0.28		0.12	0.02		0.01
v/c Ratio	0.82	1.28		1.36	0.85		1.22	0.24	0.54	0.11	0.21	0.04
Uniform Delay, d1	52.2	30.6		43.0	17.0		42.4	34.6	37.3	33.5	34.4	33.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	46.6	131.0		179.2	3.5		124.2	1.3	5.6	0.8	1.1	0.2
Delay (s)	98.8	161.6		222.2	20.5		166.6	35.9	42.9	34.3	35.5	33.2
Level of Service	F	F		F	C		F	D	D	C	D	C
Approach Delay (s)		159.7			64.9			90.7			34.5	
Approach LOS		F			E			F			C	

Intersection Summary			
HCM Average Control Delay	103.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	113.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	221	1749	124	332	2002	390	191	246	254	278	231	342
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	240	1901	135	361	2176	424	208	267	276	302	251	372
RTOR Reduction (vph)	0	0	12	0	0	96	0	0	112	0	0	95
Lane Group Flow (vph)	240	1901	123	361	2176	328	208	267	164	302	251	277
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	64.0	64.0	13.0	69.0	69.0	7.0	17.0	17.0	10.0	20.0	20.0
Effective Green, g (s)	8.0	64.0	64.0	13.0	69.0	69.0	7.0	17.0	17.0	10.0	20.0	20.0
Actuated g/C Ratio	0.07	0.53	0.53	0.11	0.57	0.57	0.06	0.14	0.14	0.08	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	229	1887	844	372	2035	910	200	501	224	286	590	264
v/s Ratio Prot	0.07	0.54		c0.11	c0.61		0.06	0.08		c0.09	0.07	
v/s Ratio Perm			0.08			0.21			0.10			c0.17
v/c Ratio	1.05	1.01	0.15	0.97	1.07	0.36	1.04	0.53	0.73	1.06	0.43	1.05
Uniform Delay, d1	56.0	28.0	14.2	53.3	25.5	13.7	56.5	47.8	49.3	55.0	44.8	50.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	72.6	22.5	0.1	38.7	41.4	0.2	74.5	4.0	19.1	68.7	2.2	68.9
Delay (s)	128.6	50.5	14.2	92.0	66.9	13.9	131.0	51.8	68.5	123.7	47.1	118.9
Level of Service	F	D	B	F	E	B	F	D	E	F	D	F
Approach Delay (s)		56.6			62.4			79.9			101.0	
Approach LOS		E			E			E			F	

Intersection Summary			
HCM Average Control Delay	67.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	99	2040	175	305	2684	308	163	143	461	214	151	161
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	2217	190	332	2917	335	177	155	501	233	164	175
RTOR Reduction (vph)	0	0	63	0	0	62	0	0	106	0	0	56
Lane Group Flow (vph)	108	2217	127	332	2917	273	177	155	395	233	164	119
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	52.0	52.0	12.0	60.0	60.0	10.3	26.0	26.0	14.0	29.7	29.7
Effective Green, g (s)	4.0	52.0	52.0	12.0	60.0	60.0	10.3	26.0	26.0	14.0	29.7	29.7
Actuated g/C Ratio	0.03	0.43	0.43	0.10	0.50	0.50	0.09	0.22	0.22	0.12	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2204	686	343	2543	792	295	767	343	207	1259	392
v/s Ratio Prot	0.03	0.44		c0.10	c0.57		0.05	0.04		c0.13	0.03	
v/s Ratio Perm			0.08			0.17			c0.25			c0.07
v/c Ratio	0.95	1.01	0.19	0.97	1.15	0.34	0.60	0.20	1.15	1.13	0.13	0.30
Uniform Delay, d1	57.9	34.0	20.9	53.8	30.0	18.1	52.9	38.5	47.0	53.0	35.1	36.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	67.1	20.6	0.1	39.6	71.3	0.3	3.4	0.6	96.7	100.4	0.2	2.0
Delay (s)	125.0	54.6	21.1	93.4	101.3	18.4	56.3	39.1	143.7	153.4	35.3	38.7
Level of Service	F	D	C	F	F	B	E	D	F	F	D	D
Approach Delay (s)		55.1			92.8			105.7			84.5	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	81.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Volume (vph)	933	1669	66	276	2104	217	172	882	180	309	818	1044
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1014	1814	72	300	2287	236	187	959	196	336	889	1135
RTOR Reduction (vph)	0	0	27	0	0	57	0	0	158	0	0	0
Lane Group Flow (vph)	1014	1814	45	300	2287	179	187	959	38	336	889	1135
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	31.0	57.5	57.5	14.5	41.0	41.0	5.0	23.0	23.0	9.0	27.0	58.0
Effective Green, g (s)	31.0	57.5	57.5	14.5	41.0	41.0	5.0	23.0	23.0	9.0	27.0	58.0
Actuated g/C Ratio	0.26	0.48	0.48	0.12	0.34	0.34	0.04	0.19	0.19	0.08	0.22	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	887	2437	759	415	1737	541	143	975	303	257	796	818
v/s Ratio Prot	0.30	0.36		0.09	c0.45		0.05	0.19		c0.10	0.25	c0.36
v/s Ratio Perm			0.03			0.11			0.02			0.36
v/c Ratio	1.14	0.74	0.06	0.72	1.32	0.33	1.31	0.98	0.12	1.31	1.12	1.39
Uniform Delay, d1	44.5	25.3	16.8	50.8	39.5	29.3	57.5	48.3	40.2	55.5	46.5	31.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	77.8	1.3	0.0	6.1	146.7	0.4	179.7	25.1	0.8	163.5	69.0	181.9
Delay (s)	122.3	26.6	16.8	56.9	186.2	29.7	237.2	73.4	41.0	219.0	115.5	212.9
Level of Service	F	C	B	E	F	C	F	E	D	F	F	F
Approach Delay (s)		59.8			159.4			91.5			177.1	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	123.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	120.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	250	1733	358	179	1563	261	219	613	97	287	798	475
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1884	389	195	1699	284	238	666	105	312	867	516
RTOR Reduction (vph)	0	0	141	0	0	103	0	0	80	0	0	102
Lane Group Flow (vph)	272	1884	248	195	1699	181	238	666	25	312	867	415
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	31.0	31.0	5.0	29.0	29.0	6.0	19.0	19.0	9.0	22.0	22.0
Effective Green, g (s)	7.0	31.0	31.0	5.0	29.0	29.0	6.0	19.0	19.0	9.0	22.0	22.0
Actuated g/C Ratio	0.09	0.39	0.39	0.06	0.36	0.36	0.08	0.24	0.24	0.11	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	300	1970	613	215	1843	574	257	1208	376	386	1398	435
v/s Ratio Prot	c0.08	c0.37		0.06	0.33		0.07	0.13		c0.09	0.17	
v/s Ratio Perm			0.16			0.11			0.02			c0.26
v/c Ratio	0.91	0.96	0.40	0.91	0.92	0.32	0.93	0.55	0.07	0.81	0.62	0.95
Uniform Delay, d1	36.2	23.8	17.8	37.3	24.4	18.4	36.8	26.8	23.6	34.7	25.3	28.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.0	11.6	0.4	36.6	8.2	0.3	36.5	1.8	0.3	11.8	2.1	32.8
Delay (s)	65.1	35.4	18.2	73.9	32.6	18.7	73.3	28.6	24.0	46.4	27.4	61.3
Level of Service	E	D	B	E	C	B	E	C	C	D	C	E
Approach Delay (s)		36.0			34.5			38.6			41.2	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	37.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	559	571	0	0	443	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	608	621	0	0	482	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1228		608	608
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1228		608	608
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	86
cM capacity (veh/h)			567		459	496

Direction, Lane #	EB 1	EB 2	NB 1
Volume Total	608	621	549
Volume Left	0	0	482
Volume Right	0	621	67
cSH	1700	1700	483
Volume to Capacity	0.36	0.37	1.14
Queue Length 95th (ft)	0	0	475
Control Delay (s)	0.0	0.0	111.7
Lane LOS			F
Approach Delay (s)	0.0		111.7
Approach LOS			F

Intersection Summary			
Average Delay	34.5		
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	9	2	65	23	2	77
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	2	71	25	2	84
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			12		176	10
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			12		176	10
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		100	92
cM capacity (veh/h)			1607		778	1072

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SW 1
Volume Total	10	2	71	25	86
Volume Left	0	0	71	0	2
Volume Right	0	2	0	0	84
cSH	1700	1700	1607	1700	1099
Volume to Capacity	0.01	0.00	0.04	0.01	0.08
Queue Length 95th (ft)	0	0	3	0	6
Control Delay (s)	0.0	0.0	7.3	0.0	8.7
Lane LOS			A		A
Approach Delay (s)	0.0		5.4		8.7
Approach LOS					A

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	49	89	45	27	90	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	97	49	29	98	60

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	53	97	78	158
Volume Left (vph)	53	0	0	98
Volume Right (vph)	0	97	29	0
Hadj (s)	0.53	-0.67	-0.19	0.16
Departure Headway (s)	5.6	4.4	4.3	4.5
Degree Utilization, x	0.08	0.12	0.09	0.20
Capacity (veh/h)	617	780	803	775
Control Delay (s)	7.9	6.8	7.7	8.6
Approach Delay (s)	7.2		7.7	8.6
Approach LOS	A		A	A

Intersection Summary			
Delay	7.9		
HCM Level of Service	A		
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #23 Dante/Polk

Cycle (sec):	100	Critical Vol./Cap.(X):	0.581
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	13.9
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Polk					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0	1 0	1	1 0 1	0	1	1 0 0	1	0	1 0 1	0	1
Volume Module:												
Base Vol:	53	276	24	93	294	52	35	51	12	12	66	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	276	24	93	294	52	35	51	12	12	66	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	276	24	93	294	52	35	51	12	12	66	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	58	300	26	101	320	57	38	55	13	13	72	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	58	300	26	101	320	57	38	55	13	13	72	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	58	300	26	101	320	57	38	55	13	13	72	85
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.92	0.08	1.00	1.00	1.00	1.00	0.81	0.19	1.00	1.00	1.00
Final Sat.:	528	536	47	505	550	605	442	389	91	428	456	501
Capacity Analysis Module:												
Vol/Sat:	0.11	0.56	0.56	0.20	0.58	0.09	0.09	0.14	0.14	0.03	0.16	0.17
Crit Moves:		****			****				****			****
Delay/Veh:	10.0	15.6	15.6	11.2	17.2	9.0	10.9	10.6	10.6	10.7	11.2	10.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.0	15.6	15.6	11.2	17.2	9.0	10.9	10.6	10.6	10.7	11.2	10.5
LOS by Move:	B	C	C	B	C	A	B	B	B	B	B	B
ApproachDel:		14.8			14.9			10.7			10.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		14.8			14.9			10.7			10.8	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.1	1.1	1.1	0.2	1.2	0.1	0.1	0.1	0.1	0.0	0.2	0.2

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	44	3	3	14	5	72	7	293	0	68	391	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	3	3	15	5	78	8	318	0	74	425	45
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			4			4						
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	811	929	447	910	951	159	470			318		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	811	929	447	910	951	159	470			318		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	79	99	99	93	98	91	99			94		
cM capacity (veh/h)	230	249	559	215	241	858	1088			1238		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	48	7	15	84	8	159	159	0	74	470
Volume Left	48	0	15	0	8	0	0	0	74	0
Volume Right	0	3	0	78	0	0	0	0	0	45
cSH	230	497	215	917	1088	1700	1700	1700	1238	1700
Volume to Capacity	0.21	0.01	0.07	0.09	0.01	0.09	0.09	0.00	0.06	0.28
Queue Length 95th (ft)	19	1	6	8	1	0	0	0	5	0
Control Delay (s)	24.8	15.6	23.0	10.3	8.3	0.0	0.0	0.0	8.1	0.0
Lane LOS	C	C	C	B	A				A	
Approach Delay (s)	23.7		12.3		0.2				1.1	
Approach LOS	C		B							

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	13	39	373	25	105	747
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	42	405	27	114	812

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	57	405	27	114	812
Volume Left (vph)	0	405	0	114	0
Volume Right (vph)	42	0	0	0	812
Hadj (s)	-0.42	0.53	0.03	0.53	-0.67
Departure Headway (s)	6.7	7.2	6.7	6.7	5.5
Degree Utilization, x	0.11	0.81	0.05	0.21	1.25
Capacity (veh/h)	522	498	531	520	659
Control Delay (s)	10.5	32.3	8.8	10.3	141.6
Approach Delay (s)	10.5	30.8		125.4	
Approach LOS	B	D		F	

Intersection Summary			
Delay	91.9		
HCM Level of Service	F		
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	154	175	14	8	185	640	16	19	9	277	13	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	167	190	15	9	201	696	17	21	10	301	14	113

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	263	110	210	696	48	428
Volume Left (vph)	167	0	9	0	17	301
Volume Right (vph)	0	15	0	696	10	113
Hadj (s)	0.35	-0.06	0.05	-0.67	-0.02	0.02
Departure Headway (s)	7.8	7.4	7.1	6.4	8.2	6.7
Degree Utilization, x	0.57	0.23	0.42	1.24	0.11	0.80
Capacity (veh/h)	438	471	496	569	401	524
Control Delay (s)	19.5	11.4	13.9	141.2	12.1	31.7
Approach Delay (s)	17.1		111.7		12.1	31.7
Approach LOS	C		F		B	D

Intersection Summary			
Delay	69.4		
HCM Level of Service	F		
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #30 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.481
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	12.6
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Bullard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	62	7	10	34	15	30	112	498	62	62	296	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	62	7	10	34	15	30	112	498	62	62	296	49
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	7	10	34	15	30	112	498	62	62	296	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	67	8	11	37	16	33	122	541	67	67	322	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	8	11	37	16	33	122	541	67	67	322	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	67	8	11	37	16	33	122	541	67	67	322	53
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	398	836	455	395	418	455	518	1126	623	478	1030	567
Capacity Analysis Module:												
Vol/Sat:	0.17	0.01	0.02	0.09	0.04	0.07	0.23	0.48	0.11	0.14	0.31	0.09
Crit Moves:	****			****				****			****	
Delay/Veh:	12.5	10.6	10.0	11.8	10.8	10.3	11.4	14.4	8.9	11.0	12.3	9.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.5	10.6	10.0	11.8	10.8	10.3	11.4	14.4	8.9	11.0	12.3	9.3
LOS by Move:	B	B	A	B	B	B	B	B	A	B	B	A
ApproachDel:	12.0			11.0			13.4			11.7		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	12.0			11.0			13.4			11.7		
LOS by Appr:	B			B			B			B		
AllWayAvgQ:	0.2	0.0	0.0	0.1	0.0	0.1	0.3	0.8	0.1	0.1	0.4	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3500		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3500		1770	3539	1583	1770	3539	1583
Volume (vph)	193	736	80	165	903	72	178	839	163	83	826	124
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	210	800	87	179	982	78	193	912	177	90	898	135
RTOR Reduction (vph)	0	0	39	0	5	0	0	0	39	0	0	36
Lane Group Flow (vph)	210	800	48	179	1055	0	193	912	139	90	898	99
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	15.8	44.0	44.0	11.0	39.2		11.0	33.0	33.0	6.0	28.0	28.0
Effective Green, g (s)	15.8	44.0	44.0	11.0	39.2		11.0	33.0	33.0	6.0	28.0	28.0
Actuated g/C Ratio	0.14	0.40	0.40	0.10	0.36		0.10	0.30	0.30	0.05	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	254	745	633	177	1247		177	1062	475	97	901	403
v/s Ratio Prot	c0.12	c0.43		c0.10	0.30		c0.11	0.26		0.05	c0.25	
v/s Ratio Perm			0.03						0.09			0.06
v/c Ratio	0.83	1.07	0.08	1.01	0.85		1.09	0.86	0.29	0.93	1.00	0.25
Uniform Delay, d1	45.8	33.0	20.4	49.5	32.6		49.5	36.3	29.5	51.8	41.0	32.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.3	54.6	0.1	70.6	5.5		93.8	7.0	0.3	67.5	29.0	0.3
Delay (s)	65.1	87.6	20.5	120.1	38.1		143.3	43.4	29.9	119.3	69.9	32.9
Level of Service	E	F	C	F	D		F	D	C	F	E	C
Approach Delay (s)		78.0			49.9			56.5			69.4	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM Average Control Delay	62.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	37	25	6	4	60	82	12	178	2	68	197	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	40	27	7	4	65	89	13	193	2	74	214	60
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	703	584	214	602	641	193	274			196		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	703	584	214	602	641	193	274			196		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	84	93	99	99	82	89	99			95		
cM capacity (veh/h)	259	397	826	369	368	848	1289			1377		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	74	159	207	2	288	60
Volume Left	40	4	13	0	74	0
Volume Right	7	89	0	2	0	60
cSH	319	539	1289	1700	1377	1700
Volume to Capacity	0.23	0.29	0.01	0.00	0.05	0.04
Queue Length 95th (ft)	22	30	1	0	4	0
Control Delay (s)	19.6	14.4	0.6	0.0	2.3	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	19.6	14.4	0.6		1.9	
Approach LOS	C	B				

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Volume (vph)	808	275	502	1494	96	292
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	878	299	546	1624	104	317
RTOR Reduction (vph)	0	112	0	0	0	272
Lane Group Flow (vph)	878	187	546	1624	104	45
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	55.0	55.0	36.0	95.0	17.0	17.0
Effective Green, g (s)	55.0	55.0	36.0	95.0	17.0	17.0
Actuated g/C Ratio	0.46	0.46	0.30	0.79	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	854	726	531	2802	251	224
v/s Ratio Prot	c0.47		c0.31	0.46	c0.06	
v/s Ratio Perm		0.12				0.03
v/c Ratio	1.03	0.26	1.03	0.58	0.41	0.20
Uniform Delay, d1	32.5	20.0	42.0	4.8	47.0	45.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	38.2	0.2	46.5	0.3	5.0	2.0
Delay (s)	70.7	20.1	88.5	5.1	51.9	47.5
Level of Service	E	C	F	A	D	D
Approach Delay (s)	57.8			26.1	48.6	
Approach LOS	E			C	D	

Intersection Summary			
HCM Average Control Delay	38.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Volume (vph)	63	1084	1644	359	328	323
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	1178	1787	390	357	351
RTOR Reduction (vph)	0	0	0	168	0	97
Lane Group Flow (vph)	68	1178	1787	222	357	254
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	4.8	60.0	51.2	51.2	22.0	22.0
Effective Green, g (s)	4.8	60.0	51.2	51.2	22.0	22.0
Actuated g/C Ratio	0.05	0.67	0.57	0.57	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	94	1242	2013	901	433	387
v/s Ratio Prot	0.04	c0.63	0.50		c0.20	
v/s Ratio Perm				0.14		0.16
v/c Ratio	0.72	0.95	0.89	0.25	0.82	0.66
Uniform Delay, d1	41.9	13.6	16.9	9.7	32.2	30.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.9	14.7	5.2	0.1	16.2	8.4
Delay (s)	65.8	28.3	22.1	9.9	48.4	39.1
Level of Service	E	C	C	A	D	D
Approach Delay (s)		30.4	19.9		43.8	
Approach LOS		C	B		D	

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	45	1312	52	434	1743	277	207	270	40	46	583	892
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	1426	57	472	1895	301	225	293	43	50	634	970
RTOR Reduction (vph)	0	0	18	0	0	76	0	0	28	0	0	220
Lane Group Flow (vph)	49	1426	39	472	1895	225	225	293	15	50	634	750
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	3.2	35.8	35.8	21.0	53.6	53.6	11.0	40.9	40.9	6.3	36.2	36.2
Effective Green, g (s)	3.2	35.8	35.8	21.0	53.6	53.6	11.0	40.9	40.9	6.3	36.2	36.2
Actuated g/C Ratio	0.03	0.30	0.30	0.18	0.45	0.45	0.09	0.34	0.34	0.05	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	47	1056	472	310	1581	707	162	1206	540	93	1068	478
v/s Ratio Prot	0.03	c0.40		c0.27	0.54		c0.13	0.08		0.03	0.18	
v/s Ratio Perm			0.02			0.14			0.01			c0.47
v/c Ratio	1.04	1.35	0.08	1.52	1.20	0.32	1.39	0.24	0.03	0.54	0.59	1.57
Uniform Delay, d1	58.4	42.1	30.3	49.5	33.2	21.4	54.5	28.4	26.3	55.4	35.6	41.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	144.0	164.0	0.1	251.0	95.8	0.3	208.3	0.5	0.1	5.9	2.4	266.1
Delay (s)	202.4	206.1	30.4	300.5	129.0	21.7	262.8	28.9	26.4	61.3	38.1	308.0
Level of Service	F	F	C	F	F	C	F	C	C	E	D	F
Approach Delay (s)		199.4			147.2			122.5			197.1	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	170.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	113.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	290	1703	151	205	1816	245	276	769	151	427	438	170
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	1851	164	223	1974	266	300	836	164	464	476	185
RTOR Reduction (vph)	0	0	49	0	0	70	0	0	61	0	0	110
Lane Group Flow (vph)	315	1851	115	223	1974	196	300	836	103	464	476	75
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	44.0	44.0	8.0	42.0	42.0	13.7	27.0	27.0	15.0	28.3	28.3
Effective Green, g (s)	10.0	44.0	44.0	8.0	42.0	42.0	13.7	27.0	27.0	15.0	28.3	28.3
Actuated g/C Ratio	0.09	0.40	0.40	0.07	0.38	0.38	0.12	0.25	0.25	0.14	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	312	2034	633	250	1942	604	428	869	389	468	910	407
v/s Ratio Prot	c0.09	0.36		0.06	c0.39		0.09	c0.24		c0.14	0.13	
v/s Ratio Perm			0.07			0.12			0.06			0.05
v/c Ratio	1.01	0.91	0.18	0.89	1.02	0.32	0.70	0.96	0.26	0.99	0.52	0.18
Uniform Delay, d1	50.0	31.1	21.3	50.6	34.0	24.0	46.2	41.0	33.5	47.4	35.1	31.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	53.4	6.6	0.1	30.2	24.6	0.3	5.1	22.6	1.7	39.2	2.1	1.0
Delay (s)	103.4	37.7	21.5	80.8	58.6	24.3	51.3	63.6	35.1	86.6	37.2	32.8
Level of Service	F	D	C	F	E	C	D	E	D	F	D	C
Approach Delay (s)		45.5			56.9			57.2			56.9	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	53.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	573	1472	222	310	1512	171	432	670	189	219	441	425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	623	1600	241	337	1643	186	470	728	205	238	479	462
RTOR Reduction (vph)	0	0	105	0	0	89	0	0	111	0	0	218
Lane Group Flow (vph)	623	1600	136	337	1643	97	470	728	94	238	479	244
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.0	34.1	34.1	10.9	29.0	29.0	12.0	22.0	22.0	7.0	17.0	17.0
Effective Green, g (s)	16.0	34.1	34.1	10.9	29.0	29.0	12.0	22.0	22.0	7.0	17.0	17.0
Actuated g/C Ratio	0.18	0.38	0.38	0.12	0.32	0.32	0.13	0.24	0.24	0.08	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	610	1927	600	416	1639	510	458	865	387	267	668	299
v/s Ratio Prot	c0.18	0.31		0.10	c0.32		c0.14	c0.21		0.07	0.14	
v/s Ratio Perm			0.09			0.06			0.06			0.15
v/c Ratio	1.02	0.83	0.23	0.81	1.00	0.19	1.03	0.84	0.24	0.89	0.72	0.82
Uniform Delay, d1	37.0	25.3	19.0	38.5	30.5	22.0	39.0	32.3	27.3	41.1	34.2	35.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	41.9	3.2	0.2	11.3	22.8	0.2	48.9	9.7	1.5	28.7	6.5	21.2
Delay (s)	78.9	28.5	19.2	49.9	53.3	22.2	87.9	42.1	28.8	69.8	40.7	56.2
Level of Service	E	C	B	D	D	C	F	D	C	E	D	E
Approach Delay (s)		40.4			50.1			55.5			52.7	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	48.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	224	1414	125	264	1572	116	232	353	130	134	489	175
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	243	1537	136	287	1709	126	252	384	141	146	532	190
RTOR Reduction (vph)	0	0	90	0	0	63	0	0	103	0	0	139
Lane Group Flow (vph)	243	1537	46	287	1709	63	252	384	38	146	532	51
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	24.0	24.0	7.0	25.0	25.0	6.0	19.0	19.0	4.8	17.8	17.8
Effective Green, g (s)	6.0	24.0	24.0	7.0	25.0	25.0	6.0	19.0	19.0	4.8	17.8	17.8
Actuated g/C Ratio	0.08	0.34	0.34	0.10	0.35	0.35	0.08	0.27	0.27	0.07	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	291	1724	537	339	1796	559	291	950	425	233	890	398
v/s Ratio Prot	0.07	0.30		c0.08	c0.34		c0.07	0.11		0.04	c0.15	
v/s Ratio Perm			0.03			0.04			0.02			0.03
v/c Ratio	0.84	0.89	0.09	0.85	0.95	0.11	0.87	0.40	0.09	0.63	0.60	0.13
Uniform Delay, d1	31.9	22.2	15.9	31.4	22.3	15.4	32.0	21.3	19.4	32.1	23.3	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.3	6.3	0.1	17.4	11.8	0.1	22.6	1.3	0.4	5.2	3.0	0.7
Delay (s)	50.2	28.4	16.0	48.8	34.1	15.5	54.6	22.5	19.8	37.3	26.3	21.2
Level of Service	D	C	B	D	C	B	D	C	B	D	C	C
Approach Delay (s)		30.3			35.0			32.4			27.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.93	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3291	
Flt Permitted		1.00	1.00	0.95	1.00		0.62		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1155		1583	1770	3291	
Volume (vph)	0	1043	65	382	1202	0	51	0	495	153	103	90
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1134	71	415	1307	0	55	0	538	166	112	98
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	374	0	64	0
Lane Group Flow (vph)	0	1134	44	415	1307	0	55	0	164	166	146	0
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		27.0	27.0	20.6	51.6		18.1		18.1	18.1	18.1	
Effective Green, g (s)		27.0	27.0	20.6	51.6		18.1		18.1	18.1	18.1	
Actuated g/C Ratio		0.35	0.35	0.27	0.66		0.23		0.23	0.23	0.23	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1230	550	469	2350		269		369	412	767	
v/s Ratio Prot		c0.32		c0.23	0.37						0.04	
v/s Ratio Perm			0.03				0.05		c0.10	0.09		
v/c Ratio		0.92	0.08	0.88	0.56		0.20		0.45	0.40	0.19	
Uniform Delay, d1		24.3	17.0	27.4	7.0		24.0		25.5	25.2	23.9	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		11.4	0.1	17.8	0.3		0.4		0.9	2.9	0.6	
Delay (s)		35.7	17.1	45.2	7.2		24.4		26.4	28.1	24.5	
Level of Service		D	B	D	A		C		C	C	C	
Approach Delay (s)		34.6			16.4			26.2			26.1	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	77.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.89	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1492	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.43		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1492	1504	1558		1583
Volume (vph)	240	1116	0	0	930	698	582	21	841	201	0	374
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	1213	0	0	1011	759	633	23	914	218	0	407
RTOR Reduction (vph)	0	0	0	0	0	188	0	36	36	0	0	192
Lane Group Flow (vph)	261	1213	0	0	1011	571	506	525	467	218	0	215
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	15.0	54.0			35.0	35.0	38.0	38.0	38.0	16.0		16.0
Effective Green, g (s)	15.0	54.0			35.0	35.0	38.0	38.0	38.0	16.0		16.0
Actuated g/C Ratio	0.12	0.45			0.29	0.29	0.32	0.32	0.32	0.13		0.13
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	221	1593			1032	462	532	472	476	208		211
v/s Ratio Prot	c0.15	0.34			0.29		0.30	c0.35				
v/s Ratio Perm						c0.36			0.31	c0.14		0.14
v/c Ratio	1.18	0.76			0.98	1.24	0.95	1.11	0.98	1.05		1.02
Uniform Delay, d1	52.5	27.6			42.1	42.5	40.1	41.0	40.7	52.0		52.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	118.1	2.2			22.9	123.3	28.6	76.1	37.0	75.6		66.4
Delay (s)	170.6	29.8			65.0	165.8	68.7	117.1	77.7	127.6		118.4
Level of Service	F	C			E	F	E	F	E	F		F
Approach Delay (s)		54.7			108.2			88.9			121.6	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	89.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

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                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Weber/Herndon
********************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: C[ 16.7]
********************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  1! 0  0    0  1  1  0  1    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     1     0    0     0    10 1556     4     2 1548     1
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     1     0    0     0    10 1556     4     2 1548     1
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     1     0    0     0    10 1556     4     2 1548     1
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0     1     0    0     0    11 1691     4     2 1683     1
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     1     0    0     0    11 1691     4     2 1683     1
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   846  2555 3405   842  1684 xxxx xxxxx  1696 xxxx xxxxx
Potent Cap.: xxxx xxxx   310    14    7   312   385 xxxx xxxxx   381 xxxx xxxxx
Move Cap.:   xxxx xxxx   310    13    7   312   385 xxxx xxxxx   381 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.00  0.00 0.00  0.00  0.03 xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.0  xxxx xxxx xxxxx   0.1 xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx  16.7 xxxxx xxxx xxxxx  14.6 xxxx xxxxx  14.5 xxxx xxxxx
LOS by Move:   *    *     C     *    *     *     B    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.1 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  14.6 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     B    *     *     *    *     *
ApproachDel:      16.7           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        C                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	368	1250	79	10	1234	247	75	190	27	243	18	346
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	400	1359	86	11	1341	268	82	207	29	264	20	376
RTOR Reduction (vph)	0	0	24	0	0	83	0	0	15	0	0	330
Lane Group Flow (vph)	400	1359	62	11	1341	185	82	207	14	264	20	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	26.0	72.4	72.4	0.8	47.2	47.2	16.0	12.8	12.8	18.0	14.8	14.8
Effective Green, g (s)	26.0	72.4	72.4	0.8	47.2	47.2	16.0	12.8	12.8	18.0	14.8	14.8
Actuated g/C Ratio	0.22	0.60	0.60	0.01	0.39	0.39	0.13	0.11	0.11	0.15	0.12	0.12
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	384	2135	955	12	1392	623	236	199	169	266	230	195
v/s Ratio Prot	c0.23	0.38		0.01	c0.38		0.05	c0.11		c0.15	0.01	
v/s Ratio Perm			0.04			0.12			0.01			0.03
v/c Ratio	1.04	0.64	0.06	0.92	0.96	0.30	0.35	1.04	0.08	0.99	0.09	0.24
Uniform Delay, d1	47.0	15.3	9.8	59.6	35.6	25.0	47.3	53.6	48.3	50.9	46.6	47.5
Progression Factor	1.00	1.00	1.00	1.13	1.19	1.58	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	57.2	0.6	0.0	173.6	12.5	0.2	4.0	74.7	0.9	52.9	0.2	0.6
Delay (s)	104.2	16.0	9.9	241.0	55.0	39.7	51.3	128.3	49.2	103.8	46.8	48.1
Level of Service	F	B	A	F	D	D	D	F	D	F	D	D
Approach Delay (s)		34.8			53.7			101.3			70.4	
Approach LOS		C			D			F			E	

Intersection Summary			
HCM Average Control Delay	51.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1602		3433	1599	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.72	1.00		0.72	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	2611	1602		2597	1599	
Volume (vph)	50	1186	39	44	1225	54	33	4	51	51	3	46
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	1289	42	48	1332	59	36	4	55	55	3	50
RTOR Reduction (vph)	0	0	24	0	0	31	0	37	0	0	34	0
Lane Group Flow (vph)	54	1289	18	48	1332	28	36	22	0	55	19	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		
Actuated Green, G (s)	2.4	26.4	26.4	2.4	26.4	26.4	19.2	19.2		19.2	19.2	
Effective Green, g (s)	2.4	26.4	26.4	2.4	26.4	26.4	19.2	19.2		19.2	19.2	
Actuated g/C Ratio	0.04	0.44	0.44	0.04	0.44	0.44	0.32	0.32		0.32	0.32	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	71	1557	697	137	1557	697	836	513		831	512	
v/s Ratio Prot	c0.03	0.36		0.01	c0.38			0.01			0.01	
v/s Ratio Perm			0.01			0.02	0.01			c0.02		
v/c Ratio	0.76	0.83	0.03	0.35	0.86	0.04	0.04	0.04		0.07	0.04	
Uniform Delay, d1	28.5	14.8	9.5	28.0	15.1	9.6	14.1	14.1		14.2	14.0	
Progression Factor	1.34	0.75	0.92	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	28.6	2.7	0.0	1.6	4.8	0.0	0.1	0.2		0.2	0.1	
Delay (s)	66.8	13.9	8.8	29.6	19.9	9.6	14.2	14.2		14.3	14.2	
Level of Service	E	B	A	C	B	A	B	B		B	B	
Approach Delay (s)		15.8			19.8			14.2			14.3	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	23	7	67	27	12	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	8	73	29	13	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			33		200	25
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			33		200	25
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		98	96
cM capacity (veh/h)			1579		752	1051

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SW 1
Volume Total	25	8	73	29	57
Volume Left	0	0	73	0	13
Volume Right	0	8	0	0	43
cSH	1700	1700	1579	1700	1366
Volume to Capacity	0.01	0.00	0.05	0.02	0.04
Queue Length 95th (ft)	0	0	4	0	3
Control Delay (s)	0.0	0.0	7.4	0.0	8.9
Lane LOS			A		A
Approach Delay (s)	0.0		5.3		8.9
Approach LOS					A

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	20.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	37	48	11	41	50	19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	40	52	12	45	54	21

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	40	52	57	75
Volume Left (vph)	40	0	0	54
Volume Right (vph)	0	52	45	0
Hadj (s)	0.53	-0.67	-0.44	0.18
Departure Headway (s)	5.3	4.1	3.8	4.3
Degree Utilization, x	0.06	0.06	0.06	0.09
Capacity (veh/h)	655	840	930	806
Control Delay (s)	7.4	6.2	7.0	7.8
Approach Delay (s)	6.7		7.0	7.8
Approach LOS	A		A	A

Intersection Summary			
Delay	7.1		
HCM Level of Service	A		
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

2012 BASELINE TRAFFIC CONDITION

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	110	34	13	486	1030	161
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	120	37	14	528	1120	175

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	157	14	528	1120	175
Volume Left (vph)	120	0	0	1120	0
Volume Right (vph)	0	0	528	0	175
Hadj (s)	0.19	0.03	-0.67	0.53	-0.67
Departure Headway (s)	7.4	6.9	6.2	7.2	6.0
Degree Utilization, x	0.32	0.03	0.92	2.24	0.29
Capacity (veh/h)	474	507	562	509	584
Control Delay (s)	13.9	8.9	43.5	579.6	10.2
Approach Delay (s)	13.9	42.6		502.7	
Approach LOS	B	E		F	

Intersection Summary			
Delay	339.1		
HCM Level of Service	F		
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	26	41	0	597	1325	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	45	0	649	1440	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type	None					
Median storage veh)						
Upstream signal (ft)					1081	
pX, platoon unblocked	0.59	0.59	0.59			
vC, conflicting volume	2089	1440	1440			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2850	1748	1748			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	29	100			
cM capacity (veh/h)	11	63	211			

Direction, Lane #	SE 1	NE 1	SW 1
Volume Total	73	649	1440
Volume Left	28	0	0
Volume Right	45	0	0
cSH	26	1700	1700
Volume to Capacity	2.75	0.38	0.85
Queue Length 95th (ft)	222	0	0
Control Delay (s)	1102.6	0.0	0.0
Lane LOS	F		
Approach Delay (s)	1102.6	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	37.1		
Intersection Capacity Utilization	118.9%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	59	681	621	0	0	1270
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	64	740	675	0	0	1380
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						586
pX, platoon unblocked	0.62					
vC, conflicting volume	2055	675			675	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2710	675			675	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	0			100	
cM capacity (veh/h)	14	454			916	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	804	675	1380
Volume Left	64	0	0
Volume Right	740	0	0
cSH	132	1700	1700
Volume to Capacity	6.11	0.40	0.81
Queue Length 95th (ft)	Err	0	0
Control Delay (s)	Err	0.0	0.0
Lane LOS	F		
Approach Delay (s)	Err	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	2812.3		
Intersection Capacity Utilization	118.9%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Volume (vph)	372	120	255	65	207	67	192	1022	69	112	971	641
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	404	130	277	71	225	73	209	1111	75	122	1055	697
RTOR Reduction (vph)	0	0	153	0	0	63	0	0	46	0	0	254
Lane Group Flow (vph)	404	130	124	71	225	10	209	1111	29	122	1055	443
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.3	17.7	17.7	3.2	10.6	10.6	9.7	29.2	29.2	8.9	28.4	28.4
Effective Green, g (s)	10.3	17.7	17.7	3.2	10.6	10.6	9.7	29.2	29.2	8.9	28.4	28.4
Actuated g/C Ratio	0.14	0.24	0.24	0.04	0.14	0.14	0.13	0.39	0.39	0.12	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	471	835	374	146	500	224	444	1980	616	210	1340	599
v/s Ratio Prot	c0.12	0.04		0.02	c0.06		0.06	0.22		c0.07	c0.30	
v/s Ratio Perm			0.08			0.01			0.02			0.28
v/c Ratio	0.86	0.16	0.33	0.49	0.45	0.05	0.47	0.56	0.05	0.58	0.79	0.74
Uniform Delay, d1	31.6	22.7	23.7	35.1	29.5	27.8	30.3	17.9	14.2	31.3	20.6	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.3	0.1	0.5	2.5	0.6	0.1	0.8	1.2	0.1	4.0	4.7	8.0
Delay (s)	45.9	22.8	24.3	37.6	30.2	27.9	31.1	19.0	14.4	35.3	25.4	28.1
Level of Service	D	C	C	D	C	C	C	B	B	D	C	C
Approach Delay (s)		34.8			31.2			20.6			27.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

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                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Weber/Herndon
********************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: C[ 16.4]
********************************************************************************
Street Name:              Weber                             Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  1! 0  0    0  1  2  0  1    0  1  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     2     0    0     0     1 1438     0     4 1750     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     2     0    0     0     1 1438     0     4 1750     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     2     0    0     0     1 1438     0     4 1750     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0     2     0    0     0     1 1563     0     4 1902     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     2     0    0     0     1 1563     0     4 1902     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   521  2434 3476   634  1902 xxxx xxxxx  1563 xxxx xxxxx
Potent Cap.: xxxx xxxx   505    17    7   427   317 xxxx xxxxx   428 xxxx xxxxx
Move Cap.:   xxxx xxxx   505    17    7   427   317 xxxx xxxxx   428 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.00  0.00 0.00  0.00  0.00 xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.0  xxxx xxxx xxxxx   0.0 xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx  12.2 xxxxx xxxx xxxxx  16.4 xxxx xxxxx  13.5 xxxx xxxxx
LOS by Move:   *    *     B     *    *     *     C    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx   0.0 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  16.4 xxxx xxxxx  13.5 xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     C    *     *     B    *     *
ApproachDel:      12.2           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        B                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	288	984	316	62	1393	190	325	30	161	181	39	308
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	313	1070	343	67	1514	207	353	33	175	197	42	335
RTOR Reduction (vph)	0	0	213	0	0	112	0	0	135	0	0	221
Lane Group Flow (vph)	313	1070	130	67	1514	95	353	33	40	197	42	114
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.0	34.0	34.0	6.8	25.8	25.8	17.0	20.8	20.8	12.4	16.2	16.2
Effective Green, g (s)	15.0	34.0	34.0	6.8	25.8	25.8	17.0	20.8	20.8	12.4	16.2	16.2
Actuated g/C Ratio	0.17	0.38	0.38	0.08	0.29	0.29	0.19	0.23	0.23	0.14	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	295	1921	598	134	1458	454	334	431	366	244	335	285
v/s Ratio Prot	c0.18	0.21		0.04	c0.30		c0.20	0.02		0.11	0.02	
v/s Ratio Perm			0.08			0.06			0.03			c0.07
v/c Ratio	1.06	0.56	0.22	0.50	1.04	0.21	1.06	0.08	0.11	0.81	0.13	0.40
Uniform Delay, d1	37.5	22.1	19.0	40.0	32.1	24.4	36.5	27.1	27.3	37.6	31.0	32.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	69.4	0.4	0.2	2.9	34.2	0.2	65.0	0.3	0.6	17.5	0.2	0.9
Delay (s)	106.9	22.4	19.2	42.9	66.3	24.6	101.5	27.4	27.9	55.1	31.1	33.5
Level of Service	F	C	B	D	E	C	F	C	C	E	C	C
Approach Delay (s)		37.1			60.6			74.2			40.8	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM Average Control Delay	51.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1649		3433	1720	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1649		3433	1720	
Volume (vph)	70	1048	25	169	1237	12	56	37	119	22	144	151
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	1139	27	184	1345	13	61	40	129	24	157	164
RTOR Reduction (vph)	0	0	19	0	0	9	0	88	0	0	60	0
Lane Group Flow (vph)	76	1139	8	184	1345	4	61	81	0	24	261	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	3.2	18.2	18.2	5.0	20.0	20.0	2.4	19.2		1.6	18.4	
Effective Green, g (s)	3.2	18.2	18.2	5.0	20.0	20.0	2.4	19.2		1.6	18.4	
Actuated g/C Ratio	0.05	0.30	0.30	0.08	0.33	0.33	0.04	0.32		0.03	0.31	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	94	1542	480	286	1695	528	137	528		92	527	
v/s Ratio Prot	0.04	0.22		c0.05	c0.26		c0.02	0.05		0.01	c0.15	
v/s Ratio Perm			0.01			0.00						
v/c Ratio	0.81	0.74	0.02	0.64	0.79	0.01	0.45	0.15		0.26	0.49	
Uniform Delay, d1	28.1	18.8	14.6	26.6	18.1	13.4	28.1	14.6		28.6	17.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	38.1	1.9	0.0	4.9	2.6	0.0	2.3	0.6		1.5	3.3	
Delay (s)	66.2	20.7	14.7	31.5	20.8	13.4	30.4	15.2		30.1	20.3	
Level of Service	E	C	B	C	C	B	C	B		C	C	
Approach Delay (s)		23.3			22.0			19.3			21.0	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.91		1.00	0.91		1.00
Frt	1.00		1.00	1.00		0.86
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5085		1770	5085		1611
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5085		1770	5085		1611
Volume (vph)	1189	0	20	1378	0	26
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1292	0	22	1498	0	28
RTOR Reduction (vph)	0	0	0	0	0	26
Lane Group Flow (vph)	1292	0	22	1498	0	2
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	29.3		2.7	40.0		2.7
Effective Green, g (s)	29.3		2.7	40.0		2.7
Actuated g/C Ratio	0.73		0.07	1.00		0.07
Clearance Time (s)	4.0		4.0	3.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	3725		119	5085		109
v/s Ratio Prot	c0.25		0.01	c0.29		0.00
v/s Ratio Perm						
v/c Ratio	0.35		0.18	0.29		0.02
Uniform Delay, d1	1.9		17.6	0.0		17.4
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.1		0.8	0.0		0.1
Delay (s)	2.0		18.4	0.0		17.5
Level of Service	A		B	A		B
Approach Delay (s)	2.0			0.3	17.5	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	1.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	33.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1609		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1609		3433	1863	1583
Volume (vph)	7	1154	91	121	1231	100	139	32	320	177	68	28
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	1254	99	132	1338	109	151	35	348	192	74	30
RTOR Reduction (vph)	0	0	65	0	0	59	0	134	0	0	0	21
Lane Group Flow (vph)	8	1254	34	132	1338	50	151	250	0	192	74	9
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	20.5	20.5	3.2	22.9	22.9	3.2	15.0		5.3	17.1	17.1
Effective Green, g (s)	0.8	20.5	20.5	3.2	22.9	22.9	3.2	15.0		5.3	17.1	17.1
Actuated g/C Ratio	0.01	0.34	0.34	0.05	0.38	0.38	0.05	0.25		0.09	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	46	1737	541	183	1941	604	183	402		303	531	451
v/s Ratio Prot	0.00	0.25		c0.04	c0.26		0.04	c0.16		c0.06	0.04	
v/s Ratio Perm			0.02			0.03						0.01
v/c Ratio	0.17	0.72	0.06	0.72	0.69	0.08	0.83	0.62		0.63	0.14	0.02
Uniform Delay, d1	29.3	17.3	13.3	28.0	15.6	11.8	28.1	20.0		26.4	16.0	15.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.8	1.5	0.0	13.1	1.0	0.1	25.1	7.0		4.3	0.5	0.1
Delay (s)	31.1	18.8	13.3	41.1	16.6	11.9	53.2	27.0		30.7	16.5	15.5
Level of Service	C	B	B	D	B	B	D	C		C	B	B
Approach Delay (s)		18.4			18.3			34.4			25.6	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	278	1214	174	95	1006	271	155	284	154	503	414	284
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	302	1320	189	103	1093	295	168	309	167	547	450	309
RTOR Reduction (vph)	0	0	124	0	0	220	0	0	117	0	0	127
Lane Group Flow (vph)	302	1320	65	103	1093	75	168	309	50	547	450	182
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	21.6	21.6	3.2	17.8	17.8	6.9	16.3	16.3	12.9	22.3	22.3
Effective Green, g (s)	7.0	21.6	21.6	3.2	17.8	17.8	6.9	16.3	16.3	12.9	22.3	22.3
Actuated g/C Ratio	0.10	0.31	0.31	0.05	0.25	0.25	0.10	0.23	0.23	0.18	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1569	488	157	1293	403	338	824	369	633	1127	504
v/s Ratio Prot	c0.09	c0.26		0.03	0.21		0.05	0.09		c0.16	c0.13	
v/s Ratio Perm			0.04			0.05			0.03			0.11
v/c Ratio	0.88	0.84	0.13	0.66	0.85	0.19	0.50	0.38	0.14	0.86	0.40	0.36
Uniform Delay, d1	31.1	22.6	17.4	32.9	24.8	20.4	29.9	22.6	21.3	27.7	18.6	18.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.1	4.3	0.1	9.5	5.3	0.2	1.2	1.3	0.8	11.8	1.1	2.0
Delay (s)	53.2	26.9	17.6	42.3	30.1	20.7	31.1	23.9	22.0	39.5	19.7	20.4
Level of Service	D	C	B	D	C	C	C	C	C	D	B	C
Approach Delay (s)		30.3			29.0			25.3			28.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor		0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt		1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)		5085	1583	3433	5085	1583		3539		3433		1583
Flt Permitted		1.00	1.00	0.95	1.00	1.00		1.00		0.76		1.00
Satd. Flow (perm)		5085	1583	3433	5085	1583		3539		2736		1583
Volume (vph)	0	1864	1	2	1371	58	0	1	0	58	0	1
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2026	1	2	1490	63	0	1	0	63	0	1
RTOR Reduction (vph)	0	0	0	0	0	19	0	0	0	0	0	1
Lane Group Flow (vph)	0	2026	1	2	1490	44	0	1	0	63	0	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		6
Actuated Green, G (s)		36.9	36.9	1.1	42.0	42.0		10.0		10.0		10.0
Effective Green, g (s)		36.9	36.9	1.1	42.0	42.0		10.0		10.0		10.0
Actuated g/C Ratio		0.62	0.62	0.02	0.70	0.70		0.17		0.17		0.17
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)		3127	974	63	3560	1108		590		456		264
v/s Ratio Prot		c0.40		0.00	c0.29			0.00				
v/s Ratio Perm			0.00			0.03				c0.02		0.00
v/c Ratio		0.65	0.00	0.03	0.42	0.04		0.00		0.14		0.00
Uniform Delay, d1		7.4	4.4	28.9	3.8	2.8		20.8		21.3		20.8
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2		0.5	0.0	0.2	0.1	0.0		0.0		0.1		0.0
Delay (s)		7.9	4.4	29.1	3.9	2.8		20.8		21.5		20.8
Level of Service		A	A	C	A	A		C		C		C
Approach Delay (s)		7.9			3.9			20.8			21.5	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	78	1679	222	377	1159	26	159	102	432	69	99	47
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	1825	241	410	1260	28	173	111	470	75	108	51
RTOR Reduction (vph)	0	0	90	0	0	10	0	0	292	0	0	43
Lane Group Flow (vph)	85	1825	151	410	1260	18	173	111	178	75	108	8
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.7	35.8	35.8	23.0	51.1	51.1	10.0	20.4	20.4	4.8	15.2	15.2
Effective Green, g (s)	7.7	35.8	35.8	23.0	51.1	51.1	10.0	20.4	20.4	4.8	15.2	15.2
Actuated g/C Ratio	0.08	0.36	0.36	0.23	0.51	0.51	0.10	0.20	0.20	0.05	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	136	1820	567	407	2598	809	177	380	323	85	283	241
v/s Ratio Prot	0.05	c0.36		c0.23	0.25		c0.10	0.06		0.04	0.06	
v/s Ratio Perm			0.10			0.01			c0.11			0.00
v/c Ratio	0.62	1.00	0.27	1.01	0.48	0.02	0.98	0.29	0.55	0.88	0.38	0.03
Uniform Delay, d1	44.8	32.1	22.8	38.5	15.9	12.1	44.9	33.7	35.7	47.3	38.2	36.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.6	21.8	0.3	46.5	0.1	0.0	60.4	1.9	6.6	60.1	3.9	0.2
Delay (s)	53.4	53.9	23.0	85.0	16.0	12.1	105.3	35.6	42.3	107.4	42.0	36.4
Level of Service	D	D	C	F	B	B	F	D	D	F	D	D
Approach Delay (s)		50.4			32.6			55.8			61.8	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM Average Control Delay	45.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	124	2257	65	238	1359	259	149	143	275	232	166	155
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	135	2453	71	259	1477	282	162	155	299	252	180	168
RTOR Reduction (vph)	0	0	10	0	0	144	0	0	112	0	0	123
Lane Group Flow (vph)	135	2453	61	259	1477	138	162	155	187	252	180	45
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.9	44.0	44.0	7.0	44.1	44.1	6.0	16.0	16.0	7.0	17.0	17.0
Effective Green, g (s)	6.9	44.0	44.0	7.0	44.1	44.1	6.0	16.0	16.0	7.0	17.0	17.0
Actuated g/C Ratio	0.08	0.49	0.49	0.08	0.49	0.49	0.07	0.18	0.18	0.08	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	263	2486	774	267	2492	776	229	629	281	267	668	299
v/s Ratio Prot	0.04	c0.48		c0.08	0.29		0.05	0.04		c0.07	0.05	
v/s Ratio Perm			0.04			0.09			c0.12			0.03
v/c Ratio	0.51	0.99	0.08	0.97	0.59	0.18	0.71	0.25	0.67	0.94	0.27	0.15
Uniform Delay, d1	39.9	22.7	12.2	41.4	16.5	12.8	41.1	31.8	34.5	41.3	31.2	30.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	14.9	0.0	46.6	0.4	0.1	9.6	0.9	11.8	39.8	1.0	1.1
Delay (s)	41.6	37.6	12.3	88.0	16.9	12.9	50.7	32.7	46.4	81.1	32.2	31.5
Level of Service	D	D	B	F	B	B	D	C	D	F	C	C
Approach Delay (s)		37.1			25.5			44.1			52.5	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	65	2711	186	352	1951	137	94	81	326	261	107	50
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	2947	202	383	2121	149	102	88	354	284	116	54
RTOR Reduction (vph)	0	0	50	0	0	37	0	0	104	0	0	42
Lane Group Flow (vph)	71	2947	152	383	2121	112	102	88	250	284	116	12
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	58.8	58.8	12.0	66.8	66.8	6.9	18.0	18.0	16.0	27.1	27.1
Effective Green, g (s)	4.0	58.8	58.8	12.0	66.8	66.8	6.9	18.0	18.0	16.0	27.1	27.1
Actuated g/C Ratio	0.03	0.49	0.49	0.10	0.55	0.55	0.06	0.15	0.15	0.13	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2475	771	341	2812	875	196	527	236	234	1141	355
v/s Ratio Prot	0.02	c0.58		c0.11	0.42		0.03	0.02		c0.16	0.02	
v/s Ratio Perm			0.10			0.07			c0.16			0.01
v/c Ratio	0.62	1.19	0.20	1.12	0.75	0.13	0.52	0.17	1.06	1.21	0.10	0.03
Uniform Delay, d1	57.7	31.0	17.6	54.4	20.7	13.0	55.3	44.9	51.4	52.4	37.2	36.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.1	90.1	0.1	86.3	1.2	0.1	2.5	0.7	75.3	128.8	0.2	0.2
Delay (s)	67.8	121.1	17.7	140.7	21.9	13.1	57.8	45.5	126.7	181.2	37.4	36.8
Level of Service	E	F	B	F	C	B	E	D	F	F	D	D
Approach Delay (s)		113.5			38.6			100.7			127.3	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	84.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Volume (vph)	987	2174	113	257	1327	392	160	834	229	181	763	808
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1073	2363	123	279	1442	426	174	907	249	197	829	878
RTOR Reduction (vph)	0	0	40	0	0	86	0	0	123	0	0	1
Lane Group Flow (vph)	1073	2363	83	279	1442	340	174	907	126	197	829	877
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	33.0	54.0	54.0	9.0	30.0	30.0	6.0	23.0	23.0	8.0	25.0	58.0
Effective Green, g (s)	33.0	54.0	54.0	9.0	30.0	30.0	6.0	23.0	23.0	8.0	25.0	58.0
Actuated g/C Ratio	0.30	0.49	0.49	0.08	0.27	0.27	0.05	0.21	0.21	0.07	0.23	0.53
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1030	2496	777	281	1387	432	187	1063	331	250	804	892
v/s Ratio Prot	c0.31	0.46		0.08	c0.28		0.05	0.18		c0.06	0.23	c0.29
v/s Ratio Perm			0.05			0.21			0.08			0.26
v/c Ratio	1.04	0.95	0.11	0.99	1.04	0.79	0.93	0.85	0.38	0.79	1.03	0.98
Uniform Delay, d1	38.5	26.6	15.0	50.5	40.0	37.0	51.8	41.9	37.4	50.2	42.5	25.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.5	8.5	0.1	51.5	35.1	9.2	46.2	8.7	3.3	15.1	40.0	25.8
Delay (s)	78.0	35.2	15.1	102.0	75.1	46.2	98.0	50.6	40.7	65.2	82.5	51.3
Level of Service	E	D	B	F	E	D	F	D	D	E	F	D
Approach Delay (s)		47.4			72.9			54.9			66.3	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM Average Control Delay	58.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	229	2036	145	114	1643	249	116	267	126	229	400	233
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	249	2213	158	124	1786	271	126	290	137	249	435	253
RTOR Reduction (vph)	0	0	65	0	0	94	0	0	86	0	0	87
Lane Group Flow (vph)	249	2213	93	124	1786	177	126	290	51	249	435	166
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	36.0	36.0	4.0	32.0	32.0	4.0	17.8	17.8	7.0	20.8	20.8
Effective Green, g (s)	8.0	36.0	36.0	4.0	32.0	32.0	4.0	17.8	17.8	7.0	20.8	20.8
Actuated g/C Ratio	0.10	0.45	0.45	0.05	0.40	0.40	0.05	0.22	0.22	0.09	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	340	2266	705	170	2014	627	170	1120	349	297	1309	408
v/s Ratio Prot	c0.07	c0.44		0.04	0.35		0.04	0.06		c0.07	0.09	
v/s Ratio Perm			0.06			0.11			0.03			c0.10
v/c Ratio	0.73	0.98	0.13	0.73	0.89	0.28	0.74	0.26	0.15	0.84	0.33	0.41
Uniform Delay, d1	35.4	22.0	13.2	37.9	22.7	16.6	37.9	26.0	25.4	36.3	24.4	24.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.9	13.7	0.1	14.5	5.1	0.2	15.9	0.6	0.9	18.3	0.7	3.0
Delay (s)	43.3	35.7	13.3	52.4	27.9	16.8	53.8	26.6	26.3	54.6	25.0	27.9
Level of Service	D	D	B	D	C	B	D	C	C	D	C	C
Approach Delay (s)		35.1			27.9			32.7			33.7	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	80.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	844	378	0	0	550	184
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	917	411	0	0	598	200
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1328		917	917
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1328		917	917
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	39
cM capacity (veh/h)			520		302	329

Direction, Lane #	EB 1	EB 2	NB 1
Volume Total	917	411	798
Volume Left	0	0	598
Volume Right	0	411	200
cSH	1700	1700	313
Volume to Capacity	0.54	0.24	2.55
Queue Length 95th (ft)	0	0	1630
Control Delay (s)	0.0	0.0	732.2
Lane LOS			F
Approach Delay (s)	0.0		732.2
Approach LOS			F

Intersection Summary			
Average Delay	274.7		
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	53	1	345	12	2	415
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	1	375	13	2	451
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			59		814	29
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			59		814	29
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			76		99	57
cM capacity (veh/h)			1543		239	1039

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SW 1
Volume Total	29	29	1	375	7	7	453
Volume Left	0	0	0	375	0	0	2
Volume Right	0	0	1	0	0	0	451
cSH	1700	1700	1700	1543	1700	1700	1044
Volume to Capacity	0.02	0.02	0.00	0.24	0.00	0.00	0.43
Queue Length 95th (ft)	0	0	0	24	0	0	56
Control Delay (s)	0.0	0.0	0.0	8.1	0.0	0.0	11.1
Lane LOS				A			B
Approach Delay (s)	0.0			7.8			11.1
Approach LOS							B

Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	36	299	195	46	183	148
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	325	212	50	199	161

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1
Volume Total (vph)	39	325	212	50	360
Volume Left (vph)	39	0	0	0	199
Volume Right (vph)	0	325	0	50	0
Hadj (s)	0.53	-0.67	0.03	-0.67	0.14
Departure Headway (s)	6.8	5.6	6.1	5.4	5.9
Degree Utilization, x	0.07	0.50	0.36	0.08	0.59
Capacity (veh/h)	503	611	556	620	588
Control Delay (s)	9.1	12.9	11.4	7.7	17.1
Approach Delay (s)	12.5		10.7		17.1
Approach LOS	B		B		C

Intersection Summary			
Delay	13.7		
HCM Level of Service	B		
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	6	10	3	20	10	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	11	3	22	11	11

Direction, Lane #	SE 1	SE 2	NE 1	NE 2	SW 1	SW 2
Volume Total (vph)	7	11	3	22	11	11
Volume Left (vph)	0	0	3	0	11	0
Volume Right (vph)	0	11	0	22	0	0
Hadj (s)	0.03	-0.67	0.53	-0.67	0.53	0.03
Departure Headway (s)	4.6	3.9	5.1	3.9	5.1	4.6
Degree Utilization, x	0.01	0.01	0.00	0.02	0.02	0.01
Capacity (veh/h)	772	913	688	896	699	767
Control Delay (s)	6.4	5.7	6.9	5.8	7.0	6.5
Approach Delay (s)	6.0		6.0		6.7	
Approach LOS	A		A		A	

Intersection Summary			
Delay	6.2		
HCM Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	31	26	3	10	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	34	28	3	11	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	32				45	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	32				45	14
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1579				960	1062

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1	SB 2
Volume Total	0	17	17	14	14	3	11	0
Volume Left	0	0	0	0	0	0	11	0
Volume Right	0	0	0	0	0	3	0	0
cSH	1700	1700	1700	1700	1700	1700	960	1700
Volume to Capacity	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	1	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	8.8	0.0
Lane LOS							A	A
Approach Delay (s)	0.0			0.0			8.8	
Approach LOS							A	

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Bryan-Sierra

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: A[8.8]

Street Name:	Bryan									Sierra							
Approach:	North Bound					South Bound				East Bound					West Bound		
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	2	0	1	1	0	2	0	0	1	0	2	0	1	1	0	0	0	1
Volume Module:																				
Base Vol:	0		17		2	0		41		0	4		0		0	0		0		0
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	0		17		2	0		41		0	4		0		0	0		0		0
Added Vol:	0		0		0	0		0		0	0		0		0	0		0		0
PasserByVol:	0		0		0	0		0		0	0		0		0	0		0		0
Initial Fut:	0		17		2	0		41		0	4		0		0	0		0		0
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92	0.92		0.92		0.92	0.92		0.92	
PHF Volume:	0		18		2	0		45		0	4		0		0	0		0		0
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
FinalVolume:	0		18		2	0		45		0	4		0		0	0		0		0
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		6.8	6.5		6.9		7.5	xxxx		6.9	
FollowUpTim:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		3.5	4.0		3.3		3.5	xxxx		3.3	
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		54	65		22		41	xxxx		9	
Potent Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		954	829		1056		964	xxxx		1076	
Move Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		954	829		1056		964	xxxx		1076	
Volume/Cap:	xxxx	xxxx		xxxx		xxxx	xxxx		xxxx		0.00	0.00		0.00		0.00	xxxx		0.00	
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		0.0	xxxx		xxxxx		xxxx	xxxx		xxxxx	
Control Del:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		8.8	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
LOS by Move:	*	*		*		*	*		*		A	*		*		*	*		*	
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx	
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shared LOS:	*	*		*		*	*		*		*	*		*		*	*		*	
ApproachDel:	xxxxxx					xxxxxx					8.8					xxxxxx				
ApproachLOS:	*					*					A					*				

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #23 Dante/Polk

Cycle (sec):	100	Critical Vol./Cap.(X):	0.535
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	13.1
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Polk					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0	1 0		1 0 1	0 1		1 0 0	1 0		1 0 1	0 1	
Volume Module:												
Base Vol:	55	244	25	62	195	29	56	109	74	42	68	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	55	244	25	62	195	29	56	109	74	42	68	74
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	55	244	25	62	195	29	56	109	74	42	68	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	60	265	27	67	212	32	61	118	80	46	74	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	265	27	67	212	32	61	118	80	46	74	80
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	60	265	27	67	212	32	61	118	80	46	74	80
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.91	0.09	1.00	1.00	1.00	1.00	0.60	0.40	1.00	1.00	1.00
Final Sat.:	498	496	51	462	498	545	468	313	212	431	459	504
Capacity Analysis Module:												
Vol/Sat:	0.12	0.53	0.53	0.15	0.43	0.06	0.13	0.38	0.38	0.11	0.16	0.16
Crit Moves:		****			****				****		****	
Delay/Veh:	10.5	15.6	15.6	11.3	14.3	9.3	11.0	12.7	12.7	11.3	11.3	10.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.5	15.6	15.6	11.3	14.3	9.3	11.0	12.7	12.7	11.3	11.3	10.4
LOS by Move:	B	C	C	B	B	A	B	B	B	B	B	B
ApproachDel:		14.7			13.2			12.3			10.9	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		14.7			13.2			12.3			10.9	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.1	1.0	1.0	0.2	0.6	0.1	0.1	0.5	0.5	0.1	0.2	0.2

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	62	4	7	11	5	198	8	458	0	65	245	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	67	4	8	12	5	215	9	498	0	71	266	25
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	904	935	279	933	948	249	291			498		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	904	935	279	933	948	249	291			498		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	56	98	99	94	98	71	99			93		
cM capacity (veh/h)	153	245	718	204	241	751	1267			1062		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	67	4	8	12	5	215	9	249	249	0	71	291
Volume Left	67	0	0	12	0	0	9	0	0	0	71	0
Volume Right	0	0	8	0	0	215	0	0	0	0	0	25
cSH	153	245	718	204	241	751	1267	1700	1700	1700	1062	1700
Volume to Capacity	0.44	0.02	0.01	0.06	0.02	0.29	0.01	0.15	0.15	0.00	0.07	0.17
Queue Length 95th (ft)	50	1	1	5	2	30	1	0	0	0	5	0
Control Delay (s)	45.6	20.0	10.1	23.8	20.3	11.7	7.9	0.0	0.0	0.0	8.6	0.0
Lane LOS	E	C	B	C	C	B	A				A	
Approach Delay (s)	40.8			12.5			0.1				1.7	
Approach LOS	E			B								

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	63	163	523	140	113	222
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	68	177	568	152	123	241

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	246	568	152	123	241
Volume Left (vph)	0	568	0	123	0
Volume Right (vph)	177	0	0	0	241
Hadj (s)	-0.40	0.53	0.03	0.53	-0.67
Departure Headway (s)	6.0	6.6	6.1	7.5	6.3
Degree Utilization, x	0.41	1.04	0.26	0.26	0.42
Capacity (veh/h)	584	539	578	468	556
Control Delay (s)	13.0	74.0	10.0	11.9	12.7
Approach Delay (s)	13.0	60.5		12.4	
Approach LOS	B	F		B	

Intersection Summary			
Delay	38.6		
HCM Level of Service	E		
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	57	186	6	4	130	244	1	2	3	543	8	175
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	62	202	7	4	141	265	1	2	3	590	9	190

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	163	108	146	265	7	789
Volume Left (vph)	62	0	4	0	1	590
Volume Right (vph)	0	7	0	265	3	190
Hadj (s)	0.22	-0.01	0.05	-0.67	-0.23	0.04
Departure Headway (s)	7.4	7.1	7.0	6.3	7.0	5.8
Degree Utilization, x	0.33	0.21	0.28	0.46	0.01	1.27
Capacity (veh/h)	480	494	503	564	478	618
Control Delay (s)	12.8	10.9	11.6	13.4	10.0	151.7
Approach Delay (s)	12.0		12.8		10.0	151.7
Approach LOS	B		B		B	F

Intersection Summary			
Delay	86.9		
HCM Level of Service	F		
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #30 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.533
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	13.9
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Bullard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	194	13	21	108	15	55	20	205	42	29	321	33
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	194	13	21	108	15	55	20	205	42	29	321	33
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	194	13	21	108	15	55	20	205	42	29	321	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	229	15	25	128	18	65	24	242	50	34	379	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	229	15	25	128	18	65	24	242	50	34	379	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	229	15	25	128	18	65	24	242	50	34	379	39
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	430	893	490	412	431	473	425	913	497	446	965	524
Capacity Analysis Module:												
Vol/Sat:	0.53	0.02	0.05	0.31	0.04	0.14	0.06	0.27	0.10	0.08	0.39	0.07
Crit Moves:	****			****				****			****	
Delay/Veh:	18.9	10.4	9.9	14.3	10.7	10.8	11.1	12.6	10.2	11.0	14.2	9.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.9	10.4	9.9	14.3	10.7	10.8	11.1	12.6	10.2	11.0	14.2	9.7
LOS by Move:	C	B	A	B	B	B	B	B	B	B	B	A
ApproachDel:	17.5			12.9			12.1			13.5		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	17.5			12.9			12.1			13.5		
LOS by Appr:	C			B			B			B		
AllWayAvgQ:	1.0	0.0	0.0	0.4	0.0	0.1	0.1	0.3	0.1	0.1	0.6	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Volume (vph)	181	922	85	109	571	99	51	451	86	90	482	72
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	197	1002	92	118	621	108	55	490	93	98	524	78
RTOR Reduction (vph)	0	0	41	0	15	0	0	0	46	0	0	42
Lane Group Flow (vph)	197	1002	51	118	714	0	55	490	47	98	524	36
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	14.3	47.0	47.0	6.0	38.7		4.0	16.2	16.2	5.0	17.2	17.2
Effective Green, g (s)	14.3	47.0	47.0	6.0	38.7		4.0	16.2	16.2	5.0	17.2	17.2
Actuated g/C Ratio	0.16	0.52	0.52	0.07	0.43		0.04	0.18	0.18	0.06	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	281	971	825	118	1485		78	636	284	98	675	302
v/s Ratio Prot	0.11	c0.54		c0.07	0.21		0.03	0.14		c0.06	c0.15	
v/s Ratio Perm			0.03						0.03			0.02
v/c Ratio	0.70	1.03	0.06	1.00	0.48		0.71	0.77	0.17	1.00	0.78	0.12
Uniform Delay, d1	35.9	21.6	10.7	42.1	18.5		42.5	35.2	31.3	42.6	34.7	30.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.7	37.4	0.0	82.9	0.2		25.1	5.7	0.3	90.9	5.6	0.2
Delay (s)	43.6	59.0	10.7	125.0	18.8		67.6	41.0	31.6	133.5	40.3	30.4
Level of Service	D	E	B	F	B		E	D	C	F	D	C
Approach Delay (s)		53.2			33.6			41.9			52.2	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	46.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	60	32	15	5	17	60	8	318	6	39	177	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	35	16	5	18	65	9	346	7	42	192	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	715	647	192	674	667	346	220			352		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	715	647	192	674	667	346	220			352		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	78	91	98	98	95	91	99			96		
cM capacity (veh/h)	292	374	849	325	364	697	1350			1207		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	116	89	354	7	235	27
Volume Left	65	5	9	0	42	0
Volume Right	16	65	0	7	0	27
cSH	347	553	1350	1700	1207	1700
Volume to Capacity	0.34	0.16	0.01	0.00	0.04	0.02
Queue Length 95th (ft)	36	14	0	0	3	0
Control Delay (s)	20.5	12.7	0.2	0.0	1.7	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	20.5	12.7	0.2		1.5	
Approach LOS	C	B				

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Volume (vph)	938	488	596	878	66	277
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1020	530	648	954	72	301
RTOR Reduction (vph)	0	172	0	0	0	258
Lane Group Flow (vph)	1020	358	648	954	72	43
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	55.0	55.0	36.0	95.0	17.0	17.0
Effective Green, g (s)	55.0	55.0	36.0	95.0	17.0	17.0
Actuated g/C Ratio	0.46	0.46	0.30	0.79	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	854	726	531	2802	251	224
v/s Ratio Prot	c0.55		c0.37	0.27	c0.04	
v/s Ratio Perm		0.23				0.03
v/c Ratio	1.19	0.49	1.22	0.34	0.29	0.19
Uniform Delay, d1	32.5	22.8	42.0	3.6	46.1	45.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	98.9	0.5	115.3	0.1	2.9	1.9
Delay (s)	131.4	23.3	157.3	3.6	48.9	47.3
Level of Service	F	C	F	A	D	D
Approach Delay (s)	94.4			65.8	47.6	
Approach LOS	F			E	D	

Intersection Summary			
HCM Average Control Delay	76.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Volume (vph)	132	1067	1205	268	163	260
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	1160	1310	291	177	283
RTOR Reduction (vph)	0	0	0	151	0	178
Lane Group Flow (vph)	143	1160	1310	140	177	105
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	8.7	48.7	36.0	36.0	18.3	18.3
Effective Green, g (s)	8.7	48.7	36.0	36.0	18.3	18.3
Actuated g/C Ratio	0.12	0.65	0.48	0.48	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	205	1210	1699	760	432	386
v/s Ratio Prot	0.08	c0.62	0.37		c0.10	
v/s Ratio Perm				0.09		0.07
v/c Ratio	0.70	0.96	0.77	0.18	0.41	0.27
Uniform Delay, d1	31.9	12.2	16.1	11.1	23.8	22.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.9	16.7	2.2	0.1	2.9	1.7
Delay (s)	41.8	28.9	18.3	11.2	26.7	24.7
Level of Service	D	C	B	B	C	C
Approach Delay (s)		30.3	17.0		25.4	
Approach LOS		C	B		C	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	39	1031	39	383	1161	162	203	394	33	18	306	532
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	1121	42	416	1262	176	221	428	36	20	333	578
RTOR Reduction (vph)	0	0	20	0	0	76	0	0	26	0	0	313
Lane Group Flow (vph)	42	1121	22	416	1262	100	221	428	10	20	333	265
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	3.6	32.6	32.6	23.0	52.0	52.0	12.0	26.4	26.4	2.0	16.4	16.4
Effective Green, g (s)	3.6	32.6	32.6	23.0	52.0	52.0	12.0	26.4	26.4	2.0	16.4	16.4
Actuated g/C Ratio	0.04	0.33	0.33	0.23	0.52	0.52	0.12	0.26	0.26	0.02	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	64	1154	516	407	1840	823	212	934	418	35	580	260
v/s Ratio Prot	0.02	c0.32		c0.24	0.36		c0.12	0.12		0.01	0.09	
v/s Ratio Perm			0.01			0.06			0.01			c0.17
v/c Ratio	0.66	0.97	0.04	1.02	0.69	0.12	1.04	0.46	0.02	0.57	0.57	1.02
Uniform Delay, d1	47.6	33.2	23.0	38.5	17.9	12.3	44.0	30.8	27.2	48.6	38.6	41.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.7	19.8	0.0	50.4	1.1	0.1	73.4	1.6	0.1	20.6	4.1	61.2
Delay (s)	69.3	53.1	23.1	88.9	19.0	12.4	117.4	32.4	27.3	69.1	42.7	103.0
Level of Service	E	D	C	F	B	B	F	C	C	E	D	F
Approach Delay (s)		52.6			34.0			59.6			80.7	
Approach LOS		D			C			E			F	

Intersection Summary			
HCM Average Control Delay	51.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	108	1247	76	126	1170	96	179	239	67	246	716	152
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	1355	83	137	1272	104	195	260	73	267	778	165
RTOR Reduction (vph)	0	0	58	0	0	72	0	0	53	0	0	117
Lane Group Flow (vph)	117	1355	25	137	1272	32	195	260	20	267	778	48
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	18.2	18.2	3.2	18.2	18.2	5.3	16.8	16.8	5.8	17.3	17.3
Effective Green, g (s)	3.2	18.2	18.2	3.2	18.2	18.2	5.3	16.8	16.8	5.8	17.3	17.3
Actuated g/C Ratio	0.05	0.30	0.30	0.05	0.30	0.30	0.09	0.28	0.28	0.10	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1542	480	183	1542	480	303	991	443	332	1020	456
v/s Ratio Prot	0.03	c0.27		c0.04	0.25		0.06	0.07		c0.08	c0.22	
v/s Ratio Perm			0.02			0.02			0.01			0.03
v/c Ratio	0.64	0.88	0.05	0.75	0.82	0.07	0.64	0.26	0.05	0.80	0.76	0.10
Uniform Delay, d1	27.8	19.9	14.8	28.0	19.4	14.9	26.4	16.8	15.8	26.5	19.5	15.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.1	6.0	0.0	15.4	3.7	0.1	4.6	0.6	0.2	13.2	5.4	0.5
Delay (s)	35.0	25.9	14.8	43.4	23.2	14.9	31.1	17.4	16.0	39.7	24.9	16.1
Level of Service	C	C	B	D	C	B	C	B	B	D	C	B
Approach Delay (s)		26.0			24.4			22.3			27.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	248	1495	105	150	979	62	189	431	401	285	533	418
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	270	1625	114	163	1064	67	205	468	436	310	579	454
RTOR Reduction (vph)	0	0	63	0	0	47	0	0	106	0	0	111
Lane Group Flow (vph)	270	1625	51	163	1064	20	205	468	330	310	579	343
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	24.0	24.0	4.0	21.0	21.0	6.0	19.0	19.0	7.0	20.0	20.0
Effective Green, g (s)	7.0	24.0	24.0	4.0	21.0	21.0	6.0	19.0	19.0	7.0	20.0	20.0
Actuated g/C Ratio	0.10	0.34	0.34	0.06	0.30	0.30	0.09	0.27	0.27	0.10	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1743	543	196	1526	475	294	961	430	343	1011	452
v/s Ratio Prot	c0.08	c0.32		0.05	0.21		0.06	0.13		c0.09	0.16	
v/s Ratio Perm			0.03			0.01			0.21			c0.22
v/c Ratio	0.79	0.93	0.09	0.83	0.70	0.04	0.70	0.49	0.77	0.90	0.57	0.76
Uniform Delay, d1	30.8	22.2	15.6	32.7	21.7	17.4	31.1	21.4	23.5	31.2	21.4	22.8
Progression Factor	1.00	1.00	1.00	0.74	0.81	1.31	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.3	9.6	0.1	20.3	1.1	0.0	7.0	1.8	12.4	25.9	2.4	11.4
Delay (s)	42.1	31.8	15.7	44.6	18.6	22.7	38.1	23.2	35.9	57.1	23.7	34.2
Level of Service	D	C	B	D	B	C	D	C	D	E	C	C
Approach Delay (s)		32.3			22.1			30.9			35.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	125	1639	154	163	1107	70	208	563	270	158	439	167
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	1782	167	177	1203	76	226	612	293	172	477	182
RTOR Reduction (vph)	0	0	94	0	0	47	0	0	102	0	0	104
Lane Group Flow (vph)	136	1782	73	177	1203	29	226	612	191	172	477	78
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.8	27.2	27.2	4.0	26.4	26.4	5.6	17.5	17.5	5.3	17.2	17.2
Effective Green, g (s)	4.8	27.2	27.2	4.0	26.4	26.4	5.6	17.5	17.5	5.3	17.2	17.2
Actuated g/C Ratio	0.07	0.39	0.39	0.06	0.38	0.38	0.08	0.25	0.25	0.08	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	235	1976	615	196	1918	597	275	885	396	260	870	389
v/s Ratio Prot	0.04	c0.35		c0.05	0.24		c0.07	c0.17		0.05	0.13	
v/s Ratio Perm			0.05			0.02			0.12			0.05
v/c Ratio	0.58	0.90	0.12	0.90	0.63	0.05	0.82	0.69	0.48	0.66	0.55	0.20
Uniform Delay, d1	31.6	20.1	13.7	32.8	17.8	13.8	31.7	23.8	22.4	31.5	23.0	20.9
Progression Factor	0.86	0.84	1.15	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	2.7	0.0	38.3	0.6	0.0	17.6	4.4	4.2	6.2	2.5	1.2
Delay (s)	28.7	19.6	15.9	71.1	18.4	13.9	49.3	28.2	26.5	37.7	25.5	22.1
Level of Service	C	B	B	E	B	B	D	C	C	D	C	C
Approach Delay (s)		19.9			24.6			32.0			27.3	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.89	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3140	
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1268		1583	1770	3140	
Volume (vph)	0	1555	36	142	520	0	21	0	418	150	26	78
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1690	39	154	565	0	23	0	454	163	28	85
RTOR Reduction (vph)	0	0	7	0	0	0	0	0	137	0	56	0
Lane Group Flow (vph)	0	1690	32	154	565	0	23	0	317	163	57	0
Turn Type			Perm	Prot			custom		custom	Prot		
Protected Phases		4		3	8					1	6	
Permitted Phases			4				2		2			
Actuated Green, G (s)		51.0	51.0	10.0	65.0		23.0		23.0	10.0	37.0	
Effective Green, g (s)		51.0	51.0	10.0	65.0		23.0		23.0	10.0	37.0	
Actuated g/C Ratio		0.46	0.46	0.09	0.59		0.21		0.21	0.09	0.34	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1641	734	161	2091		265		331	161	1056	
v/s Ratio Prot		c0.48		c0.09	0.16					c0.09	0.02	
v/s Ratio Perm			0.02				0.02		c0.20			
v/c Ratio		1.03	0.04	0.96	0.27		0.09		0.96	1.01	0.05	
Uniform Delay, d1		29.5	16.1	49.8	11.0		35.0		43.0	50.0	24.7	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		30.2	0.0	57.5	0.1		0.1		38.0	74.2	0.1	
Delay (s)		59.7	16.2	107.3	11.0		35.2		81.0	124.2	24.8	
Level of Service		E	B	F	B		D		F	F	C	
Approach Delay (s)		58.8			31.6			78.8			83.5	
Approach LOS		E			C			E			F	

Intersection Summary			
HCM Average Control Delay	57.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1474	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.55		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1474	1504	1997		1583
Volume (vph)	357	1151	0	0	554	305	274	8	503	187	0	213
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	388	1251	0	0	602	332	298	9	547	203	0	232
RTOR Reduction (vph)	0	0	0	0	0	184	0	74	74	0	0	190
Lane Group Flow (vph)	388	1251	0	0	602	148	252	242	212	203	0	42
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	21.2	42.0			16.8	16.8	19.0	19.0	19.0	16.0		16.0
Effective Green, g (s)	21.2	42.0			16.8	16.8	19.0	19.0	19.0	16.0		16.0
Actuated g/C Ratio	0.24	0.47			0.19	0.19	0.21	0.21	0.21	0.18		0.18
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	422	1670			668	299	359	315	321	359		285
v/s Ratio Prot	c0.22	0.35			c0.17		0.15	c0.16				
v/s Ratio Perm						0.09			0.14	c0.10		0.03
v/c Ratio	0.92	0.75			0.90	0.49	0.70	0.77	0.66	0.57		0.15
Uniform Delay, d1	33.1	19.2			35.3	32.3	32.4	32.9	32.0	33.3		30.7
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	24.8	1.9			15.3	1.3	10.9	16.4	10.2	6.3		1.1
Delay (s)	57.8	21.1			50.6	33.6	43.3	49.3	42.3	39.6		31.8
Level of Service	E	C			D	C	D	D	D	D		C
Approach Delay (s)		29.8			44.6			45.2			35.5	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	37.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	100	37	15	411	1094	139
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	40	16	447	1189	151

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	149	16	447	1189	151
Volume Left (vph)	109	0	0	1189	0
Volume Right (vph)	0	0	447	0	151
Hadj (s)	0.18	0.03	-0.67	0.53	-0.67
Departure Headway (s)	7.2	6.9	6.2	6.9	5.7
Degree Utilization, x	0.30	0.03	0.77	2.29	0.24
Capacity (veh/h)	486	510	571	530	612
Control Delay (s)	13.3	8.9	25.6	600.2	9.3
Approach Delay (s)	13.3	25.0		533.6	
Approach LOS	B	C		F	

Intersection Summary			
Delay	373.3		
HCM Level of Service	F		
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	42	77	0	509	1229	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	84	0	553	1336	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type	None					
Median storage veh)						
Upstream signal (ft)					1081	
pX, platoon unblocked	0.61	0.61	0.61			
vC, conflicting volume	1889	1336	1336			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2460	1552	1552			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	2	100			
cM capacity (veh/h)	20	85	260			

Direction, Lane #	SE 1	NE 1	SW 1
Volume Total	129	553	1336
Volume Left	46	0	0
Volume Right	84	0	0
cSH	51	1700	1700
Volume to Capacity	2.53	0.33	0.79
Queue Length 95th (ft)	335	0	0
Control Delay (s)	863.8	0.0	0.0
Lane LOS	F		
Approach Delay (s)	863.8	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	55.4		
Intersection Capacity Utilization	127.7%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	82	901	564	0	0	1155
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	89	979	613	0	0	1255
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						586
pX, platoon unblocked	0.64					
vC, conflicting volume	1868	613			613	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2361	613			613	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	0			100	
cM capacity (veh/h)	25	492			966	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	1068	613	1255
Volume Left	89	0	0
Volume Right	979	0	0
cSH	192	1700	1700
Volume to Capacity	5.58	0.36	0.74
Queue Length 95th (ft)	Err	0	0
Control Delay (s)	Err	0.0	0.0
Lane LOS	F		
Approach Delay (s)	Err	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	3637.7		
Intersection Capacity Utilization	127.7%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Volume (vph)	558	208	130	88	201	133	157	1170	77	93	926	462
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	607	226	141	96	218	145	171	1272	84	101	1007	502
RTOR Reduction (vph)	0	0	101	0	0	119	0	0	54	0	0	324
Lane Group Flow (vph)	607	226	40	96	218	26	171	1272	30	101	1007	178
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.9	22.7	22.7	4.0	10.8	10.8	8.9	29.0	29.0	8.3	28.4	28.4
Effective Green, g (s)	15.9	22.7	22.7	4.0	10.8	10.8	8.9	29.0	29.0	8.3	28.4	28.4
Actuated g/C Ratio	0.20	0.28	0.28	0.05	0.14	0.14	0.11	0.36	0.36	0.10	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	682	1004	449	172	478	214	382	1843	574	184	1256	562
v/s Ratio Prot	c0.18	0.06		0.03	c0.06		0.05	0.25		c0.06	c0.28	
v/s Ratio Perm			0.03			0.02			0.02			0.11
v/c Ratio	0.89	0.23	0.09	0.56	0.46	0.12	0.45	0.69	0.05	0.55	0.80	0.32
Uniform Delay, d1	31.2	21.9	21.1	37.1	31.9	30.4	33.3	21.7	16.6	34.1	23.3	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.8	0.1	0.1	3.9	0.7	0.3	0.8	2.1	0.2	3.3	5.5	1.5
Delay (s)	45.0	22.0	21.1	41.0	32.6	30.7	34.1	23.8	16.8	37.4	28.7	20.2
Level of Service	D	C	C	D	C	C	C	C	B	D	C	C
Approach Delay (s)		36.2			33.8			24.6			26.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

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                        Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Weber/Herndon
********************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: C[ 17.9]
********************************************************************************
Street Name:              Weber                             Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  1! 0  0    0  1  2  0  1    0  1  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     2     0    0     0     2 1868     3     2 1470     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     2     0    0     0     2 1868     3     2 1470     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     2     0    0     0     2 1868     3     2 1470     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0     2     0    0     0     2 2030     3     2 1598     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     2     0    0     0     2 2030     3     2 1598     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   677  2283 3640   533  1598 xxxx xxxxx  2034 xxxx xxxxx
Potent Cap.: xxxx xxxx   400    22    5   497   415 xxxx xxxxx   282 xxxx xxxxx
Move Cap.:   xxxx xxxx   400    22    5   497   415 xxxx xxxxx   282 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.01  0.00 0.00  0.00  0.01 xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.0  xxxx xxxx xxxxx   0.0 xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx  14.0 xxxxx xxxx xxxxx  13.7 xxxx xxxxx  17.9 xxxx xxxxx
LOS by Move:   *    *     B     *    *     *     B    *     *     C    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx   0.0 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  13.7 xxxx xxxxx  17.9 xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     B    *     *     C    *     *
ApproachDel:      14.0           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        B                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	296	1494	219	2	1292	137	190	69	3	170	84	297
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	322	1624	238	2	1404	149	207	75	3	185	91	323
RTOR Reduction (vph)	0	0	106	0	0	84	0	0	2	0	0	277
Lane Group Flow (vph)	322	1624	132	2	1404	65	207	75	1	185	91	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	17.0	44.4	44.4	0.8	28.2	28.2	16.0	16.5	16.5	12.3	12.8	12.8
Effective Green, g (s)	17.0	44.4	44.4	0.8	28.2	28.2	16.0	16.5	16.5	12.3	12.8	12.8
Actuated g/C Ratio	0.19	0.49	0.49	0.01	0.31	0.31	0.18	0.18	0.18	0.14	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	334	2509	781	16	1593	496	315	342	290	242	265	225
v/s Ratio Prot	c0.18	0.32		0.00	c0.28		0.12	c0.04		c0.10	c0.05	
v/s Ratio Perm			0.08			0.04			0.00			0.03
v/c Ratio	0.96	0.65	0.17	0.12	0.88	0.13	0.66	0.22	0.00	0.76	0.34	0.20
Uniform Delay, d1	36.2	17.0	12.6	44.3	29.3	22.1	34.4	31.3	30.0	37.5	34.8	34.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.4	0.6	0.1	3.5	6.1	0.1	10.3	1.5	0.0	13.4	0.8	0.5
Delay (s)	75.6	17.6	12.7	47.8	35.4	22.3	44.7	32.7	30.0	50.8	35.6	34.6
Level of Service	E	B	B	D	D	C	D	C	C	D	D	C
Approach Delay (s)		25.6			34.2			41.4			39.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	3433	1662	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	3433	1662	
Volume (vph)	129	1341	35	84	1206	28	29	21	55	18	19	50
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	140	1458	38	91	1311	30	32	23	60	20	21	54
RTOR Reduction (vph)	0	0	25	0	0	21	0	0	41	0	37	0
Lane Group Flow (vph)	140	1458	13	91	1311	9	32	23	19	20	38	0
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)	6.0	20.6	20.6	3.2	17.8	17.8	1.6	19.4	19.4	0.8	18.6	
Effective Green, g (s)	6.0	20.6	20.6	3.2	17.8	17.8	1.6	19.4	19.4	0.8	18.6	
Actuated g/C Ratio	0.10	0.34	0.34	0.05	0.30	0.30	0.03	0.32	0.32	0.01	0.31	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	177	1746	543	183	1509	470	92	602	512	46	515	
v/s Ratio Prot	c0.08	c0.29		0.03	0.26		c0.01	0.01		0.01	c0.02	
v/s Ratio Perm			0.01			0.01			0.01			
v/c Ratio	0.79	0.84	0.02	0.50	0.87	0.02	0.35	0.04	0.04	0.43	0.07	
Uniform Delay, d1	26.4	18.1	13.0	27.6	20.0	14.9	28.7	13.9	13.9	29.4	14.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	21.0	3.6	0.0	2.1	5.6	0.0	2.3	0.1	0.1	6.5	0.3	
Delay (s)	47.3	21.8	13.1	29.7	25.6	14.9	31.0	14.0	14.0	35.8	14.9	
Level of Service	D	C	B	C	C	B	C	B	B	D	B	
Approach Delay (s)		23.7			25.6			18.7			19.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.91		1.00	0.91		1.00
Frt	1.00		1.00	1.00		0.86
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5085		1770	5085		1611
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5085		1770	5085		1611
Volume (vph)	1414	0	25	1290	0	25
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1537	0	27	1402	0	27
RTOR Reduction (vph)	0	0	0	0	0	23
Lane Group Flow (vph)	1537	0	27	1402	0	4
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	29.3		2.7	40.0		2.7
Effective Green, g (s)	29.3		2.7	40.0		2.7
Actuated g/C Ratio	0.73		0.07	1.00		0.07
Clearance Time (s)	4.0		4.0	3.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	3725		119	5085		109
v/s Ratio Prot	c0.30		0.02	c0.28		0.00
v/s Ratio Perm						
v/c Ratio	0.41		0.23	0.28		0.03
Uniform Delay, d1	2.1		17.7	0.0		17.4
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.1		1.0	0.0		0.1
Delay (s)	2.1		18.6	0.0		17.6
Level of Service	A		B	A		B
Approach Delay (s)	2.1			0.4	17.6	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	1.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1649		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1649		3433	1863	1583
Volume (vph)	9	1295	112	403	1201	209	86	87	282	220	81	28
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	1408	122	438	1305	227	93	95	307	239	88	30
RTOR Reduction (vph)	0	0	80	0	0	104	0	168	0	0	0	23
Lane Group Flow (vph)	10	1408	42	438	1305	123	93	234	0	239	88	7
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	24.2	24.2	10.0	33.4	33.4	4.0	13.8		6.0	15.8	15.8
Effective Green, g (s)	0.8	24.2	24.2	10.0	33.4	33.4	4.0	13.8		6.0	15.8	15.8
Actuated g/C Ratio	0.01	0.35	0.35	0.14	0.48	0.48	0.06	0.20		0.09	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	39	1758	547	490	2426	755	196	325		294	421	357
v/s Ratio Prot	0.00	c0.28		c0.13	0.26		0.03	c0.14		c0.07	0.05	
v/s Ratio Perm			0.03			0.08						0.00
v/c Ratio	0.26	0.80	0.08	0.89	0.54	0.16	0.47	0.72		0.81	0.21	0.02
Uniform Delay, d1	34.3	20.7	15.4	29.5	12.9	10.4	32.0	26.3		31.4	22.0	21.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.5	2.7	0.1	18.4	0.2	0.1	1.8	13.0		15.6	1.1	0.1
Delay (s)	37.8	23.4	15.5	47.9	13.1	10.5	33.8	39.2		47.1	23.1	21.2
Level of Service	D	C	B	D	B	B	C	D		D	C	C
Approach Delay (s)		22.9			20.5			38.2			39.0	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	24.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	483	1148	162	107	1282	542	178	601	68	573	529	357
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	525	1248	176	116	1393	589	193	653	74	623	575	388
RTOR Reduction (vph)	0	0	95	0	0	253	0	0	44	0	0	186
Lane Group Flow (vph)	525	1248	81	116	1393	336	193	653	30	623	575	202
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.0	35.0	35.0	4.8	25.8	25.8	7.0	17.2	17.2	17.0	27.2	27.2
Effective Green, g (s)	14.0	35.0	35.0	4.8	25.8	25.8	7.0	17.2	17.2	17.0	27.2	27.2
Actuated g/C Ratio	0.16	0.39	0.39	0.05	0.29	0.29	0.08	0.19	0.19	0.19	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	534	1978	616	183	1458	454	267	676	303	648	1070	478
v/s Ratio Prot	c0.15	0.25		0.03	c0.27		0.06	c0.18		c0.18	0.16	
v/s Ratio Perm			0.05			0.21			0.02			0.13
v/c Ratio	0.98	0.63	0.13	0.63	0.96	0.74	0.72	0.97	0.10	0.96	0.54	0.42
Uniform Delay, d1	37.9	22.3	17.7	41.7	31.5	29.1	40.6	36.1	30.0	36.2	26.2	25.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.4	0.7	0.1	7.0	14.2	6.4	9.3	27.2	0.7	26.0	1.9	2.7
Delay (s)	72.3	22.9	17.8	48.7	45.8	35.5	49.8	63.3	30.7	62.1	28.1	27.8
Level of Service	E	C	B	D	D	D	D	E	C	E	C	C
Approach Delay (s)		35.8			43.0			57.9			41.4	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	42.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.76	1.00		0.75	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	2736	3008		2726	1863	1583
Volume (vph)	2	1783	1	5	1937	70	2	0	5	70	1	12
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	1938	1	5	2105	76	2	0	5	76	1	13
RTOR Reduction (vph)	0	0	0	0	0	27	0	4	0	0	0	11
Lane Group Flow (vph)	2	1938	1	5	2105	49	2	1	0	76	1	2
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		6
Actuated Green, G (s)	1.1	38.1	38.1	1.2	38.2	38.2	8.7	8.7		8.7	8.7	8.7
Effective Green, g (s)	1.1	38.1	38.1	1.2	38.2	38.2	8.7	8.7		8.7	8.7	8.7
Actuated g/C Ratio	0.02	0.64	0.64	0.02	0.64	0.64	0.14	0.14		0.14	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	63	3229	1005	69	3237	1008	397	436		395	270	230
v/s Ratio Prot	0.00	0.38		c0.00	c0.41			0.00			0.00	
v/s Ratio Perm			0.00			0.03	0.00			c0.03		0.00
v/c Ratio	0.03	0.60	0.00	0.07	0.65	0.05	0.01	0.00		0.19	0.00	0.01
Uniform Delay, d1	28.9	6.5	4.0	28.9	6.8	4.1	21.9	21.9		22.6	21.9	22.0
Progression Factor	1.00	1.00	1.00	0.83	1.41	2.37	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	0.0	0.3	0.3	0.0	0.0	0.0		0.2	0.0	0.0
Delay (s)	29.1	6.8	4.0	24.3	9.8	9.7	22.0	21.9		22.8	21.9	22.0
Level of Service	C	A	A	C	A	A	C	C		C	C	C
Approach Delay (s)		6.8			9.9			22.0			22.7	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	59	1497	285	490	1691	66	286	99	425	29	86	61
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	1627	310	533	1838	72	311	108	462	32	93	66
RTOR Reduction (vph)	0	0	108	0	0	16	0	0	340	0	0	58
Lane Group Flow (vph)	64	1627	202	533	1838	56	311	108	122	32	93	8
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	35.8	35.8	33.0	61.8	61.8	20.0	31.6	31.6	3.6	15.2	15.2
Effective Green, g (s)	7.0	35.8	35.8	33.0	61.8	61.8	20.0	31.6	31.6	3.6	15.2	15.2
Actuated g/C Ratio	0.06	0.30	0.30	0.28	0.52	0.52	0.17	0.26	0.26	0.03	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	103	1517	472	487	2619	815	295	491	417	53	236	201
v/s Ratio Prot	0.04	c0.32		c0.30	0.36		c0.18	0.06		0.02	c0.05	
v/s Ratio Perm			0.13			0.04			0.08			0.01
v/c Ratio	0.62	1.07	0.43	1.09	0.70	0.07	1.05	0.22	0.29	0.60	0.39	0.04
Uniform Delay, d1	55.2	42.1	33.9	43.5	22.1	14.6	50.0	34.6	35.3	57.5	48.2	46.0
Progression Factor	1.02	0.93	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.2	43.4	0.5	68.9	0.9	0.0	67.4	1.0	1.8	17.9	4.9	0.4
Delay (s)	65.4	82.6	37.3	112.4	23.0	14.7	117.4	35.6	37.0	75.4	53.0	46.4
Level of Service	E	F	D	F	C	B	F	D	D	E	D	D
Approach Delay (s)		75.1			42.2			65.2			54.5	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM Average Control Delay	58.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	229	1800	123	351	2079	409	180	259	266	291	242	356
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	249	1957	134	382	2260	445	196	282	289	316	263	387
RTOR Reduction (vph)	0	0	20	0	0	152	0	0	200	0	0	192
Lane Group Flow (vph)	249	1957	114	382	2260	293	196	282	89	316	263	195
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.0	44.3	44.3	13.7	44.0	44.0	6.0	17.0	17.0	9.0	20.0	20.0
Effective Green, g (s)	14.0	44.3	44.3	13.7	44.0	44.0	6.0	17.0	17.0	9.0	20.0	20.0
Actuated g/C Ratio	0.14	0.44	0.44	0.14	0.44	0.44	0.06	0.17	0.17	0.09	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	248	2253	701	470	2237	697	206	602	269	309	708	317
v/s Ratio Prot	c0.14	0.38		0.11	c0.44		0.06	0.08		c0.09	0.07	
v/s Ratio Perm			0.07			0.18			0.06			c0.12
v/c Ratio	1.00	0.87	0.16	0.81	1.01	0.42	0.95	0.47	0.33	1.02	0.37	0.62
Uniform Delay, d1	43.0	25.2	16.7	41.9	28.0	19.2	46.9	37.4	36.5	45.5	34.6	36.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	58.2	3.8	0.1	10.3	21.6	0.4	48.8	2.6	3.3	57.1	1.5	8.6
Delay (s)	101.2	29.1	16.8	52.2	49.6	19.6	95.6	40.0	39.8	102.6	36.1	45.1
Level of Service	F	C	B	D	D	B	F	D	D	F	D	D
Approach Delay (s)		36.0			45.6			54.1			61.5	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM Average Control Delay	45.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	104	2131	160	311	2799	323	172	150	483	224	159	168
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	2316	174	338	3042	351	187	163	525	243	173	183
RTOR Reduction (vph)	0	0	56	0	0	63	0	0	105	0	0	55
Lane Group Flow (vph)	113	2316	118	338	3042	289	187	163	420	243	173	128
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	52.0	52.0	12.0	60.0	60.0	10.4	26.0	26.0	14.0	29.6	29.6
Effective Green, g (s)	4.0	52.0	52.0	12.0	60.0	60.0	10.4	26.0	26.0	14.0	29.6	29.6
Actuated g/C Ratio	0.03	0.43	0.43	0.10	0.50	0.50	0.09	0.22	0.22	0.12	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2204	686	343	2543	792	298	767	343	207	1254	390
v/s Ratio Prot	0.03	0.46		c0.10	c0.60		0.05	0.05		c0.14	0.03	
v/s Ratio Perm			0.07			0.18			c0.27			c0.08
v/c Ratio	0.99	1.05	0.17	0.99	1.20	0.36	0.63	0.21	1.22	1.17	0.14	0.33
Uniform Delay, d1	58.0	34.0	20.8	53.9	30.0	18.3	52.9	38.6	47.0	53.0	35.3	37.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	81.3	34.2	0.1	44.3	92.4	0.3	4.1	0.6	124.3	117.4	0.2	2.2
Delay (s)	139.3	68.2	20.9	98.2	122.4	18.6	57.0	39.2	171.3	170.4	35.5	39.3
Level of Service	F	E	C	F	F	B	E	D	F	F	D	D
Approach Delay (s)		68.1			110.5			122.3			91.4	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	96.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Volume (vph)	974	1750	67	288	2210	227	176	914	192	324	856	1079
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1059	1902	73	313	2402	247	191	993	209	352	930	1173
RTOR Reduction (vph)	0	0	26	0	0	57	0	0	169	0	0	1
Lane Group Flow (vph)	1059	1902	47	313	2402	190	191	993	40	352	930	1172
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	30.0	56.8	56.8	15.2	42.0	42.0	6.0	23.0	23.0	9.0	26.0	56.0
Effective Green, g (s)	30.0	56.8	56.8	15.2	42.0	42.0	6.0	23.0	23.0	9.0	26.0	56.0
Actuated g/C Ratio	0.25	0.47	0.47	0.13	0.35	0.35	0.05	0.19	0.19	0.08	0.22	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	858	2407	749	435	1780	554	172	975	303	257	767	792
v/s Ratio Prot	0.31	0.37		0.09	c0.47		0.06	0.20		c0.10	0.26	c0.37
v/s Ratio Perm			0.03			0.12			0.03			0.37
v/c Ratio	1.23	0.79	0.06	0.72	1.35	0.34	1.11	1.02	0.13	1.37	1.21	1.48
Uniform Delay, d1	45.0	26.6	17.1	50.4	39.0	28.8	57.0	48.5	40.2	55.5	47.0	32.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	115.5	1.8	0.0	5.6	161.1	0.4	101.3	33.5	0.9	189.2	107.5	223.0
Delay (s)	160.5	28.4	17.2	56.0	200.1	29.2	158.3	82.0	41.1	244.7	154.5	255.0
Level of Service	F	C	B	E	F	C	F	F	D	F	F	F
Approach Delay (s)		74.3			170.6			86.4			215.4	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	140.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	124.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	257	1821	376	189	1628	274	230	638	107	301	839	504
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	279	1979	409	205	1770	298	250	693	116	327	912	548
RTOR Reduction (vph)	0	0	145	0	0	104	0	0	91	0	0	100
Lane Group Flow (vph)	279	1979	264	205	1770	194	250	693	25	327	912	448
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	32.0	32.0	5.0	30.0	30.0	6.0	17.1	17.1	9.9	21.0	21.0
Effective Green, g (s)	7.0	32.0	32.0	5.0	30.0	30.0	6.0	17.1	17.1	9.9	21.0	21.0
Actuated g/C Ratio	0.09	0.40	0.40	0.06	0.38	0.38	0.08	0.21	0.21	0.12	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	300	2034	633	215	1907	594	257	1087	338	425	1335	416
v/s Ratio Prot	c0.08	c0.39		0.06	0.35		c0.07	0.14		0.10	0.18	
v/s Ratio Perm			0.17			0.12			0.02			c0.28
v/c Ratio	0.93	0.97	0.42	0.95	0.93	0.33	0.97	0.64	0.07	0.77	0.68	1.08
Uniform Delay, d1	36.3	23.6	17.3	37.4	24.0	17.8	36.9	28.6	25.1	33.9	26.5	29.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.0	14.1	0.4	48.0	8.4	0.3	48.2	2.9	0.4	8.2	2.9	66.0
Delay (s)	70.3	37.6	17.7	85.4	32.4	18.1	85.2	31.5	25.5	42.1	29.4	95.5
Level of Service	E	D	B	F	C	B	F	C	C	D	C	F
Approach Delay (s)		38.0			35.3			43.5			52.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	41.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	591	581	0	0	456	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	642	632	0	0	496	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1274		642	642
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1274		642	642
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	86
cM capacity (veh/h)			545		438	474

Direction, Lane #	EB 1	EB 2	NB 1
Volume Total	642	632	564
Volume Left	0	0	496
Volume Right	0	632	68
cSH	1700	1700	456
Volume to Capacity	0.38	0.37	1.24
Queue Length 95th (ft)	0	0	571
Control Delay (s)	0.0	0.0	151.9
Lane LOS			F
Approach Delay (s)	0.0		151.9
Approach LOS			F

Intersection Summary			
Average Delay	46.6		
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	9	2	68	24	2	81
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	2	74	26	2	88
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			12		171	5
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			12		171	5
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	92
cM capacity (veh/h)			1605		766	1077

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SW 1
Volume Total	5	5	2	74	13	13	90
Volume Left	0	0	0	74	0	0	2
Volume Right	0	0	2	0	0	0	88
cSH	1700	1700	1700	1605	1700	1700	1103
Volume to Capacity	0.00	0.00	0.00	0.05	0.01	0.01	0.08
Queue Length 95th (ft)	0	0	0	4	0	0	7
Control Delay (s)	0.0	0.0	0.0	7.4	0.0	0.0	8.7
Lane LOS				A			A
Approach Delay (s)	0.0			5.4			8.7
Approach LOS							A

Intersection Summary			
Average Delay	6.6		
Intersection Capacity Utilization	20.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	57	93	48	38	94	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	62	101	52	41	102	63

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1
Volume Total (vph)	62	101	52	41	165
Volume Left (vph)	62	0	0	0	102
Volume Right (vph)	0	101	0	41	0
Hadj (s)	0.53	-0.67	0.03	-0.67	0.16
Departure Headway (s)	5.7	4.5	5.1	4.4	5.0
Degree Utilization, x	0.10	0.13	0.07	0.05	0.23
Capacity (veh/h)	606	762	673	779	704
Control Delay (s)	8.1	6.9	7.3	6.4	9.4
Approach Delay (s)	7.4		6.9		9.4
Approach LOS	A		A		A

Intersection Summary			
Delay	8.1		
HCM Level of Service	A		
Intersection Capacity Utilization	24.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	10	7	8	15	15	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	8	9	16	16	11

Direction, Lane #	SE 1	SE 2	NE 1	NE 2	SW 1	SW 2
Volume Total (vph)	11	8	9	16	16	11
Volume Left (vph)	0	0	9	0	16	0
Volume Right (vph)	0	8	0	16	0	0
Hadj (s)	0.03	-0.67	0.53	-0.67	0.53	0.03
Departure Headway (s)	4.6	3.9	5.1	3.9	5.1	4.6
Degree Utilization, x	0.01	0.01	0.01	0.02	0.02	0.01
Capacity (veh/h)	771	911	685	891	699	766
Control Delay (s)	6.5	5.7	7.0	5.8	7.0	6.5
Approach Delay (s)	6.2		6.2		6.8	
Approach LOS	A		A		A	

Intersection Summary			
Delay	6.4		
HCM Level of Service	A		
Intersection Capacity Utilization	16.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	97	99	8	7	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	105	108	9	8	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	116				160	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	116				160	54
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1470				815	1002

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1	SB 2
Volume Total	0	53	53	54	54	9	8	0
Volume Left	0	0	0	0	0	0	8	0
Volume Right	0	0	0	0	0	9	0	0
cSH	1700	1700	1700	1700	1700	1700	815	1700
Volume to Capacity	0.00	0.03	0.03	0.03	0.03	0.01	0.01	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	1	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.5	0.0
Lane LOS							A	A
Approach Delay (s)	0.0			0.0			9.5	
Approach LOS							A	

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Bryan-Sierra

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: A[8.8]

Street Name:	Bryan						Sierra					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2 0 1			1 0 2 0 0			1 0 2 0 1			1 0 0 0 1		
Volume Module:												
Base Vol:	0	96	4	12	89	0	0	0	0	2	0	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	96	4	12	89	0	0	0	0	2	0	12
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	96	4	12	89	0	0	0	0	2	0	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	113	5	14	105	0	0	0	0	2	0	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	113	5	14	105	0	0	0	0	2	0	14
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	6.5	6.9	6.8	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	118	xxxx	xxxxx	190	252	53	194	xxxx	57
Potent Cap.:	xxxx	xxxx	xxxxx	1483	xxxx	xxxxx	758	655	1010	782	xxxx	1004
Move Cap.:	xxxx	xxxx	xxxxx	1483	xxxx	xxxxx	742	649	1010	776	xxxx	1004
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	0.00	0.00	0.00	0.00	xxxx	0.01
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	0.0
Control Del:	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.7	xxxx	8.6
LOS by Move:	*	*	*	A	*	*	*	*	*	A	*	A
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.8		
ApproachLOS:	*			*			*			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #23 Dante/Polk

Cycle (sec):	100	Critical Vol./Cap.(X):	0.595
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	14.1
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Polk					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0	1 0	1	1 0 1	0	1	1 0 0	1	0	1 0 1	0	1
Volume Module:												
Base Vol:	56	270	26	88	296	55	37	65	22	13	70	70
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	56	270	26	88	296	55	37	65	22	13	70	70
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	56	270	26	88	296	55	37	65	22	13	70	70
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	61	293	28	96	322	60	40	71	24	14	76	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	61	293	28	96	322	60	40	71	24	14	76	76
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	61	293	28	96	322	60	40	71	24	14	76	76
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.91	0.09	1.00	1.00	1.00	1.00	0.75	0.25	1.00	1.00	1.00
Final Sat.:	519	522	50	497	541	594	442	362	123	422	450	492
Capacity Analysis Module:												
Vol/Sat:	0.12	0.56	0.56	0.19	0.59	0.10	0.09	0.20	0.20	0.03	0.17	0.15
Crit Moves:		****			****			****			****	
Delay/Veh:	10.2	15.9	15.9	11.3	17.8	9.1	10.9	11.1	11.1	10.8	11.5	10.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.2	15.9	15.9	11.3	17.8	9.1	10.9	11.1	11.1	10.8	11.5	10.5
LOS by Move:	B	C	C	B	C	A	B	B	B	B	B	B
ApproachDel:		15.0			15.4			11.0			11.0	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		15.0			15.4			11.0			11.0	
LOS by Appr:		B			C			B			B	
AllWayAvgQ:	0.1	1.1	1.1	0.2	1.3	0.1	0.1	0.2	0.2	0.0	0.2	0.2

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	44	2	3	15	5	75	7	317	0	71	408	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	2	3	16	5	82	8	345	0	77	443	46
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	892	980	466	962	1003	172	489			345		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	892	980	466	962	1003	172	489			345		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	76	99	99	92	98	90	99			94		
cM capacity (veh/h)	198	231	543	197	224	841	1070			1211		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	48	2	3	16	5	82	8	172	172	0	77	489
Volume Left	48	0	0	16	0	0	8	0	0	0	77	0
Volume Right	0	0	3	0	0	82	0	0	0	0	0	46
cSH	198	231	543	197	224	841	1070	1700	1700	1700	1211	1700
Volume to Capacity	0.24	0.01	0.01	0.08	0.02	0.10	0.01	0.10	0.10	0.00	0.06	0.29
Queue Length 95th (ft)	23	1	0	7	2	8	1	0	0	0	5	0
Control Delay (s)	28.8	20.8	11.7	25.0	21.5	9.7	8.4	0.0	0.0	0.0	8.2	0.0
Lane LOS	D	C	B	C	C	A	A				A	
Approach Delay (s)	27.4			12.8			0.2				1.1	
Approach LOS	D			B								

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	46.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	90	50	380	104	122	758
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	98	54	413	113	133	824

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	152	413	113	133	824
Volume Left (vph)	0	413	0	133	0
Volume Right (vph)	54	0	0	0	824
Hadj (s)	-0.18	0.53	0.03	0.53	-0.67
Departure Headway (s)	7.0	7.4	6.9	7.2	6.0
Degree Utilization, x	0.30	0.85	0.22	0.27	1.37
Capacity (veh/h)	503	473	514	488	602
Control Delay (s)	12.9	38.3	10.6	11.6	195.7
Approach Delay (s)	12.9	32.4		170.2	
Approach LOS	B	D		F	

Intersection Summary			
Delay	111.2		
HCM Level of Service	F		
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	147	159	13	8	180	672	15	18	9	286	12	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	160	173	14	9	196	730	16	20	10	311	13	109

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	246	101	204	730	46	433
Volume Left (vph)	160	0	9	0	16	311
Volume Right (vph)	0	14	0	730	10	109
Hadj (s)	0.36	-0.06	0.06	-0.67	-0.02	0.03
Departure Headway (s)	7.8	7.4	7.1	6.3	8.1	6.7
Degree Utilization, x	0.53	0.21	0.40	1.29	0.10	0.80
Capacity (veh/h)	448	471	499	576	406	528
Control Delay (s)	18.2	11.1	13.6	161.4	12.0	31.8
Approach Delay (s)	16.2		129.0		12.0	31.8
Approach LOS	C		F		B	D

Intersection Summary			
Delay	79.9		
HCM Level of Service	F		
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #30 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.658
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	16.8
Optimal Cycle:	0	Level Of Service:	C

Street Name:	Dante						Bullard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	65	7	10	34	16	31	117	580	65	65	382	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	7	10	34	16	31	117	580	65	65	382	50
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	7	10	34	16	31	117	580	65	65	382	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	77	8	12	40	19	37	138	685	77	77	451	59
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	8	12	40	19	37	138	685	77	77	451	59
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	77	8	12	40	19	37	138	685	77	77	451	59
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	352	727	392	348	364	393	479	1041	565	443	958	519
Capacity Analysis Module:												
Vol/Sat:	0.22	0.01	0.03	0.12	0.05	0.09	0.29	0.66	0.14	0.17	0.47	0.11
Crit Moves:	****			****				****			****	
Delay/Veh:	14.2	11.6	11.0	13.1	11.9	11.5	12.8	21.2	9.7	12.0	16.0	10.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.2	11.6	11.0	13.1	11.9	11.5	12.8	21.2	9.7	12.0	16.0	10.1
LOS by Move:	B	B	B	B	B	B	B	C	A	B	C	B
ApproachDel:	13.6			12.2			18.9			14.9		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	13.6			12.2			18.9			14.9		
LOS by Appr:	B			B			C			B		
AllWayAvgQ:	0.2	0.0	0.0	0.1	0.0	0.1	0.4	1.7	0.1	0.2	0.8	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3487		1770	3498		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3487		1770	3498		1770	3539	1583	1770	3539	1583
Volume (vph)	190	750	82	175	915	76	188	883	167	87	878	132
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	815	89	190	995	83	204	960	182	95	954	143
RTOR Reduction (vph)	0	9	0	0	7	0	0	0	46	0	0	43
Lane Group Flow (vph)	207	895	0	190	1071	0	204	960	136	95	954	100
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	11.0	28.0		10.0	27.0		10.0	30.9	30.9	5.0	25.9	25.9
Effective Green, g (s)	11.0	28.0		10.0	27.0		10.0	30.9	30.9	5.0	25.9	25.9
Actuated g/C Ratio	0.12	0.31		0.11	0.30		0.11	0.34	0.34	0.06	0.29	0.29
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	217	1086		197	1051		197	1216	544	98	1020	456
v/s Ratio Prot	c0.12	0.26		0.11	c0.31		c0.12	0.27		0.05	c0.27	
v/s Ratio Perm									0.09			0.06
v/c Ratio	0.95	0.82		0.96	1.02		1.04	0.79	0.25	0.97	0.94	0.22
Uniform Delay, d1	39.2	28.7		39.8	31.4		40.0	26.6	21.2	42.4	31.2	24.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	47.8	5.2		53.5	32.6		73.7	3.5	0.2	80.0	15.0	0.2
Delay (s)	87.0	33.9		93.2	64.1		113.7	30.1	21.4	122.4	46.1	24.6
Level of Service	F	C		F	E		F	C	C	F	D	C
Approach Delay (s)		43.8			68.4			41.6			49.6	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	50.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	38	27	7	5	56	83	19	203	2	68	208	57
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	41	29	8	5	61	90	21	221	2	74	226	62
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	757	638	226	658	698	221	288			223		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	757	638	226	658	698	221	288			223		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	82	92	99	98	82	89	98			95		
cM capacity (veh/h)	236	367	813	332	339	819	1274			1346		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	157	241	2	300	62
Volume Left	41	5	21	0	74	0
Volume Right	8	90	0	2	0	62
cSH	296	511	1274	1700	1346	1700
Volume to Capacity	0.26	0.31	0.02	0.00	0.05	0.04
Queue Length 95th (ft)	26	32	1	0	4	0
Control Delay (s)	21.5	15.1	0.8	0.0	2.3	0.0
Lane LOS	C	C	A		A	
Approach Delay (s)	21.5	15.1	0.8		1.9	
Approach LOS	C	C				

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3404		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3404		1770	3539	1770	1583
Volume (vph)	835	285	532	1517	106	306
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	908	310	578	1649	115	333
RTOR Reduction (vph)	37	0	0	0	0	274
Lane Group Flow (vph)	1181	0	578	1649	115	59
Turn Type			Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases						2
Actuated Green, G (s)	32.0		30.0	66.0	16.0	16.0
Effective Green, g (s)	32.0		30.0	66.0	16.0	16.0
Actuated g/C Ratio	0.36		0.33	0.73	0.18	0.18
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1210		590	2595	315	281
v/s Ratio Prot	c0.35		c0.33	0.47	c0.06	
v/s Ratio Perm						0.04
v/c Ratio	0.98		0.98	0.64	0.37	0.21
Uniform Delay, d1	28.6		29.7	6.0	32.5	31.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	20.1		31.5	0.5	3.2	1.7
Delay (s)	48.7		61.2	6.5	35.8	33.3
Level of Service	D		E	A	D	C
Approach Delay (s)	48.7			20.7	33.9	
Approach LOS	D			C	C	

Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Volume (vph)	65	1122	1700	372	332	318
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	1220	1848	404	361	346
RTOR Reduction (vph)	0	0	0	179	0	81
Lane Group Flow (vph)	71	1220	1848	225	361	265
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	3.2	48.9	41.7	41.7	18.1	18.1
Effective Green, g (s)	3.2	48.9	41.7	41.7	18.1	18.1
Actuated g/C Ratio	0.04	0.65	0.56	0.56	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	76	2307	1968	880	427	382
v/s Ratio Prot	c0.04	0.34	c0.52		c0.20	
v/s Ratio Perm				0.14		0.17
v/c Ratio	0.93	0.53	0.94	0.26	0.85	0.69
Uniform Delay, d1	35.8	6.9	15.5	8.6	27.1	25.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	80.4	0.2	9.3	0.2	18.3	9.9
Delay (s)	116.2	7.2	24.8	8.8	45.4	35.9
Level of Service	F	A	C	A	D	D
Approach Delay (s)		13.1	21.9		40.7	
Approach LOS		B	C		D	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	47	1360	55	462	1809	274	199	278	39	47	619	882
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	1478	60	502	1966	298	216	302	42	51	673	959
RTOR Reduction (vph)	0	0	19	0	0	74	0	0	28	0	0	222
Lane Group Flow (vph)	51	1478	41	502	1966	224	216	302	14	51	673	737
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	4.0	36.0	36.0	22.0	54.0	54.0	10.0	39.2	39.2	6.8	36.0	36.0
Effective Green, g (s)	4.0	36.0	36.0	22.0	54.0	54.0	10.0	39.2	39.2	6.8	36.0	36.0
Actuated g/C Ratio	0.03	0.30	0.30	0.18	0.45	0.45	0.08	0.33	0.33	0.06	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	59	1062	475	325	1593	712	148	1156	517	100	1062	475
v/s Ratio Prot	0.03	c0.42		c0.28	0.56		c0.12	c0.09		0.03	0.19	
v/s Ratio Perm			0.03			0.14			0.01			c0.47
v/c Ratio	0.86	1.39	0.09	1.54	1.23	0.31	1.46	0.26	0.03	0.51	0.63	1.55
Uniform Delay, d1	57.7	42.0	30.2	49.0	33.0	21.1	55.0	29.7	27.4	55.0	36.3	42.0
Progression Factor	1.00	1.00	1.00	0.86	0.61	0.29	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	70.2	182.1	0.1	251.8	107.9	0.1	240.0	0.5	0.1	4.3	2.9	258.5
Delay (s)	127.9	224.1	30.3	294.0	128.2	6.2	295.0	30.3	27.5	59.3	39.2	300.5
Level of Service	F	F	C	F	F	A	F	C	C	E	D	F
Approach Delay (s)		213.7			145.2			132.2			188.7	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	171.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	113.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	305	1763	158	215	1877	263	296	818	158	444	433	179
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	332	1916	172	234	2040	286	322	889	172	483	471	195
RTOR Reduction (vph)	0	0	46	0	0	67	0	0	55	0	0	111
Lane Group Flow (vph)	332	1916	126	234	2040	219	322	889	117	483	471	84
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	12.0	49.0	49.0	9.0	46.0	46.0	15.4	29.0	29.0	17.0	30.6	30.6
Effective Green, g (s)	12.0	49.0	49.0	9.0	46.0	46.0	15.4	29.0	29.0	17.0	30.6	30.6
Actuated g/C Ratio	0.10	0.41	0.41	0.08	0.38	0.38	0.13	0.24	0.24	0.14	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	2076	646	257	1949	607	441	855	383	486	902	404
v/s Ratio Prot	c0.10	c0.38		0.07	c0.40		0.09	c0.25		c0.14	0.13	
v/s Ratio Perm			0.08			0.14			0.07			0.05
v/c Ratio	0.97	0.92	0.20	0.91	1.05	0.36	0.73	1.04	0.30	0.99	0.52	0.21
Uniform Delay, d1	53.8	33.7	22.8	55.1	37.0	26.5	50.3	45.5	37.2	51.4	38.4	35.2
Progression Factor	1.37	0.63	0.42	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.4	0.8	0.0	33.4	33.9	0.4	6.1	41.6	2.0	39.0	2.2	1.2
Delay (s)	82.3	22.0	9.7	88.5	70.9	26.9	56.4	87.1	39.3	90.5	40.6	36.3
Level of Service	F	C	A	F	E	C	E	F	D	F	D	D
Approach Delay (s)		29.4			67.6			74.0			60.8	
Approach LOS		C			E			E			E	

Intersection Summary			
HCM Average Control Delay	55.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	612	1516	232	323	1588	180	453	721	196	232	471	442
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	665	1648	252	351	1726	196	492	784	213	252	512	480
RTOR Reduction (vph)	0	0	96	0	0	80	0	0	97	0	0	233
Lane Group Flow (vph)	665	1648	156	351	1726	116	492	784	116	252	512	247
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	19.0	39.3	39.3	12.7	33.0	33.0	14.0	24.0	24.0	8.0	18.0	18.0
Effective Green, g (s)	19.0	39.3	39.3	12.7	33.0	33.0	14.0	24.0	24.0	8.0	18.0	18.0
Actuated g/C Ratio	0.19	0.39	0.39	0.13	0.33	0.33	0.14	0.24	0.24	0.08	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	652	1998	622	436	1678	522	481	849	380	275	637	285
v/s Ratio Prot	c0.19	0.32		0.10	c0.34		c0.14	c0.22		0.07	0.14	
v/s Ratio Perm			0.10			0.07			0.07			0.16
v/c Ratio	1.02	0.82	0.25	0.81	1.03	0.22	1.02	0.92	0.31	0.92	0.80	0.87
Uniform Delay, d1	40.5	27.3	20.4	42.4	33.5	24.2	43.0	37.1	31.2	45.7	39.3	39.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.4	2.9	0.2	10.4	29.6	0.2	47.0	17.1	2.1	32.8	10.4	28.0
Delay (s)	80.9	30.2	20.7	52.8	63.1	24.4	90.0	54.2	33.3	78.5	49.7	67.9
Level of Service	F	C	C	D	E	C	F	D	C	E	D	E
Approach Delay (s)		42.4			58.2			63.0			62.5	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	54.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	229	1478	133	281	1624	133	244	369	136	144	513	177
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	249	1607	145	305	1765	145	265	401	148	157	558	192
RTOR Reduction (vph)	0	0	85	0	0	65	0	0	112	0	0	131
Lane Group Flow (vph)	249	1607	60	305	1765	80	265	401	36	157	558	61
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	26.0	26.0	8.0	28.0	28.0	7.0	18.1	18.1	6.9	18.0	18.0
Effective Green, g (s)	6.0	26.0	26.0	8.0	28.0	28.0	7.0	18.1	18.1	6.9	18.0	18.0
Actuated g/C Ratio	0.08	0.35	0.35	0.11	0.37	0.37	0.09	0.24	0.24	0.09	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	275	1763	549	366	1898	591	320	854	382	316	849	380
v/s Ratio Prot	0.07	0.32		c0.09	c0.35		c0.08	0.11		0.05	c0.16	
v/s Ratio Perm			0.04			0.05			0.02			0.04
v/c Ratio	0.91	0.91	0.11	0.83	0.93	0.14	0.83	0.47	0.09	0.50	0.66	0.16
Uniform Delay, d1	34.2	23.4	16.6	32.8	22.6	15.5	33.4	24.3	22.1	32.4	25.7	22.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	30.6	7.6	0.1	14.9	8.6	0.1	16.0	1.9	0.5	1.2	4.0	0.9
Delay (s)	64.8	31.0	16.7	47.8	31.2	15.6	49.4	26.2	22.6	33.6	29.7	23.4
Level of Service	E	C	B	D	C	B	D	C	C	C	C	C
Approach Delay (s)		34.1			32.4			33.1			29.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.93	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3292	
Flt Permitted		1.00	1.00	0.95	1.00		0.62		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1150		1583	1770	3292	
Volume (vph)	0	1088	69	397	1263	0	53	0	511	160	106	92
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1183	75	432	1373	0	58	0	555	174	115	100
RTOR Reduction (vph)	0	0	21	0	0	0	0	0	341	0	37	0
Lane Group Flow (vph)	0	1183	54	432	1373	0	58	0	214	174	178	0
Turn Type			Perm	Prot			custom		custom	Prot		
Protected Phases		4		3	8					1	6	
Permitted Phases			4				2		2			
Actuated Green, G (s)		33.0	33.0	24.0	61.0		17.0		17.0	10.0	31.0	
Effective Green, g (s)		33.0	33.0	24.0	61.0		17.0		17.0	10.0	31.0	
Actuated g/C Ratio		0.33	0.33	0.24	0.61		0.17		0.17	0.10	0.31	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1168	522	425	2159		196		269	177	1021	
v/s Ratio Prot		c0.33		c0.24	0.39					c0.10	0.05	
v/s Ratio Perm			0.03				0.05		c0.14			
v/c Ratio		1.01	0.10	1.02	0.64		0.30		0.80	0.98	0.17	
Uniform Delay, d1		33.5	23.2	38.0	12.4		36.3		39.8	44.9	25.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		29.5	0.1	47.9	0.6		0.8		14.9	62.3	0.4	
Delay (s)		63.0	23.3	85.9	13.0		37.1		54.7	107.2	25.5	
Level of Service		E	C	F	B		D		D	F	C	
Approach Delay (s)		60.7			30.5			53.0			62.1	
Approach LOS		E			C			D			E	

Intersection Summary			
HCM Average Control Delay	46.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.89	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1487	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.42		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1487	1504	1508		1583
Volume (vph)	235	1165	0	0	957	698	616	17	900	209	0	390
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	255	1266	0	0	1040	759	670	18	978	227	0	424
RTOR Reduction (vph)	0	0	0	0	0	183	0	29	29	0	0	182
Lane Group Flow (vph)	255	1266	0	0	1040	576	543	564	501	227	0	242
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	14.0	52.0			34.0	34.0	40.0	40.0	40.0	16.0		16.0
Effective Green, g (s)	14.0	52.0			34.0	34.0	40.0	40.0	40.0	16.0		16.0
Actuated g/C Ratio	0.12	0.43			0.28	0.28	0.33	0.33	0.33	0.13		0.13
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	207	1534			1003	449	560	496	501	201		211
v/s Ratio Prot	c0.14	0.36			0.29		0.32	c0.38				
v/s Ratio Perm						c0.36			0.33	0.15		c0.15
v/c Ratio	1.23	0.83			1.04	1.28	0.97	1.14	1.00	1.13		1.15
Uniform Delay, d1	53.0	30.0			43.0	43.0	39.4	40.0	40.0	52.0		52.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	139.0	3.8			38.4	143.0	31.2	83.6	40.0	102.6		107.2
Delay (s)	192.0	33.8			81.4	186.0	70.6	123.6	80.0	154.6		159.2
Level of Service	F	C			F	F	E	F	F	F		F
Approach Delay (s)		60.3			125.5			92.5			157.6	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	101.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

2017 BASELINE TRAFFIC CONDITION

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	92	29	12	64	272	135
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	100	32	13	70	296	147

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	132	13	70	296	147
Volume Left (vph)	100	0	0	296	0
Volume Right (vph)	0	0	70	0	147
Hadj (s)	0.19	0.03	-0.67	0.53	-0.67
Departure Headway (s)	5.7	5.9	5.1	5.6	4.4
Degree Utilization, x	0.21	0.02	0.10	0.46	0.18
Capacity (veh/h)	597	570	648	625	785
Control Delay (s)	10.2	7.8	7.5	12.2	7.2
Approach Delay (s)	10.2	7.6		10.5	
Approach LOS	B	A		B	

Intersection Summary			
Delay	10.1		
HCM Level of Service	B		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	296	7	0	94	504	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	322	8	0	102	548	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1067	
pX, platoon unblocked	0.93	0.93	0.93			
vC, conflicting volume	650	548	548			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	625	516	516			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	23	99	100			
cM capacity (veh/h)	419	522	981			

Direction, Lane #	SE 1	SE 2	NE 1	SW 1
Volume Total	322	8	102	548
Volume Left	322	0	0	0
Volume Right	0	8	0	0
cSH	419	522	1700	1700
Volume to Capacity	0.77	0.01	0.06	0.32
Queue Length 95th (ft)	162	1	0	0
Control Delay (s)	36.9	12.0	0.0	0.0
Lane LOS	E	B		
Approach Delay (s)	36.3		0.0	0.0
Approach LOS	E			

Intersection Summary			
Average Delay	12.2		
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	26	485	288	0	0	482
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	527	313	0	0	524
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						573
pX, platoon unblocked	0.89					
vC, conflicting volume	837	313			313	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	816	313			313	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	28			100	
cM capacity (veh/h)	307	727			1247	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	555	313	524
Volume Left	28	0	0
Volume Right	527	0	0
cSH	680	1700	1700
Volume to Capacity	0.82	0.18	0.31
Queue Length 95th (ft)	215	0	0
Control Delay (s)	29.5	0.0	0.0
Lane LOS	D		
Approach Delay (s)	29.5	0.0	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	11.8		
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3395		3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3395		3433	5085	1583	1770	3539	1583
Volume (vph)	95	195	137	21	113	42	45	571	143	68	341	447
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	212	149	23	123	46	49	621	155	74	371	486
RTOR Reduction (vph)	0	0	112	0	38	0	0	0	95	0	0	288
Lane Group Flow (vph)	103	212	37	23	131	0	49	621	60	74	371	198
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	5.0	14.7	14.7	0.8	10.5		4.1	23.1	23.1	5.4	24.4	24.4
Effective Green, g (s)	5.0	14.7	14.7	0.8	10.5		4.1	23.1	23.1	5.4	24.4	24.4
Actuated g/C Ratio	0.08	0.24	0.24	0.01	0.18		0.07	0.38	0.38	0.09	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	286	867	388	46	594		235	1958	609	159	1439	644
v/s Ratio Prot	c0.03	c0.06		0.01	0.04		0.01	0.12		c0.04	0.10	
v/s Ratio Perm			0.02						0.04			c0.12
v/c Ratio	0.36	0.24	0.09	0.50	0.22		0.21	0.32	0.10	0.47	0.26	0.31
Uniform Delay, d1	26.0	18.2	17.5	29.4	21.2		26.4	12.9	11.8	25.9	11.8	12.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1	0.1	8.3	0.2		0.4	0.4	0.3	2.1	0.4	1.2
Delay (s)	26.8	18.3	17.6	37.7	21.4		26.9	13.4	12.1	28.1	12.2	13.3
Level of Service	C	B	B	D	C		C	B	B	C	B	B
Approach Delay (s)		20.0			23.4			13.9			14.0	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Weber/Herndon

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[10.2]

Street Name:	Weber						Herndon					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0	1		0 0	1!	0 0	0 1 2 0	1		0 1 2 0	1	
Volume Module:												
Base Vol:	0	0	8	0	0	0	62	626	4	4	840	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	8	0	0	0	62	626	4	4	840	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	8	0	0	0	62	626	4	4	840	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	9	0	0	0	67	680	4	4	913	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	9	0	0	0	67	680	4	4	913	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	227	1283	1741	304	913	xxxx	xxxxx	685	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	782	124	88	698	755	xxxx	xxxxx	918	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	782	114	79	698	755	xxxx	xxxxx	918	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.01	0.00	0.00	0.00	0.09	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	9.7	xxxxx	xxxx	xxxxx	10.2	xxxx	xxxxx	8.9	xxxx	xxxxx
LOS by Move:	*	*	A	*	*	*	B	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.2	xxxx	xxxxx	8.9	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	B	*	*	A	*	*
ApproachDel:	9.7			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	A			*			*			*		

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	257	195	273	52	592	190	280	53	137	181	62	257
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	279	212	297	57	643	207	304	58	149	197	67	279
RTOR Reduction (vph)	0	0	195	0	0	164	0	0	112	0	0	225
Lane Group Flow (vph)	279	212	102	57	643	43	304	58	37	197	67	54
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.5	27.4	27.4	3.6	16.5	16.5	17.6	19.8	19.8	13.2	15.4	15.4
Effective Green, g (s)	14.5	27.4	27.4	3.6	16.5	16.5	17.6	19.8	19.8	13.2	15.4	15.4
Actuated g/C Ratio	0.18	0.34	0.34	0.04	0.21	0.21	0.22	0.25	0.25	0.16	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	321	1742	542	80	1049	326	389	461	392	292	359	305
v/s Ratio Prot	c0.16	0.04		0.03	c0.13		c0.17	0.03		0.11	c0.04	
v/s Ratio Perm			0.06			0.03			0.02			0.03
v/c Ratio	0.87	0.12	0.19	0.71	0.61	0.13	0.78	0.13	0.09	0.67	0.19	0.18
Uniform Delay, d1	31.8	18.0	18.5	37.7	28.8	25.9	29.4	23.4	23.2	31.4	27.1	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.2	0.0	0.2	25.8	1.1	0.2	14.4	0.6	0.5	6.0	0.3	0.3
Delay (s)	53.1	18.1	18.6	63.5	29.9	26.1	43.8	23.9	23.7	37.4	27.3	27.3
Level of Service	D	B	B	E	C	C	D	C	C	D	C	C
Approach Delay (s)		30.7			31.2			35.7			31.0	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91		0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3433	5085		3433	1756		3433	1863	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3433	5085		3433	1756		3433	1863	
Volume (vph)	50	380	15	156	621	0	46	176	109	50	280	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	413	16	170	675	0	50	191	118	54	304	0
RTOR Reduction (vph)	0	0	12	0	0	0	0	33	0	0	0	0
Lane Group Flow (vph)	54	413	4	170	675	0	50	276	0	54	304	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	3.6	13.5	13.5	4.8	14.7		3.1	22.6		3.1	22.6	
Effective Green, g (s)	3.6	13.5	13.5	4.8	14.7		3.1	22.6		3.1	22.6	
Actuated g/C Ratio	0.06	0.22	0.22	0.08	0.24		0.05	0.38		0.05	0.38	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	106	1144	356	275	1246		177	661		177	702	
v/s Ratio Prot	0.03	0.08		c0.05	c0.13		0.01	0.16		c0.02	c0.16	
v/s Ratio Perm			0.00									
v/c Ratio	0.51	0.36	0.01	0.62	0.54		0.28	0.42		0.31	0.43	
Uniform Delay, d1	27.3	19.6	18.1	26.7	19.7		27.4	13.8		27.4	13.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.8	0.2	0.0	4.1	0.5		0.9	1.9		1.0	1.9	
Delay (s)	31.2	19.8	18.1	30.8	20.2		28.3	15.8		28.4	15.9	
Level of Service	C	B	B	C	C		C	B		C	B	
Approach Delay (s)		21.0			22.3			17.5			17.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.91		0.97	0.91		0.76
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5085		3433	5085		3610
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5085		3433	5085		3610
Volume (vph)	539	0	795	760	0	910
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	586	0	864	826	0	989
RTOR Reduction (vph)	0	0	0	0	0	191
Lane Group Flow (vph)	586	0	864	826	0	798
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	13.0		19.0	40.0		19.0
Effective Green, g (s)	13.0		19.0	40.0		19.0
Actuated g/C Ratio	0.32		0.48	1.00		0.48
Clearance Time (s)	4.0		4.0	3.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	1653		1631	5085		1715
v/s Ratio Prot	c0.12		c0.25	0.16		0.22
v/s Ratio Perm						
v/c Ratio	0.35		0.53	0.16		0.47
Uniform Delay, d1	10.3		7.4	0.0		7.1
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.1		0.3	0.0		0.2
Delay (s)	10.4		7.7	0.0		7.3
Level of Service	B		A	A		A
Approach Delay (s)	10.4			3.9	7.3	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1640		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1640		3433	1863	1583
Volume (vph)	6	1391	53	79	1441	123	72	58	230	128	114	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	1512	58	86	1566	134	78	63	250	139	124	26
RTOR Reduction (vph)	0	0	36	0	0	60	0	127	0	0	0	19
Lane Group Flow (vph)	7	1512	22	86	1566	74	78	186	0	139	124	7
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	23.1	23.1	3.2	25.5	25.5	2.4	14.5		3.2	15.3	15.3
Effective Green, g (s)	0.8	23.1	23.1	3.2	25.5	25.5	2.4	14.5		3.2	15.3	15.3
Actuated g/C Ratio	0.01	0.38	0.38	0.05	0.42	0.42	0.04	0.24		0.05	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	46	1958	609	183	2161	673	137	396		183	475	404
v/s Ratio Prot	0.00	0.30		c0.03	c0.31		0.02	c0.11		c0.04	0.07	
v/s Ratio Perm			0.01			0.05						0.00
v/c Ratio	0.15	0.77	0.04	0.47	0.72	0.11	0.57	0.47		0.76	0.26	0.02
Uniform Delay, d1	29.3	16.1	11.5	27.6	14.3	10.4	28.3	19.5		28.0	17.8	16.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.5	2.0	0.0	1.9	1.2	0.1	5.3	4.0		16.5	1.3	0.1
Delay (s)	30.8	18.1	11.5	29.5	15.6	10.5	33.6	23.4		44.5	19.2	16.8
Level of Service	C	B	B	C	B	B	C	C		D	B	B
Approach Delay (s)		17.9			15.9			25.5			31.1	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	291	1470	3	98	1102	158	152	184	151	297	275	375
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	316	1598	3	107	1198	172	165	200	164	323	299	408
RTOR Reduction (vph)	0	0	2	0	0	122	0	0	123	0	0	126
Lane Group Flow (vph)	316	1598	1	107	1198	50	165	200	41	323	299	282
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	22.6	22.6	3.2	18.8	18.8	5.0	16.2	16.2	7.0	18.2	18.2
Effective Green, g (s)	7.0	22.6	22.6	3.2	18.8	18.8	5.0	16.2	16.2	7.0	18.2	18.2
Actuated g/C Ratio	0.11	0.35	0.35	0.05	0.29	0.29	0.08	0.25	0.25	0.11	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	370	1768	550	169	1471	458	264	882	395	370	991	443
v/s Ratio Prot	c0.09	c0.31		0.03	0.24		0.05	0.06		c0.09	0.08	
v/s Ratio Perm			0.00			0.03			0.03			c0.18
v/c Ratio	0.85	0.90	0.00	0.63	0.81	0.11	0.62	0.23	0.10	0.87	0.30	0.64
Uniform Delay, d1	28.5	20.2	13.8	30.3	21.5	17.0	29.1	19.4	18.8	28.6	18.4	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.2	6.9	0.0	7.5	3.6	0.1	4.6	0.6	0.5	19.7	0.8	6.8
Delay (s)	45.7	27.1	13.8	37.8	25.1	17.1	33.6	20.0	19.3	48.3	19.2	27.3
Level of Service	D	C	B	D	C	B	C	C	B	D	B	C
Approach Delay (s)		30.1			25.1			24.1			31.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.95		0.97		
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00		
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		3539		3433		
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		3539		3433		
Volume (vph)	17	1910	1	2	1365	50	0	1	0	50	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	2076	1	2	1484	54	0	1	0	54	0	0
RTOR Reduction (vph)	0	0	0	0	0	20	0	0	0	0	0	0
Lane Group Flow (vph)	18	2076	1	2	1484	34	0	1	0	54	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	2.6	51.8	51.8	1.2	50.4	50.4		17.4		3.6		
Effective Green, g (s)	2.6	51.8	51.8	1.2	50.4	50.4		17.4		3.6		
Actuated g/C Ratio	0.03	0.58	0.58	0.01	0.56	0.56		0.19		0.04		
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0		
Lane Grp Cap (vph)	99	2927	911	46	2848	886		684		137		
v/s Ratio Prot	c0.01	c0.41		0.00	0.29			c0.00		c0.02		
v/s Ratio Perm			0.00			0.02						
v/c Ratio	0.18	0.71	0.00	0.04	0.52	0.04		0.00		0.39		
Uniform Delay, d1	42.7	13.7	8.1	43.8	12.3	8.9		29.3		42.1		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00		
Incremental Delay, d2	0.9	0.8	0.0	0.4	0.2	0.0		0.0		1.9		
Delay (s)	43.5	14.5	8.1	44.2	12.5	8.9		29.3		44.0		
Level of Service	D	B	A	D	B	A		C		D		
Approach Delay (s)		14.8			12.4			29.3			44.0	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	91	1884	143	320	1226	25	140	86	335	83	98	62
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	2048	155	348	1333	27	152	93	364	90	107	67
RTOR Reduction (vph)	0	0	51	0	0	9	0	0	241	0	0	56
Lane Group Flow (vph)	99	2048	104	348	1333	18	152	93	123	90	107	11
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.8	39.8	39.8	19.0	50.0	50.0	9.0	18.8	18.8	6.4	16.2	16.2
Effective Green, g (s)	8.8	39.8	39.8	19.0	50.0	50.0	9.0	18.8	18.8	6.4	16.2	16.2
Actuated g/C Ratio	0.09	0.40	0.40	0.19	0.50	0.50	0.09	0.19	0.19	0.06	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	156	2024	630	336	2543	792	159	350	298	113	302	256
v/s Ratio Prot	0.06	c0.40		c0.20	0.26		c0.09	0.05		0.05	0.06	
v/s Ratio Perm			0.07			0.01			c0.08			0.01
v/c Ratio	0.63	1.01	0.16	1.04	0.52	0.02	0.96	0.27	0.41	0.80	0.35	0.04
Uniform Delay, d1	44.0	30.1	19.4	40.5	16.9	12.6	45.3	34.7	35.7	46.2	37.3	35.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.2	23.0	0.1	58.6	0.2	0.0	57.8	1.9	4.2	31.0	3.2	0.3
Delay (s)	52.2	53.1	19.5	99.1	17.1	12.7	103.1	36.6	39.9	77.2	40.5	35.7
Level of Service	D	D	B	F	B	B	F	D	D	E	D	D
Approach Delay (s)		50.8			33.8			55.2			51.8	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM Average Control Delay	45.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	172	2122	209	204	1366	217	131	166	222	156	173	154
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	2307	227	222	1485	236	142	180	241	170	188	167
RTOR Reduction (vph)	0	0	32	0	0	52	0	0	115	0	0	125
Lane Group Flow (vph)	187	2307	195	222	1485	184	142	180	126	170	188	42
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.7	44.0	44.0	7.0	42.3	42.3	5.0	18.0	18.0	5.0	18.0	18.0
Effective Green, g (s)	8.7	44.0	44.0	7.0	42.3	42.3	5.0	18.0	18.0	5.0	18.0	18.0
Actuated g/C Ratio	0.10	0.49	0.49	0.08	0.47	0.47	0.06	0.20	0.20	0.06	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	332	2486	774	267	2390	744	191	708	317	191	708	317
v/s Ratio Prot	0.05	c0.45		c0.06	0.29		0.04	0.05		c0.05	0.05	
v/s Ratio Perm			0.12			0.12			c0.08			0.03
v/c Ratio	0.56	0.93	0.25	0.83	0.62	0.25	0.74	0.25	0.40	0.89	0.27	0.13
Uniform Delay, d1	38.8	21.5	13.4	40.9	17.9	14.3	41.9	30.3	31.3	42.2	30.4	29.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	6.7	0.2	19.3	0.5	0.2	14.5	0.9	3.7	36.3	0.9	0.9
Delay (s)	41.0	28.3	13.6	60.2	18.4	14.5	56.3	31.2	35.0	78.5	31.3	30.5
Level of Service	D	C	B	E	B	B	E	C	C	E	C	C
Approach Delay (s)		27.9			22.7			39.2			46.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	57	2306	154	50	1682	230	78	113	140	255	250	43
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	2507	167	54	1828	250	85	123	152	277	272	47
RTOR Reduction (vph)	0	0	57	0	0	86	0	0	74	0	0	34
Lane Group Flow (vph)	62	2507	110	54	1828	164	85	123	78	277	272	13
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	49.6	49.6	3.2	48.8	48.8	4.0	16.2	16.2	15.0	27.2	27.2
Effective Green, g (s)	4.0	49.6	49.6	3.2	48.8	48.8	4.0	16.2	16.2	15.0	27.2	27.2
Actuated g/C Ratio	0.04	0.50	0.50	0.03	0.49	0.49	0.04	0.16	0.16	0.15	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	137	2522	785	110	2481	773	137	573	256	266	1383	431
v/s Ratio Prot	c0.02	c0.49		0.02	0.36		0.02	0.03		c0.16	0.05	
v/s Ratio Perm			0.07			0.10			c0.05			0.01
v/c Ratio	0.45	0.99	0.14	0.49	0.74	0.21	0.62	0.21	0.31	1.04	0.20	0.03
Uniform Delay, d1	46.9	25.1	13.6	47.6	20.5	14.6	47.3	36.4	36.9	42.5	28.0	26.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	16.4	0.1	3.4	1.2	0.1	8.4	0.9	3.1	66.4	0.3	0.1
Delay (s)	49.3	41.5	13.7	51.0	21.6	14.8	55.7	37.2	40.0	108.9	28.3	26.8
Level of Service	D	D	B	D	C	B	E	D	D	F	C	C
Approach Delay (s)		40.0			21.6			42.8			65.6	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM Average Control Delay	36.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Volume (vph)	757	1809	99	236	1066	338	128	979	270	148	1036	695
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	823	1966	108	257	1159	367	139	1064	293	161	1126	755
RTOR Reduction (vph)	0	0	52	0	0	77	0	0	134	0	0	1
Lane Group Flow (vph)	823	1966	56	257	1159	290	139	1064	159	161	1126	754
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.0	34.0	34.0	7.0	20.0	20.0	4.0	27.0	27.0	6.0	29.0	50.0
Effective Green, g (s)	21.0	34.0	34.0	7.0	20.0	20.0	4.0	27.0	27.0	6.0	29.0	50.0
Actuated g/C Ratio	0.23	0.38	0.38	0.08	0.22	0.22	0.04	0.30	0.30	0.07	0.32	0.56
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	801	1921	598	267	1130	352	153	1526	475	229	1140	950
v/s Ratio Prot	c0.24	c0.39		0.07	0.23		0.04	0.21		c0.05	c0.32	0.19
v/s Ratio Perm			0.04			0.18			0.10			0.29
v/c Ratio	1.03	1.02	0.09	0.96	1.03	0.82	0.91	0.70	0.34	0.70	0.99	0.79
Uniform Delay, d1	34.5	28.0	18.1	41.4	35.0	33.3	42.8	27.9	24.5	41.1	30.3	15.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.0	26.7	0.1	44.5	33.5	14.4	46.2	2.7	1.9	9.4	23.9	4.6
Delay (s)	73.5	54.7	18.1	85.9	68.5	47.7	89.0	30.5	26.4	50.5	54.2	20.5
Level of Service	E	D	B	F	E	D	F	C	C	D	D	C
Approach Delay (s)		58.7			66.7			35.2			41.5	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM Average Control Delay	51.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	298	1595	133	95	1421	460	22	287	94	177	687	159
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	324	1734	145	103	1545	500	24	312	102	192	747	173
RTOR Reduction (vph)	0	0	83	0	0	215	0	0	77	0	0	122
Lane Group Flow (vph)	324	1734	62	103	1545	285	24	312	25	192	747	51
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	28.6	28.6	3.2	23.8	23.8	1.6	17.2	17.2	5.0	20.6	20.6
Effective Green, g (s)	8.0	28.6	28.6	3.2	23.8	23.8	1.6	17.2	17.2	5.0	20.6	20.6
Actuated g/C Ratio	0.11	0.41	0.41	0.05	0.34	0.34	0.02	0.25	0.25	0.07	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	392	2078	647	157	1729	538	78	1249	389	245	1496	466
v/s Ratio Prot	c0.09	c0.34		0.03	0.30		0.01	0.06		c0.06	c0.15	
v/s Ratio Perm			0.04			0.18			0.02			0.03
v/c Ratio	0.83	0.83	0.10	0.66	0.89	0.53	0.31	0.25	0.06	0.78	0.50	0.11
Uniform Delay, d1	30.3	18.6	12.7	32.9	21.9	18.6	33.7	21.2	20.2	32.0	20.4	18.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.3	3.1	0.1	9.5	6.4	0.9	2.2	0.5	0.3	15.0	1.2	0.5
Delay (s)	43.6	21.6	12.8	42.3	28.3	19.5	35.9	21.7	20.6	47.0	21.6	18.5
Level of Service	D	C	B	D	C	B	D	C	C	D	C	B
Approach Delay (s)		24.3			26.9			22.2			25.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	460	69	0	0	81	153
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	500	75	0	0	88	166
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			575		500	500
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			575		500	500
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		83	71
cM capacity (veh/h)			998		530	571

Direction, Lane #	EB 1	EB 2	NB 1
Volume Total	500	75	254
Volume Left	0	0	88
Volume Right	0	75	166
cSH	1700	1700	873
Volume to Capacity	0.29	0.04	0.29
Queue Length 95th (ft)	0	0	30
Control Delay (s)	0.0	0.0	13.6
Lane LOS			B
Approach Delay (s)	0.0		13.6
Approach LOS			B

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	153	0	297	151	1	356
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	166	0	323	164	1	387
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			166		894	83
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			166		894	83
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			77		99	60
cM capacity (veh/h)			1409		216	960

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SW 1
Volume Total	83	83	0	323	82	82	388
Volume Left	0	0	0	323	0	0	1
Volume Right	0	0	0	0	0	0	387
cSH	1700	1700	1700	1409	1700	1700	962
Volume to Capacity	0.05	0.05	0.00	0.23	0.05	0.05	0.40
Queue Length 95th (ft)	0	0	0	22	0	0	49
Control Delay (s)	0.0	0.0	0.0	8.3	0.0	0.0	11.3
Lane LOS				A			B
Approach Delay (s)	0.0			5.5			11.3
Approach LOS							B

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	236	253	183	242	148	183
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	257	275	199	263	161	199

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	257	275	462	360
Volume Left (vph)	257	0	0	161
Volume Right (vph)	0	275	263	0
Hadj (s)	0.53	-0.67	-0.31	0.12
Departure Headway (s)	7.4	6.1	5.7	6.3
Degree Utilization, x	0.53	0.47	0.74	0.63
Capacity (veh/h)	464	551	601	550
Control Delay (s)	17.0	13.3	23.1	19.5
Approach Delay (s)	15.1		23.1	19.5
Approach LOS	C		C	C

Intersection Summary			
Delay	19.0		
HCM Level of Service	C		
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.91	0.91	
Frt		0.85	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1583	1770	5085	5085	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1583	1770	5085	5085	
Volume (vph)	0	272	232	910	795	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	296	252	989	864	0
RTOR Reduction (vph)	0	260	0	0	0	0
Lane Group Flow (vph)	0	36	252	989	864	0
Turn Type		custom	Prot			Perm
Protected Phases	1!		5!	2	6!	
Permitted Phases		4				6
Actuated Green, G (s)		5.5	9.6	31.7	18.1	
Effective Green, g (s)		5.5	9.6	31.7	18.1	
Actuated g/C Ratio		0.12	0.21	0.70	0.40	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		193	376	3566	2036	
v/s Ratio Prot			c0.14	0.19	c0.17	
v/s Ratio Perm		c0.02				
v/c Ratio		0.19	0.67	0.28	0.42	
Uniform Delay, d1		17.8	16.3	2.5	9.8	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	4.6	0.2	0.7	
Delay (s)		18.3	21.0	2.7	10.4	
Level of Service		B	C	A	B	
Approach Delay (s)	18.3			6.4	10.4	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	16	67	126	168	53	12	83	1285	140	19	1249	5
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	73	137	183	58	13	90	1397	152	21	1358	5
RTOR Reduction (vph)	0	0	116	0	0	10	0	0	80	0	0	3
Lane Group Flow (vph)	17	73	21	183	58	3	90	1397	72	21	1358	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	8.7	8.7	5.2	13.1	13.1	2.4	27.3	27.3	0.8	25.7	25.7
Effective Green, g (s)	0.8	8.7	8.7	5.2	13.1	13.1	2.4	27.3	27.3	0.8	25.7	25.7
Actuated g/C Ratio	0.01	0.15	0.15	0.09	0.23	0.23	0.04	0.47	0.47	0.01	0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	47	531	237	308	799	358	142	2393	745	47	2253	701
v/s Ratio Prot	0.00	c0.02		c0.05	0.02		c0.03	c0.27		0.01	0.27	
v/s Ratio Perm			0.01			0.00			0.05			0.00
v/c Ratio	0.36	0.14	0.09	0.59	0.07	0.01	0.63	0.58	0.10	0.45	0.60	0.00
Uniform Delay, d1	28.3	21.4	21.2	25.4	17.7	17.4	27.4	11.2	8.5	28.4	12.3	9.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	0.1	0.2	3.1	0.0	0.0	8.9	1.0	0.3	6.6	1.2	0.0
Delay (s)	33.0	21.5	21.4	28.4	17.7	17.4	36.3	12.3	8.8	35.0	13.5	9.0
Level of Service	C	C	C	C	B	B	D	B	A	D	B	A
Approach Delay (s)		22.3			25.4			13.2			13.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	58.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Volume (vph)	70	157	100	5	9	133
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	171	109	5	10	145
RTOR Reduction (vph)	0	0	0	4	0	75
Lane Group Flow (vph)	76	171	109	1	10	70
Turn Type	Prot			custom		custom
Protected Phases	7	4				
Permitted Phases			8	8	6	6
Actuated Green, G (s)	2.8	12.6	5.8	5.8	19.0	19.0
Effective Green, g (s)	2.8	12.6	5.8	5.8	19.0	19.0
Actuated g/C Ratio	0.07	0.32	0.15	0.15	0.48	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	125	1126	518	232	849	760
v/s Ratio Prot	c0.04	c0.05				
v/s Ratio Perm			0.03	0.00	0.01	c0.04
v/c Ratio	0.61	0.15	0.21	0.00	0.01	0.09
Uniform Delay, d1	17.9	9.7	14.9	14.4	5.4	5.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	0.1	0.2	0.0	0.0	0.1
Delay (s)	26.0	9.7	15.1	14.4	5.4	5.7
Level of Service	C	A	B	B	A	A
Approach Delay (s)		14.7	15.1		5.6	
Approach LOS		B	B		A	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	39.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #23 Dante/Polk

Cycle (sec):	100	Critical Vol./Cap.(X):	0.403
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	11.0
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Polk					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	101	104	13	81	47	25	48	135	91	16	136	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	101	104	13	81	47	25	48	135	91	16	136	60
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	101	104	13	81	47	25	48	135	91	16	136	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	110	113	14	88	51	27	52	147	99	17	148	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	110	113	14	88	51	27	52	147	99	17	148	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	110	113	14	88	51	27	52	147	99	17	148	65
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.46	0.48	0.06	0.53	0.31	0.16	1.00	0.60	0.40	1.00	1.00	1.00
Final Sat.:	281	289	36	312	181	96	537	364	245	524	566	635
Capacity Analysis Module:												
Vol/Sat:	0.39	0.39	0.39	0.28	0.28	0.28	0.10	0.40	0.40	0.03	0.26	0.10
Crit Moves:	****			****				****			****	
Delay/Veh:	11.8	11.8	11.8	10.7	10.7	10.7	9.8	11.8	11.8	9.4	10.7	8.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.8	11.8	11.8	10.7	10.7	10.7	9.8	11.8	11.8	9.4	10.7	8.6
LOS by Move:	B	B	B	B	B	B	A	B	B	A	B	A
ApproachDel:	11.8			10.7			11.5			10.0		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	11.8			10.7			11.5			10.0		
LOS by Appr:	B			B			B			A		
AllWayAvgQ:	0.5	0.5	0.5	0.3	0.3	0.3	0.1	0.6	0.6	0.0	0.3	0.1

Note: Queue reported is the number of cars per lane.

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86		0.95	0.95		0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.97	
Satd. Flow (prot)	1770	5085	1583	1770	6406		1681	1504		1681	1626	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.86	
Satd. Flow (perm)	1770	5085	1583	1770	6406		1681	1504		1681	1438	
Volume (vph)	17	1456	614	71	1723	3	2	0	20	254	0	52
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	1583	667	77	1873	3	2	0	22	276	0	57
RTOR Reduction (vph)	0	0	383	0	0	0	0	21	0	0	19	0
Lane Group Flow (vph)	18	1583	284	77	1876	0	2	1	0	165	149	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	0.7	30.5	30.5	3.3	33.1		0.7	3.7		18.8	25.8	
Effective Green, g (s)	0.7	30.5	30.5	3.3	33.1		0.7	3.7		18.8	25.8	
Actuated g/C Ratio	0.01	0.43	0.43	0.05	0.46		0.01	0.05		0.26	0.36	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	17	2166	674	82	2961		16	78		441	568	
v/s Ratio Prot	0.01	c0.31		c0.04	c0.29		0.00	0.00		c0.10	0.07	
v/s Ratio Perm			0.18					0.00			c0.03	
v/c Ratio	1.06	0.73	0.42	0.94	0.63		0.12	0.01		0.37	0.26	
Uniform Delay, d1	35.4	17.1	14.4	34.0	14.6		35.1	32.2		21.6	16.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	238.2	2.2	1.9	78.1	1.0		3.5	0.1		0.5	0.2	
Delay (s)	273.7	19.3	16.3	112.1	15.7		38.7	32.3		22.1	16.4	
Level of Service	F	B	B	F	B		D	C		C	B	
Approach Delay (s)		20.5			19.5			32.8			19.2	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	71.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	9	7	0	11	170	11	38	0	56	15	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	10	8	0	12	185	12	41	0	61	16	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	375	205	18	216	207	21	20			41		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	375	205	18	216	207	21	20			41		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	99	99	100	98	82	99			96		
cM capacity (veh/h)	437	659	1056	684	657	1052	1595			1566		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	9	10	8	0	12	185	12	21	21	0	61	20
Volume Left	9	0	0	0	0	0	12	0	0	0	61	0
Volume Right	0	0	8	0	0	185	0	0	0	0	0	3
cSH	437	659	1056	1700	657	1052	1595	1700	1700	1700	1566	1700
Volume to Capacity	0.02	0.01	0.01	0.00	0.02	0.18	0.01	0.01	0.01	0.00	0.04	0.01
Queue Length 95th (ft)	2	1	1	0	1	16	1	0	0	0	3	0
Control Delay (s)	13.4	10.5	8.4	0.0	10.6	9.1	7.3	0.0	0.0	0.0	7.4	0.0
Lane LOS	B	B	A	A	B	A	A				A	
Approach Delay (s)	10.9			9.2			1.6				5.6	
Approach LOS	B			A								

Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0				4.0		4.0
Lane Util. Factor		0.91			0.86	1.00				0.97		0.88
Frt		1.00			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085			6408	1583				3433		2787
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085			6408	1583				3433		2787
Volume (vph)	0	1733	0	0	1644	99	0	0	0	225	0	352
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1884	0	0	1787	108	0	0	0	245	0	383
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	5
Lane Group Flow (vph)	0	1884	0	0	1787	108	0	0	0	245	0	378
Turn Type						Free				custom		custom
Protected Phases		2			6							
Permitted Phases						Free				8		8
Actuated Green, G (s)		21.6			21.6	40.7				11.1		11.1
Effective Green, g (s)		21.6			21.6	40.7				11.1		11.1
Actuated g/C Ratio		0.53			0.53	1.00				0.27		0.27
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		2699			3401	1583				936		760
v/s Ratio Prot		c0.37			0.28							
v/s Ratio Perm						0.07				0.07		c0.14
v/c Ratio		0.70			0.53	0.07				0.26		0.50
Uniform Delay, d1		7.1			6.2	0.0				11.6		12.5
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		1.5			0.6	0.1				0.1		0.5
Delay (s)		8.6			6.8	0.1				11.7		13.0
Level of Service		A			A	A				B		B
Approach Delay (s)		8.6			6.4			0.0			12.5	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	40.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0		4.0			
Lane Util. Factor		0.91	1.00		0.91		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		5085	1583		5085		1770		1583			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		5085	1583		5085		1770		1583			
Volume (vph)	0	1872	459	0	1185	0	44	0	73	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2035	499	0	1288	0	48	0	79	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	35	0	0	0
Lane Group Flow (vph)	0	2035	499	0	1288	0	48	0	44	0	0	0
Turn Type			Free				custom		custom			
Protected Phases		2			6							
Permitted Phases			Free				4		4			
Actuated Green, G (s)		50.2	64.9		50.2		6.7		6.7			
Effective Green, g (s)		50.2	64.9		50.2		6.7		6.7			
Actuated g/C Ratio		0.77	1.00		0.77		0.10		0.10			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		3933	1583		3933		183		163			
v/s Ratio Prot		c0.40			0.25							
v/s Ratio Perm			c0.32				0.03		0.03			
v/c Ratio		0.52	0.32		0.33		0.26		0.27			
Uniform Delay, d1		2.8	0.0		2.2		26.8		26.8			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		0.5	0.5		0.2		0.8		0.9			
Delay (s)		3.3	0.5		2.5		27.6		27.7			
Level of Service		A	A		A		C		C			
Approach Delay (s)		2.7			2.5			27.7			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	3.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	4.0
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	156	131	467	185	79	511
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	170	142	508	201	86	555

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	312	508	201	86	555
Volume Left (vph)	170	508	0	0	0
Volume Right (vph)	0	0	201	0	555
Hadj (s)	0.14	0.53	-0.67	0.03	-0.67
Departure Headway (s)	7.5	7.7	6.6	7.3	6.6
Degree Utilization, x	0.65	1.09	0.37	0.17	1.02
Capacity (veh/h)	471	459	544	484	545
Control Delay (s)	23.2	95.5	12.1	10.7	69.2
Approach Delay (s)	23.2	71.8		61.4	
Approach LOS	C	F		F	

Intersection Summary			
Delay	58.6		
HCM Level of Service	F		
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	462	506	64	14	150	135	33	1	5	300	11	290
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	502	550	70	15	163	147	36	1	5	326	12	315

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	777	345	178	147	42	653
Volume Left (vph)	502	0	15	0	36	326
Volume Right (vph)	0	70	0	147	5	315
Hadj (s)	0.36	-0.11	0.08	-0.67	0.13	-0.16
Departure Headway (s)	7.6	7.1	8.0	7.2	8.5	6.4
Degree Utilization, x	1.64	0.68	0.39	0.29	0.10	1.17
Capacity (veh/h)	479	495	446	490	409	555
Control Delay (s)	314.6	22.8	14.9	12.0	12.4	117.1
Approach Delay (s)	225.0		13.6		12.4	117.1
Approach LOS	F		B		B	F

Intersection Summary			
Delay	155.8		
HCM Level of Service	F		
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #30 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.849
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	29.6
Optimal Cycle:	0	Level Of Service:	D

Street Name:	Dante						Bullard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	166	11	18	120	13	47	17	691	36	25	503	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	166	11	18	120	13	47	17	691	36	25	503	16
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	166	11	18	120	13	47	17	691	36	25	503	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	180	12	20	130	14	51	18	751	39	27	547	17
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	12	20	130	14	51	18	751	39	27	547	17
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	180	12	20	130	14	51	18	751	39	27	547	17
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	340	696	374	333	344	370	397	885	459	379	832	432
Capacity Analysis Module:												
Vol/Sat:	0.53	0.02	0.05	0.39	0.04	0.14	0.05	0.85	0.09	0.07	0.66	0.04
Crit Moves:	****			****				****			****	
Delay/Veh:	22.4	12.4	12.0	18.5	12.7	12.9	11.7	41.1	10.7	12.3	25.2	10.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	22.4	12.4	12.0	18.5	12.7	12.9	11.7	41.1	10.7	12.3	25.2	10.8
LOS by Move:	C	B	B	C	B	B	B	E	B	B	D	B
ApproachDel:	20.9			16.7			39.0			24.2		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	20.9			16.7			39.0			24.2		
LOS by Appr:	C			C			E			C		
AllWayAvgQ:	0.9	0.0	0.0	0.5	0.0	0.1	0.0	3.7	0.1	0.1	1.6	0.0

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3492		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3492		1770	3539	1583	1770	3539	1583
Volume (vph)	192	894	66	216	663	65	43	637	55	55	582	196
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	209	972	72	235	721	71	47	692	60	60	633	213
RTOR Reduction (vph)	0	0	25	0	6	0	0	0	48	0	0	168
Lane Group Flow (vph)	209	972	47	235	786	0	47	692	12	60	633	45
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	18.3	60.0	60.0	16.0	57.7		3.2	24.8	24.8	4.0	25.6	25.6
Effective Green, g (s)	18.3	60.0	60.0	16.0	57.7		3.2	24.8	24.8	4.0	25.6	25.6
Actuated g/C Ratio	0.15	0.50	0.50	0.13	0.48		0.03	0.21	0.21	0.03	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	268	925	786	234	1668		47	727	325	59	750	335
v/s Ratio Prot	0.12	c0.52		c0.13	0.23		0.03	c0.20		c0.03	0.18	
v/s Ratio Perm			0.03						0.01			0.03
v/c Ratio	0.78	1.05	0.06	1.00	0.47		1.00	0.95	0.04	1.02	0.84	0.13
Uniform Delay, d1	49.3	30.4	15.8	52.4	21.3		58.8	47.4	38.4	58.4	45.7	38.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.4	43.8	0.0	59.9	0.2		131.3	22.2	0.0	122.0	8.6	0.2
Delay (s)	62.7	74.2	15.8	112.3	21.5		190.1	69.6	38.5	180.4	54.3	38.8
Level of Service	E	E	B	F	C		F	E	D	F	D	D
Approach Delay (s)		69.0			42.3			74.4			59.0	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM Average Control Delay	60.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00		1.00	0.88	1.00	0.91		1.00	0.91	0.88
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583		1863	2787	1770	5085		1770	5085	2787
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583		1863	2787	1770	5085		1770	5085	2787
Volume (vph)	218	22	8	0	14	665	8	1447	0	312	802	144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	237	24	9	0	15	723	9	1573	0	339	872	157
RTOR Reduction (vph)	0	0	7	0	0	81	0	0	0	0	0	39
Lane Group Flow (vph)	237	24	2	0	15	642	9	1573	0	339	872	118
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.9	15.1	15.1		1.2	17.4	0.7	29.6		16.2	45.1	55.0
Effective Green, g (s)	9.9	15.1	15.1		1.2	17.4	0.7	29.6		16.2	45.1	55.0
Actuated g/C Ratio	0.14	0.21	0.21		0.02	0.24	0.01	0.41		0.22	0.62	0.75
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	466	386	328		31	818	17	2065		393	3146	2256
v/s Ratio Prot	c0.07	0.01			0.01	c0.17	0.01	c0.31		c0.19	0.17	0.01
v/s Ratio Perm			0.00			0.06						0.04
v/c Ratio	0.51	0.06	0.01		0.48	0.79	0.53	0.76		0.86	0.28	0.05
Uniform Delay, d1	29.2	23.2	22.9		35.5	26.0	35.9	18.6		27.3	6.4	2.3
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1	0.0		11.4	5.0	26.7	1.7		17.4	0.0	0.0
Delay (s)	30.1	23.3	22.9		47.0	31.0	62.6	20.3		44.7	6.4	2.3
Level of Service	C	C	C		D	C	E	C		D	A	A
Approach Delay (s)		29.3			31.3			20.6			15.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	72.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	317	21	3	91	2	12	25	4	1	11	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	345	23	3	99	2	13	27	4	1	12	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	119	72	12	262	72	27	16			32		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	119	72	12	262	72	27	16			32		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	58	98	99	88	100	99			100		
cM capacity (veh/h)	770	811	1069	449	811	1048	1601			1581		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	372	104	40	4	13	4
Volume Left	4	3	13	0	1	0
Volume Right	23	2	0	4	0	4
cSH	823	795	1601	1700	1581	1700
Volume to Capacity	0.45	0.13	0.01	0.00	0.00	0.00
Queue Length 95th (ft)	59	11	1	0	0	0
Control Delay (s)	12.9	10.2	2.4	0.0	0.6	0.0
Lane LOS	B	B	A		A	
Approach Delay (s)	12.9	10.2	2.2		0.5	
Approach LOS	B	B				

Intersection Summary			
Average Delay	11.1		
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0					4.0		4.0
Lane Util. Factor		0.95	1.00		0.95					1.00		1.00
Frt		1.00	0.85		1.00					1.00		0.85
Flt Protected		1.00	1.00		1.00					0.95		1.00
Satd. Flow (prot)		3539	1583		3539					1770		1583
Flt Permitted		1.00	1.00		1.00					0.95		1.00
Satd. Flow (perm)		3539	1583		3539					1770		1583
Volume (vph)	0	675	93	0	711	0	0	0	0	314	0	139
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	734	101	0	773	0	0	0	0	341	0	151
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	47
Lane Group Flow (vph)	0	734	101	0	773	0	0	0	0	341	0	104
Turn Type			Free			Free				custom		custom
Protected Phases		4			8							
Permitted Phases			Free			Free				6		6
Actuated Green, G (s)		14.3	40.0		14.3					17.7		17.7
Effective Green, g (s)		14.3	40.0		14.3					17.7		17.7
Actuated g/C Ratio		0.36	1.00		0.36					0.44		0.44
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		1265	1583		1265					783		700
v/s Ratio Prot		0.21			c0.22							
v/s Ratio Perm			0.06							c0.19		0.07
v/c Ratio		0.58	0.06		0.61					0.44		0.15
Uniform Delay, d1		10.4	0.0		10.6					7.7		6.7
Progression Factor		1.00	1.00		1.27					1.00		1.00
Incremental Delay, d2		0.7	0.1		0.5					1.8		0.4
Delay (s)		11.1	0.1		14.0					9.5		7.1
Level of Service		B	A		B					A		A
Approach Delay (s)		9.8			14.0			0.0			8.7	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0		4.0			
Lane Util. Factor		0.95	1.00		0.95	1.00	1.00		1.00			
Frt		1.00	0.85		1.00	0.85	1.00		0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3539	1583		3539	1583	1770		1583			
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3539	1583		3539	1583	1770		1583			
Volume (vph)	0	616	24	0	905	443	571	0	119	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	670	26	0	984	482	621	0	129	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	68	0	0	0
Lane Group Flow (vph)	0	670	26	0	984	482	621	0	61	0	0	0
Turn Type			Free			Free	custom		custom			
Protected Phases		4			8							
Permitted Phases			Free			Free	2		2			
Actuated Green, G (s)		14.8	40.0		14.8	40.0	17.2		17.2			
Effective Green, g (s)		14.8	40.0		14.8	40.0	17.2		17.2			
Actuated g/C Ratio		0.37	1.00		0.37	1.00	0.43		0.43			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		1309	1583		1309	1583	761		681			
v/s Ratio Prot		0.19			c0.28							
v/s Ratio Perm			0.02			0.30	c0.35		0.04			
v/c Ratio		0.51	0.02		0.75	0.30	0.82		0.09			
Uniform Delay, d1		9.8	0.0		11.0	0.0	10.0		6.8			
Progression Factor		1.00	1.00		1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.3	0.0		2.5	0.5	9.4		0.3			
Delay (s)		10.0	0.0		13.5	0.5	19.4		7.0			
Level of Service		B	A		B	A	B		A			
Approach Delay (s)		9.7			9.2			17.3			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	5	653	40	352	810	130	520	345	3	15	241	579
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	710	43	383	880	141	565	375	3	16	262	629
RTOR Reduction (vph)	0	0	28	0	0	72	0	0	2	0	0	281
Lane Group Flow (vph)	5	710	15	383	880	69	565	375	1	16	262	348
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	0.8	25.2	25.2	24.0	48.4	48.4	35.0	52.8	52.8	2.0	19.8	19.8
Effective Green, g (s)	0.8	25.2	25.2	24.0	48.4	48.4	35.0	52.8	52.8	2.0	19.8	19.8
Actuated g/C Ratio	0.01	0.21	0.21	0.20	0.40	0.40	0.29	0.44	0.44	0.02	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	12	743	332	354	1427	638	516	1557	697	30	584	261
v/s Ratio Prot	0.00	c0.20		c0.22	0.25		c0.32	0.11		0.01	0.07	
v/s Ratio Perm			0.01			0.04			0.00			c0.22
v/c Ratio	0.42	0.96	0.05	1.08	0.62	0.11	1.09	0.24	0.00	0.53	0.45	1.34
Uniform Delay, d1	59.4	46.8	37.8	48.0	28.4	22.3	42.5	21.0	18.8	58.5	45.2	50.1
Progression Factor	1.00	1.00	1.00	1.01	1.17	1.88	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.8	22.5	0.1	65.1	0.6	0.1	68.0	0.4	0.0	17.0	2.5	174.5
Delay (s)	81.1	69.4	37.9	113.6	33.9	42.1	110.5	21.4	18.8	75.5	47.7	224.6
Level of Service	F	E	D	F	C	D	F	C	B	E	D	F
Approach Delay (s)		67.7			56.4			74.8			170.9	
Approach LOS		E			E			E			F	

Intersection Summary			
HCM Average Control Delay	88.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	92	1294	116	112	1002	103	171	159	88	113	767	130
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	1407	126	122	1089	112	186	173	96	123	834	141
RTOR Reduction (vph)	0	0	88	0	0	78	0	0	65	0	0	98
Lane Group Flow (vph)	100	1407	38	122	1089	34	186	173	31	123	834	43
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	18.1	18.1	3.2	18.1	18.1	4.6	19.5	19.5	3.2	18.1	18.1
Effective Green, g (s)	3.2	18.1	18.1	3.2	18.1	18.1	4.6	19.5	19.5	3.2	18.1	18.1
Actuated g/C Ratio	0.05	0.30	0.30	0.05	0.30	0.30	0.08	0.32	0.32	0.05	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1534	478	183	1534	478	263	1150	514	183	1068	478
v/s Ratio Prot	0.03	c0.28		c0.04	0.21		c0.05	0.05		0.04	c0.24	
v/s Ratio Perm			0.02			0.02			0.02			0.03
v/c Ratio	0.55	0.92	0.08	0.67	0.71	0.07	0.71	0.15	0.06	0.67	0.78	0.09
Uniform Delay, d1	27.7	20.2	15.0	27.9	18.6	14.9	27.0	14.4	13.9	27.9	19.1	15.0
Progression Factor	1.08	1.31	1.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.0	0.0	8.8	1.5	0.1	8.4	0.3	0.2	9.3	5.7	0.4
Delay (s)	30.2	27.4	28.5	36.7	20.1	15.0	35.4	14.6	14.2	37.2	24.8	15.4
Level of Service	C	C	C	D	C	B	D	B	B	D	C	B
Approach Delay (s)		27.7			21.2			23.0			25.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	78	1730	95	136	893	43	182	421	180	234	407	464
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	1880	103	148	971	47	198	458	196	254	442	504
RTOR Reduction (vph)	0	0	45	0	0	28	0	0	92	0	0	106
Lane Group Flow (vph)	85	1880	58	148	971	19	198	458	104	254	442	398
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	29.8	29.8	4.0	29.8	29.8	5.0	18.2	18.2	7.0	20.2	20.2
Effective Green, g (s)	4.0	29.8	29.8	4.0	29.8	29.8	5.0	18.2	18.2	7.0	20.2	20.2
Actuated g/C Ratio	0.05	0.40	0.40	0.05	0.40	0.40	0.07	0.24	0.24	0.09	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	2020	629	183	2020	629	229	859	384	320	953	426
v/s Ratio Prot	0.02	c0.37		c0.04	0.19		0.06	0.13		c0.07	0.12	
v/s Ratio Perm			0.04			0.01			0.07			c0.25
v/c Ratio	0.46	0.93	0.09	0.81	0.48	0.03	0.86	0.53	0.27	0.79	0.46	0.93
Uniform Delay, d1	34.5	21.6	14.1	35.1	16.8	13.8	34.7	24.7	23.0	33.3	22.9	26.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	8.4	0.1	22.4	0.2	0.0	27.0	2.4	1.7	12.7	1.6	29.9
Delay (s)	36.3	30.0	14.2	57.6	17.0	13.8	61.7	27.1	24.7	46.0	24.5	56.7
Level of Service	D	C	B	E	B	B	E	C	C	D	C	E
Approach Delay (s)		29.5			22.0			34.6			42.6	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	111	1656	136	148	1137	46	195	462	360	148	412	6
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	121	1800	148	161	1236	50	212	502	391	161	448	7
RTOR Reduction (vph)	0	0	81	0	0	30	0	0	98	0	0	5
Lane Group Flow (vph)	121	1800	67	161	1236	20	212	502	293	161	448	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	27.8	27.8	4.0	27.8	27.8	5.0	18.2	18.2	4.0	17.2	17.2
Effective Green, g (s)	4.0	27.8	27.8	4.0	27.8	27.8	5.0	18.2	18.2	4.0	17.2	17.2
Actuated g/C Ratio	0.06	0.40	0.40	0.06	0.40	0.40	0.07	0.26	0.26	0.06	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	196	2019	629	196	2019	629	245	920	412	196	870	389
v/s Ratio Prot	0.04	c0.35		c0.05	0.24		c0.06	0.14		0.05	0.13	
v/s Ratio Perm			0.04			0.01			c0.19			0.00
v/c Ratio	0.62	0.89	0.11	0.82	0.61	0.03	0.87	0.55	0.71	0.82	0.51	0.00
Uniform Delay, d1	32.3	19.7	13.3	32.6	16.8	12.9	32.2	22.3	23.5	32.6	22.8	19.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.7	5.4	0.1	23.3	0.6	0.0	25.7	2.3	10.0	23.3	2.2	0.0
Delay (s)	37.9	25.1	13.4	56.0	17.4	12.9	57.9	24.7	33.5	56.0	25.0	20.0
Level of Service	D	C	B	E	B	B	E	C	C	E	C	B
Approach Delay (s)		25.0			21.5			34.2			33.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.97	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3440	
Flt Permitted		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1770		1583	1770	3440	
Volume (vph)	0	1243	30	116	595	0	29	0	355	191	371	86
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1351	33	126	647	0	32	0	386	208	403	93
RTOR Reduction (vph)	0	0	9	0	0	0	0	0	159	0	22	0
Lane Group Flow (vph)	0	1351	24	126	647	0	32	0	227	208	474	0
Turn Type			Perm	Prot			Prot		custom	Prot		
Protected Phases		4		3	8		5			1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		35.2	35.2	8.0	47.2		2.9		17.2	11.8	26.1	
Effective Green, g (s)		35.2	35.2	8.0	47.2		2.9		17.2	11.8	26.1	
Actuated g/C Ratio		0.40	0.40	0.09	0.54		0.03		0.20	0.13	0.30	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1412	632	161	1894		58		309	237	1018	
v/s Ratio Prot		c0.38		c0.07	0.18		0.02			c0.12	0.14	
v/s Ratio Perm			0.02						c0.14			
v/c Ratio		0.96	0.04	0.78	0.34		0.55		0.74	0.88	0.47	
Uniform Delay, d1		25.8	16.2	39.2	11.7		42.0		33.4	37.5	25.4	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		14.8	0.0	21.5	0.1		10.9		8.8	28.4	1.5	
Delay (s)		40.5	16.2	60.8	11.8		52.9		42.2	65.9	26.9	
Level of Service		D	B	E	B		D		D	E	C	
Approach Delay (s)		39.9			19.8			43.0			38.4	
Approach LOS		D			B			D			D	

Intersection Summary			
HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	88.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.92	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1522	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98	1.00	0.59		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1522	1504	2132		1583
Volume (vph)	350	970	0	0	510	214	292	6	373	190	0	251
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	1054	0	0	554	233	317	7	405	207	0	273
RTOR Reduction (vph)	0	0	0	0	0	159	0	57	101	0	0	218
Lane Group Flow (vph)	380	1054	0	0	554	74	213	194	164	207	0	55
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	16.0	35.4			15.4	15.4	16.0	16.0	16.0	16.0		16.0
Effective Green, g (s)	16.0	35.4			15.4	15.4	16.0	16.0	16.0	16.0		16.0
Actuated g/C Ratio	0.20	0.45			0.19	0.19	0.20	0.20	0.20	0.20		0.20
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	357	1578			686	307	339	307	303	430		319
v/s Ratio Prot	c0.21	0.30			c0.16		0.13	c0.13				
v/s Ratio Perm						0.05			0.11	c0.10		0.03
v/c Ratio	1.06	0.67			0.81	0.24	0.63	0.63	0.54	0.48		0.17
Uniform Delay, d1	31.7	17.4			30.6	27.1	29.0	29.0	28.4	28.0		26.2
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	65.7	1.1			6.9	0.4	8.5	9.6	6.8	3.8		1.2
Delay (s)	97.4	18.4			37.5	27.5	37.5	38.6	35.2	31.9		27.4
Level of Service	F	B			D	C	D	D	D	C		C
Approach Delay (s)		39.4			34.5			37.1			29.3	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	36.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	79.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	80	34	14	42	404	81
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	87	37	15	46	439	88

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	124	15	46	439	88
Volume Left (vph)	87	0	0	439	0
Volume Right (vph)	0	0	46	0	88
Hadj (s)	0.17	0.03	-0.67	0.53	-0.67
Departure Headway (s)	6.0	6.2	5.5	5.6	4.4
Degree Utilization, x	0.21	0.03	0.07	0.68	0.11
Capacity (veh/h)	566	534	601	629	800
Control Delay (s)	10.5	8.1	7.7	18.4	6.7
Approach Delay (s)	10.5	7.8		16.4	
Approach LOS	B	A		C	

Intersection Summary			
Delay	14.7		
HCM Level of Service	B		
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	242	27	0	71	524	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	263	29	0	77	570	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1067	
pX, platoon unblocked	0.89	0.89	0.89			
vC, conflicting volume	647	570	570			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	602	515	515			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	36	94	100			
cM capacity (veh/h)	410	497	932			

Direction, Lane #	SE 1	SE 2	NE 1	SW 1
Volume Total	263	29	77	570
Volume Left	263	0	0	0
Volume Right	0	29	0	0
cSH	410	497	1700	1700
Volume to Capacity	0.64	0.06	0.05	0.34
Queue Length 95th (ft)	108	5	0	0
Control Delay (s)	28.1	12.7	0.0	0.0
Lane LOS	D	B		
Approach Delay (s)	26.6		0.0	0.0
Approach LOS	D			

Intersection Summary			
Average Delay	8.3		
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	46	582	98	0	0	485
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	50	633	107	0	0	527
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						573
pX, platoon unblocked	0.86					
vC, conflicting volume	634	107			107	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	572	107			107	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	33			100	
cM capacity (veh/h)	412	948			1484	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	683	107	527
Volume Left	50	0	0
Volume Right	633	0	0
cSH	865	1700	1700
Volume to Capacity	0.79	0.06	0.31
Queue Length 95th (ft)	206	0	0
Control Delay (s)	22.8	0.0	0.0
Lane LOS	C		
Approach Delay (s)	22.8	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	11.8		
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3324		3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3324		3433	5085	1583	1770	3539	1583
Volume (vph)	302	178	111	22	138	94	80	399	160	47	341	258
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	328	193	121	24	150	102	87	434	174	51	371	280
RTOR Reduction (vph)	0	0	85	0	84	0	0	0	119	0	0	196
Lane Group Flow (vph)	328	193	36	24	168	0	87	434	55	51	371	84
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	9.7	18.0	18.0	2.0	10.3		5.9	19.0	19.0	5.0	18.1	18.1
Effective Green, g (s)	9.7	18.0	18.0	2.0	10.3		5.9	19.0	19.0	5.0	18.1	18.1
Actuated g/C Ratio	0.16	0.30	0.30	0.03	0.17		0.10	0.32	0.32	0.08	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	555	1062	475	114	571		338	1610	501	148	1068	478
v/s Ratio Prot	c0.10	0.05		0.01	c0.05		0.03	0.09		c0.03	c0.10	
v/s Ratio Perm			0.02						0.03			0.05
v/c Ratio	0.59	0.18	0.08	0.21	0.29		0.26	0.27	0.11	0.34	0.35	0.18
Uniform Delay, d1	23.3	15.5	15.0	28.2	21.7		25.0	15.3	14.5	26.0	16.3	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.1	0.1	0.9	0.3		0.4	0.4	0.4	1.4	0.9	0.8
Delay (s)	25.0	15.6	15.1	29.2	22.0		25.4	15.7	15.0	27.4	17.2	16.3
Level of Service	C	B	B	C	C		C	B	B	C	B	B
Approach Delay (s)		20.3			22.6			16.7			17.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Weber/Herndon

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: A[9.9]

Street Name:	Weber						Herndon					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0	1	0 0	1!	0 0	0 1	2 0	1	0 1	2 0	1
Volume Module:												
Base Vol:	0	0	4	0	0	0	49	732	19	7	570	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	4	0	0	0	49	732	19	7	570	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	4	0	0	0	49	732	19	7	570	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	4	0	0	0	53	796	21	8	620	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	4	0	0	0	53	796	21	8	620	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	265	1007	1558	207	620	xxxx	xxxxx	816	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	739	198	114	806	971	xxxx	xxxxx	820	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	739	187	106	806	971	xxxx	xxxxx	820	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.01	0.00	0.00	0.00	0.05	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	9.9	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx	9.4	xxxx	xxxxx
LOS by Move:	*	*	A	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx	9.4	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	A	*	*	A	*	*
ApproachDel:	9.9			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	A			*			*			*		

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863		1770	1863	1583
Volume (vph)	258	333	176	2	230	43	156	88	0	170	84	252
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	280	362	191	2	250	47	170	96	0	185	91	274
RTOR Reduction (vph)	0	0	134	0	0	39	0	0	0	0	0	227
Lane Group Flow (vph)	280	362	57	2	250	8	170	96	0	185	91	47
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.0	22.2	22.2	0.8	12.0	12.0	23.2	23.0		13.0	12.8	12.8
Effective Green, g (s)	11.0	22.2	22.2	0.8	12.0	12.0	23.2	23.0		13.0	12.8	12.8
Actuated g/C Ratio	0.15	0.30	0.30	0.01	0.16	0.16	0.31	0.31		0.17	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	260	1505	469	19	814	253	548	571		307	318	270
v/s Ratio Prot	c0.16	0.07		0.00	c0.05		c0.10	0.05		c0.10	c0.05	
v/s Ratio Perm			0.04			0.00						0.03
v/c Ratio	1.08	0.24	0.12	0.11	0.31	0.03	0.31	0.17		0.60	0.29	0.17
Uniform Delay, d1	32.0	20.0	19.3	36.7	27.8	26.6	19.8	19.0		28.6	27.1	26.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	77.8	0.1	0.1	2.4	0.2	0.0	1.5	0.6		3.3	0.5	0.3
Delay (s)	109.8	20.1	19.4	39.2	28.0	26.6	21.3	19.6		31.9	27.6	26.9
Level of Service	F	C	B	D	C	C	C	B		C	C	C
Approach Delay (s)		50.1			27.9			20.7			28.7	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	36.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91		0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085		3433	1806		3433	1863	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085		3433	1806		3433	1863	
Volume (vph)	50	420	41	87	344	0	31	236	61	50	235	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	457	45	95	374	0	34	257	66	54	255	0
RTOR Reduction (vph)	0	0	36	0	0	0	0	14	0	0	0	0
Lane Group Flow (vph)	54	457	9	95	374	0	34	309	0	54	255	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	2.4	11.4	11.4	4.0	13.0		2.6	24.6		4.0	26.0	
Effective Green, g (s)	2.4	11.4	11.4	4.0	13.0		2.6	24.6		4.0	26.0	
Actuated g/C Ratio	0.04	0.19	0.19	0.07	0.22		0.04	0.41		0.07	0.43	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	137	966	301	229	1102		149	740		229	807	
v/s Ratio Prot	0.02	c0.09		c0.03	0.07		0.01	c0.17		c0.02	0.14	
v/s Ratio Perm			0.01									
v/c Ratio	0.39	0.47	0.03	0.41	0.34		0.23	0.42		0.24	0.32	
Uniform Delay, d1	28.1	21.6	19.8	26.9	19.9		27.7	12.6		26.6	11.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	0.4	0.0	1.2	0.2		0.8	1.7		0.5	1.0	
Delay (s)	30.0	22.0	19.8	28.1	20.1		28.5	14.3		27.1	12.2	
Level of Service	C	C	B	C	C		C	B		C	B	
Approach Delay (s)		22.6			21.7			15.7			14.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.91		0.97	0.91		0.76
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5085		3433	5085		3610
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5085		3433	5085		3610
Volume (vph)	460	0	989	424	0	853
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	500	0	1075	461	0	927
RTOR Reduction (vph)	0	0	0	0	0	230
Lane Group Flow (vph)	500	0	1075	461	0	697
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	11.0		21.0	40.0		21.0
Effective Green, g (s)	11.0		21.0	40.0		21.0
Actuated g/C Ratio	0.28		0.52	1.00		0.52
Clearance Time (s)	4.0		4.0	3.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	1398		1802	5085		1895
v/s Ratio Prot	c0.10		c0.31	0.09		0.19
v/s Ratio Perm						
v/c Ratio	0.36		0.60	0.09		0.37
Uniform Delay, d1	11.7		6.6	0.0		5.6
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.2		0.5	0.0		0.1
Delay (s)	11.8		7.1	0.0		5.7
Level of Service	B		A	A		A
Approach Delay (s)	11.8			5.0	5.7	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1734		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1734		3433	1863	1583
Volume (vph)	8	1236	69	253	1324	145	65	174	148	180	162	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	1343	75	275	1439	158	71	189	161	196	176	26
RTOR Reduction (vph)	0	0	50	0	0	76	0	55	0	0	0	19
Lane Group Flow (vph)	9	1343	25	275	1439	82	71	295	0	196	176	7
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	20.2	20.2	6.0	25.4	25.4	2.4	13.8		4.0	15.4	15.4
Effective Green, g (s)	0.8	20.2	20.2	6.0	25.4	25.4	2.4	13.8		4.0	15.4	15.4
Actuated g/C Ratio	0.01	0.34	0.34	0.10	0.42	0.42	0.04	0.23		0.07	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	46	1712	533	343	2153	670	137	399		229	478	406
v/s Ratio Prot	0.00	c0.26		c0.08	0.28		0.02	c0.17		c0.06	0.09	
v/s Ratio Perm			0.02			0.05						0.00
v/c Ratio	0.20	0.78	0.05	0.80	0.67	0.12	0.52	0.74		0.86	0.37	0.02
Uniform Delay, d1	29.3	17.9	13.4	26.4	13.9	10.5	28.2	21.4		27.7	18.3	16.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	2.4	0.0	12.6	0.8	0.1	3.3	11.7		25.5	2.2	0.1
Delay (s)	31.4	20.4	13.5	39.1	14.7	10.6	31.5	33.1		53.2	20.5	16.7
Level of Service	C	C	B	D	B	B	C	C		D	C	B
Approach Delay (s)		20.1			17.9			32.9			36.3	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	402	1194	53	186	1428	228	23	278	101	258	270	276
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	437	1298	58	202	1552	248	25	302	110	280	293	300
RTOR Reduction (vph)	0	0	35	0	0	130	0	0	85	0	0	209
Lane Group Flow (vph)	437	1298	23	202	1552	118	25	302	25	280	293	92
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	12.0	29.4	29.4	8.6	26.0	26.0	1.6	18.0	18.0	8.0	24.4	24.4
Effective Green, g (s)	12.0	29.4	29.4	8.6	26.0	26.0	1.6	18.0	18.0	8.0	24.4	24.4
Actuated g/C Ratio	0.15	0.37	0.37	0.11	0.32	0.32	0.02	0.22	0.22	0.10	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	515	1869	582	369	1653	514	69	796	356	343	1079	483
v/s Ratio Prot	c0.13	c0.26		0.06	c0.31		0.01	c0.09		c0.08	0.08	
v/s Ratio Perm			0.01			0.07			0.02			0.06
v/c Ratio	0.85	0.69	0.04	0.55	0.94	0.23	0.36	0.38	0.07	0.82	0.27	0.19
Uniform Delay, d1	33.1	21.5	16.2	33.9	26.2	19.7	38.7	26.3	24.4	35.3	21.1	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.3	1.1	0.0	1.7	10.7	0.2	3.2	1.4	0.4	13.9	0.6	0.9
Delay (s)	45.5	22.6	16.3	35.5	36.9	19.9	41.9	27.6	24.8	49.2	21.7	21.4
Level of Service	D	C	B	D	D	B	D	C	C	D	C	C
Approach Delay (s)		28.0			34.7			27.7			30.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Volume (vph)	6	1544	1	4	1838	60	2	0	4	60	1	21
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	1678	1	4	1998	65	2	0	4	65	1	23
RTOR Reduction (vph)	0	0	0	0	0	19	0	3	0	0	0	18
Lane Group Flow (vph)	7	1678	1	4	1998	46	2	1	0	65	1	5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	1.2	49.1	49.1	1.2	49.1	49.1	5.6	19.3		4.4	18.1	18.1
Effective Green, g (s)	1.2	49.1	49.1	1.2	49.1	49.1	5.6	19.3		4.4	18.1	18.1
Actuated g/C Ratio	0.01	0.55	0.55	0.01	0.55	0.55	0.06	0.21		0.05	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	46	2774	864	46	2774	864	214	645		168	375	318
v/s Ratio Prot	c0.00	0.33		0.00	c0.39		0.00	0.00		c0.02	0.00	
v/s Ratio Perm			0.00			0.03						c0.00
v/c Ratio	0.15	0.60	0.00	0.09	0.72	0.05	0.01	0.00		0.39	0.00	0.01
Uniform Delay, d1	43.9	13.9	9.3	43.9	15.3	9.6	39.6	27.8		41.5	28.7	28.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.5	0.4	0.0	0.8	0.9	0.0	0.0	0.0		1.5	0.0	0.0
Delay (s)	45.4	14.2	9.3	44.7	16.3	9.6	39.6	27.8		43.0	28.7	28.8
Level of Service	D	B	A	D	B	A	D	C		D	C	C
Approach Delay (s)		14.4			16.1			31.7			39.2	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	81	1363	231	415	1635	76	371	114	360	30	89	84
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	1482	251	451	1777	83	403	124	391	33	97	91
RTOR Reduction (vph)	0	0	97	0	0	19	0	0	266	0	0	79
Lane Group Flow (vph)	88	1482	154	451	1777	64	403	124	125	33	97	12
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.6	33.0	33.0	29.0	53.4	53.4	26.0	38.4	38.4	3.6	16.0	16.0
Effective Green, g (s)	8.6	33.0	33.0	29.0	53.4	53.4	26.0	38.4	38.4	3.6	16.0	16.0
Actuated g/C Ratio	0.07	0.28	0.28	0.24	0.44	0.44	0.22	0.32	0.32	0.03	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	127	1398	435	428	2263	704	384	596	507	53	248	211
v/s Ratio Prot	0.05	c0.29		c0.25	0.35		c0.23	0.07		0.02	c0.05	
v/s Ratio Perm			0.10			0.04			0.08			0.01
v/c Ratio	0.69	1.06	0.35	1.05	0.79	0.09	1.05	0.21	0.25	0.62	0.39	0.06
Uniform Delay, d1	54.4	43.5	34.9	45.5	28.4	19.3	47.0	29.7	30.1	57.5	47.5	45.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.1	41.8	0.5	58.4	1.9	0.1	59.5	0.8	1.2	20.6	4.6	0.5
Delay (s)	69.5	85.3	35.4	103.9	30.3	19.3	106.5	30.5	31.3	78.1	52.1	45.9
Level of Service	E	F	D	F	C	B	F	C	C	E	D	D
Approach Delay (s)		77.6			44.2			64.2			53.5	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM Average Control Delay	59.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	325	1491	124	214	1976	334	164	256	179	245	294	340
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	353	1621	135	233	2148	363	178	278	195	266	320	370
RTOR Reduction (vph)	0	0	27	0	0	56	0	0	158	0	0	163
Lane Group Flow (vph)	353	1621	108	233	2148	307	178	278	37	266	320	207
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	38.8	38.8	10.2	39.0	39.0	6.0	17.0	17.0	8.0	19.0	19.0
Effective Green, g (s)	10.0	38.8	38.8	10.2	39.0	39.0	6.0	17.0	17.0	8.0	19.0	19.0
Actuated g/C Ratio	0.11	0.43	0.43	0.11	0.43	0.43	0.07	0.19	0.19	0.09	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	381	2192	682	389	2204	686	229	668	299	305	747	334
v/s Ratio Prot	c0.10	0.32		0.07	c0.42		0.05	0.08		c0.08	0.09	
v/s Ratio Perm			0.07			0.19			0.02			c0.13
v/c Ratio	0.93	0.74	0.16	0.60	0.97	0.45	0.78	0.42	0.12	0.87	0.43	0.62
Uniform Delay, d1	39.6	21.4	15.6	38.0	25.0	17.9	41.3	32.1	30.3	40.5	30.8	32.2
Progression Factor	1.00	1.00	1.00	0.57	1.63	1.99	0.95	0.48	1.01	1.00	1.00	1.00
Incremental Delay, d2	28.1	1.3	0.1	1.2	8.4	0.2	10.3	1.2	0.6	22.8	1.8	8.4
Delay (s)	67.7	22.7	15.7	22.9	49.2	35.9	49.7	16.6	31.2	63.3	32.6	40.7
Level of Service	E	C	B	C	D	D	D	B	C	E	C	D
Approach Delay (s)		29.8			45.2			30.0			44.3	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM Average Control Delay	38.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	88	1606	202	167	2217	238	97	239	135	153	247	134
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	1746	220	182	2410	259	105	260	147	166	268	146
RTOR Reduction (vph)	0	0	121	0	0	75	0	0	104	0	0	81
Lane Group Flow (vph)	96	1746	99	182	2410	184	105	260	43	166	268	65
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	40.2	40.2	8.6	45.6	45.6	4.8	16.2	16.2	9.0	20.4	20.4
Effective Green, g (s)	3.2	40.2	40.2	8.6	45.6	45.6	4.8	16.2	16.2	9.0	20.4	20.4
Actuated g/C Ratio	0.04	0.45	0.45	0.10	0.51	0.51	0.05	0.18	0.18	0.10	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	122	2271	707	328	2576	802	183	637	285	177	1153	359
v/s Ratio Prot	0.03	0.34		c0.05	c0.47		0.03	c0.07		c0.09	0.05	
v/s Ratio Perm			0.06			0.12			0.03			0.04
v/c Ratio	0.79	0.77	0.14	0.55	0.94	0.23	0.57	0.41	0.15	0.94	0.23	0.18
Uniform Delay, d1	43.1	21.0	14.7	38.9	20.8	12.4	41.6	32.7	31.1	40.2	28.4	28.1
Progression Factor	0.72	1.48	4.71	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.7	1.1	0.1	2.0	7.2	0.1	4.3	1.9	1.1	49.3	0.5	1.1
Delay (s)	50.9	32.1	69.2	40.9	28.0	12.5	45.9	34.6	32.2	89.5	28.9	29.2
Level of Service	D	C	E	D	C	B	D	C	C	F	C	C
Approach Delay (s)		36.9			27.4			36.2			46.3	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	33.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Volume (vph)	819	1050	81	172	1850	161	167	1102	44	266	1289	786
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	890	1141	88	187	2011	175	182	1198	48	289	1401	854
RTOR Reduction (vph)	0	0	52	0	0	48	0	0	35	0	0	0
Lane Group Flow (vph)	890	1141	36	187	2011	127	182	1198	13	289	1401	854
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	23.0	49.6	49.6	10.4	37.0	37.0	5.0	33.0	33.0	11.0	39.0	62.0
Effective Green, g (s)	23.0	49.6	49.6	10.4	37.0	37.0	5.0	33.0	33.0	11.0	39.0	62.0
Actuated g/C Ratio	0.19	0.41	0.41	0.09	0.31	0.31	0.04	0.28	0.28	0.09	0.32	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	658	2102	654	298	1568	488	143	1398	435	315	1150	871
v/s Ratio Prot	c0.26	0.22		0.05	c0.40		c0.05	0.24		0.08	c0.40	0.19
v/s Ratio Perm			0.02			0.08			0.01			0.35
v/c Ratio	1.35	0.54	0.06	0.63	1.28	0.26	1.27	0.86	0.03	0.92	1.22	0.98
Uniform Delay, d1	48.5	26.6	21.1	52.9	41.5	31.2	57.5	41.3	31.8	54.0	40.5	28.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	168.5	0.3	0.0	4.1	132.1	0.3	166.1	7.0	0.1	30.1	106.3	25.6
Delay (s)	217.0	26.9	21.2	57.0	173.6	31.5	223.6	48.2	31.9	84.1	146.8	54.0
Level of Service	F	C	C	E	F	C	F	D	C	F	F	D
Approach Delay (s)		106.5			154.0			70.0			108.5	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM Average Control Delay	114.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	112.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	120	1120	326	458	1471	323	154	765	127	187	853	477
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	1217	354	498	1599	351	167	832	138	203	927	518
RTOR Reduction (vph)	0	0	127	0	0	126	0	0	101	0	0	111
Lane Group Flow (vph)	130	1217	227	498	1599	225	167	832	37	203	927	407
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	21.0	21.0	13.0	29.0	29.0	5.0	21.4	21.4	8.6	25.0	25.0
Effective Green, g (s)	5.0	21.0	21.0	13.0	29.0	29.0	5.0	21.4	21.4	8.6	25.0	25.0
Actuated g/C Ratio	0.06	0.26	0.26	0.16	0.36	0.36	0.06	0.27	0.27	0.11	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	215	1335	416	558	1843	574	215	1360	423	369	1589	495
v/s Ratio Prot	0.04	0.24		c0.15	c0.31		c0.05	0.16		0.06	0.18	
v/s Ratio Perm			0.14			0.14			0.02			c0.26
v/c Ratio	0.60	0.91	0.55	0.89	0.87	0.39	0.78	0.61	0.09	0.55	0.58	0.82
Uniform Delay, d1	36.5	28.6	25.4	32.8	23.7	19.0	37.0	25.7	22.0	33.9	23.1	25.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	9.6	1.5	16.5	4.6	0.4	16.0	2.1	0.4	1.8	1.6	14.2
Delay (s)	41.3	38.2	26.9	49.3	28.3	19.4	53.0	27.7	22.4	35.6	24.7	39.7
Level of Service	D	D	C	D	C	B	D	C	C	D	C	D
Approach Delay (s)		36.1			31.3			30.8			30.7	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	473	2	0	0	55	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	514	2	0	0	60	80
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			516		514	514
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			516		514	514
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		89	86
cM capacity (veh/h)			1049		520	560

Direction, Lane #	EB 1	EB 2	NB 1
Volume Total	514	2	140
Volume Left	0	0	60
Volume Right	0	2	80
cSH	1700	1700	977
Volume to Capacity	0.30	0.00	0.14
Queue Length 95th (ft)	0	0	13
Control Delay (s)	0.0	0.0	12.6
Lane LOS			B
Approach Delay (s)	0.0		12.6
Approach LOS			B

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	218	0	59	220	1	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	237	0	64	239	1	77
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			237		485	118
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			237		485	118
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	92
cM capacity (veh/h)			1327		487	911

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SW 1
Volume Total	118	118	0	64	120	120	78
Volume Left	0	0	0	64	0	0	1
Volume Right	0	0	0	0	0	0	77
cSH	1700	1700	1700	1327	1700	1700	924
Volume to Capacity	0.07	0.07	0.00	0.05	0.07	0.07	0.08
Queue Length 95th (ft)	0	0	0	4	0	0	7
Control Delay (s)	0.0	0.0	0.0	7.9	0.0	0.0	9.4
Lane LOS				A			A
Approach Delay (s)	0.0			1.7			9.4
Approach LOS							A

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	22.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	310	69	121	297	76	105
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	337	75	132	323	83	114

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	337	75	454	197
Volume Left (vph)	337	0	0	83
Volume Right (vph)	0	75	323	0
Hadj (s)	0.53	-0.67	-0.39	0.12
Departure Headway (s)	6.8	5.6	5.2	6.1
Degree Utilization, x	0.64	0.12	0.65	0.33
Capacity (veh/h)	507	615	674	555
Control Delay (s)	19.7	8.1	17.3	12.0
Approach Delay (s)	17.5		17.3	12.0
Approach LOS	C		C	B

Intersection Summary			
Delay	16.4		
HCM Level of Service	C		
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.91	0.91	
Frt		0.85	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1583	1770	5085	5085	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1583	1770	5085	5085	
Volume (vph)	0	304	365	853	989	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	330	397	927	1075	0
RTOR Reduction (vph)	0	293	0	0	0	0
Lane Group Flow (vph)	0	37	397	927	1075	0
Turn Type		custom	Prot			Perm
Protected Phases	1!		5!	2	6!	
Permitted Phases		4				6
Actuated Green, G (s)		5.6	14.0	36.0	18.0	
Effective Green, g (s)		5.6	14.0	36.0	18.0	
Actuated g/C Ratio		0.11	0.28	0.73	0.36	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		179	500	3691	1845	
v/s Ratio Prot			c0.22	0.18	c0.21	
v/s Ratio Perm		c0.02				
v/c Ratio		0.21	0.79	0.25	0.58	
Uniform Delay, d1		20.0	16.5	2.3	12.8	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6	8.5	0.2	1.4	
Delay (s)		20.6	24.9	2.4	14.1	
Level of Service		C	C	A	B	
Approach Delay (s)	20.6			9.2	14.1	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	49.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	6	143	91	502	121	19	147	1432	537	17	1486	16
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	155	99	546	132	21	160	1557	584	18	1615	17
RTOR Reduction (vph)	0	0	84	0	0	14	0	0	277	0	0	8
Lane Group Flow (vph)	7	155	15	546	132	7	160	1557	307	18	1615	9
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	11.7	11.7	13.9	24.8	24.8	5.0	36.5	36.5	0.8	32.3	32.3
Effective Green, g (s)	0.8	11.7	11.7	13.9	24.8	24.8	5.0	36.5	36.5	0.8	32.3	32.3
Actuated g/C Ratio	0.01	0.15	0.15	0.18	0.31	0.31	0.06	0.46	0.46	0.01	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	35	525	235	605	1112	498	218	2352	732	35	2082	648
v/s Ratio Prot	0.00	c0.04		c0.16	0.04		c0.05	0.31		0.01	c0.32	
v/s Ratio Perm			0.01			0.00			0.19			0.01
v/c Ratio	0.20	0.30	0.06	0.90	0.12	0.01	0.73	0.66	0.42	0.51	0.78	0.01
Uniform Delay, d1	38.7	29.9	28.9	31.8	19.3	18.6	36.3	16.4	14.1	38.9	20.2	13.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8	0.3	0.1	16.7	0.0	0.0	12.0	1.5	1.8	12.2	2.9	0.0
Delay (s)	41.5	30.2	29.0	48.6	19.3	18.6	48.3	17.9	15.9	51.0	23.1	13.9
Level of Service	D	C	C	D	B	B	D	B	B	D	C	B
Approach Delay (s)		30.1			42.2			19.5			23.3	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM Average Control Delay	24.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	78.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Volume (vph)	232	466	408	10	8	233
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	252	507	443	11	9	253
RTOR Reduction (vph)	0	0	0	8	0	203
Lane Group Flow (vph)	252	507	443	3	9	50
Turn Type	Prot			custom		custom
Protected Phases	7	4				
Permitted Phases			8	8	6	6
Actuated Green, G (s)	7.6	22.0	10.4	10.4	7.4	7.4
Effective Green, g (s)	7.6	22.0	10.4	10.4	7.4	7.4
Actuated g/C Ratio	0.20	0.59	0.28	0.28	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	360	2082	984	440	350	313
v/s Ratio Prot	c0.14	0.14				
v/s Ratio Perm			c0.13	0.00	0.01	c0.03
v/c Ratio	0.70	0.24	0.45	0.01	0.03	0.16
Uniform Delay, d1	13.8	3.7	11.1	9.8	12.1	12.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.0	0.1	0.3	0.0	0.0	0.2
Delay (s)	19.9	3.8	11.5	9.8	12.1	12.7
Level of Service	B	A	B	A	B	B
Approach Delay (s)		9.1	11.4		12.6	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	37.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #23 Dante/Polk

Cycle (sec):	100	Critical Vol./Cap.(X):	0.559
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	13.6
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Polk					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0 0	0	0 0	1! 0	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	137	61	0	83	100	47	32	199	90	5	205	63
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	137	61	0	83	100	47	32	199	90	5	205	63
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	137	61	0	83	100	47	32	199	90	5	205	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	149	66	0	90	109	51	35	216	98	5	223	68
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	149	66	0	90	109	51	35	216	98	5	223	68
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	149	66	0	90	109	51	35	216	98	5	223	68
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.69	0.31	0.00	0.36	0.44	0.20	1.00	0.69	0.31	1.00	1.00	1.00
Final Sat.:	365	162	0	199	240	113	504	387	175	491	528	587
Capacity Analysis Module:												
Vol/Sat:	0.41	0.41	xxxx	0.45	0.45	0.45	0.07	0.56	0.56	0.01	0.42	0.12
Crit Moves:	****			****					****		****	
Delay/Veh:	13.1	13.1	0.0	13.4	13.4	13.4	10.0	15.7	15.7	9.7	13.3	9.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.1	13.1	0.0	13.4	13.4	13.4	10.0	15.7	15.7	9.7	13.3	9.1
LOS by Move:	B	B	*	B	B	B	B	C	C	A	B	A
ApproachDel:	13.1			13.4			15.1			12.3		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	13.1			13.4			15.1			12.3		
LOS by Appr:	B			B			C			B		
AllWayAvgQ:	0.6	0.6	0.6	0.7	0.7	0.7	0.1	1.1	1.1	0.0	0.6	0.1

Note: Queue reported is the number of cars per lane.

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86		0.95	0.95		0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.96	
Satd. Flow (prot)	1770	5085	1583	1770	6402		1681	1504		1681	1640	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.74	
Satd. Flow (perm)	1770	5085	1583	1770	6402		1681	1504		1681	1259	
Volume (vph)	15	1994	461	61	2852	18	17	0	57	852	0	121
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	2167	501	66	3100	20	18	0	62	926	0	132
RTOR Reduction (vph)	0	0	200	0	1	0	0	55	0	0	9	0
Lane Group Flow (vph)	16	2167	301	66	3119	0	18	7	0	552	497	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	1.5	52.5	52.5	5.0	56.0		1.9	12.6		35.3	50.0	
Effective Green, g (s)	1.5	52.5	52.5	5.0	56.0		1.9	12.6		35.3	50.0	
Actuated g/C Ratio	0.01	0.44	0.44	0.04	0.47		0.02	0.11		0.30	0.42	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	22	2234	695	74	3000		27	159		497	639	
v/s Ratio Prot	0.01	0.43		c0.04	c0.49		0.01	0.00		c0.33	0.23	
v/s Ratio Perm			0.19					0.00			c0.10	
v/c Ratio	0.73	0.97	0.43	0.89	1.04		0.67	0.04		1.11	0.78	
Uniform Delay, d1	58.8	32.7	23.2	57.0	31.7		58.5	48.0		42.1	30.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	76.4	13.2	2.0	68.6	28.0		48.1	0.1		74.2	6.0	
Delay (s)	135.2	45.9	25.2	125.6	59.7		106.6	48.1		116.3	35.9	
Level of Service	F	D	C	F	E		F	D		F	D	
Approach Delay (s)		42.6			61.1			61.3			77.9	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	56.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	119.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	8	4	1	42	47	15	22	0	53	55	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	9	4	1	46	51	16	24	0	58	60	29
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	308	246	74	240	261	12	89			24		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	308	246	74	240	261	12	89			24		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	100	100	93	95	99			96		
cM capacity (veh/h)	538	624	972	659	613	1065	1504			1589		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	2	9	4	1	46	51	16	12	12	0	58	89
Volume Left	2	0	0	1	0	0	16	0	0	0	58	0
Volume Right	0	0	4	0	0	51	0	0	0	0	0	29
cSH	538	624	972	659	613	1065	1504	1700	1700	1700	1589	1700
Volume to Capacity	0.00	0.01	0.00	0.00	0.07	0.05	0.01	0.01	0.01	0.00	0.04	0.05
Queue Length 95th (ft)	0	1	0	0	6	4	1	0	0	0	3	0
Control Delay (s)	11.7	10.8	8.7	10.5	11.3	8.5	7.4	0.0	0.0	0.0	7.4	0.0
Lane LOS	B	B	A	B	B	A	A				A	
Approach Delay (s)	10.4			9.9			3.0				2.9	
Approach LOS	B			A								

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	21.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0				4.0		4.0
Lane Util. Factor		0.91			0.86	1.00				0.97		0.88
Frt		1.00			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085			6408	1583				3433		2787
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085			6408	1583				3433		2787
Volume (vph)	0	1725	0	0	2706	204	0	0	0	708	0	729
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1875	0	0	2941	222	0	0	0	770	0	792
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	9
Lane Group Flow (vph)	0	1875	0	0	2941	222	0	0	0	770	0	783
Turn Type						Free				custom		custom
Protected Phases		2			6							
Permitted Phases						Free				8		8
Actuated Green, G (s)		26.0			26.0	50.0				16.0		16.0
Effective Green, g (s)		26.0			26.0	50.0				16.0		16.0
Actuated g/C Ratio		0.52			0.52	1.00				0.32		0.32
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		2644			3332	1583				1099		892
v/s Ratio Prot		0.37			c0.46							
v/s Ratio Perm						0.14				0.22		c0.28
v/c Ratio		0.71			0.88	0.14				0.70		0.88
Uniform Delay, d1		9.1			10.6	0.0				14.9		16.1
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		1.6			3.8	0.2				2.0		9.8
Delay (s)		10.8			14.4	0.2				16.9		25.8
Level of Service		B			B	A				B		C
Approach Delay (s)		10.8			13.4			0.0			21.5	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0		4.0			
Lane Util. Factor		0.91	1.00		0.91		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		5085	1583		5085		1770		1583			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		5085	1583		5085		1770		1583			
Volume (vph)	0	2039	382	0	2605	0	122	0	140	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2216	415	0	2832	0	133	0	152	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	2216	415	0	2832	0	133	0	151	0	0	0
Turn Type			Free				custom		custom			
Protected Phases		2			6							
Permitted Phases			Free				4		4			
Actuated Green, G (s)		44.4	62.6		44.4		10.2		10.2			
Effective Green, g (s)		44.4	62.6		44.4		10.2		10.2			
Actuated g/C Ratio		0.71	1.00		0.71		0.16		0.16			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		3607	1583		3607		288		258			
v/s Ratio Prot		0.44			c0.56							
v/s Ratio Perm			0.26				0.08		c0.10			
v/c Ratio		0.61	0.26		0.79		0.46		0.59			
Uniform Delay, d1		4.7	0.0		6.0		23.7		24.2			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		0.8	0.4		1.8		1.2		3.4			
Delay (s)		5.5	0.4		7.8		24.9		27.6			
Level of Service		A	A		A		C		C			
Approach Delay (s)		4.7			7.8			26.3			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	62.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	428	16	527	366	82	689
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	465	17	573	398	89	749

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	483	573	398	89	749
Volume Left (vph)	465	573	0	0	0
Volume Right (vph)	0	0	398	0	749
Hadj (s)	0.23	0.53	-0.67	0.03	-0.67
Departure Headway (s)	7.6	8.1	6.9	7.8	7.1
Degree Utilization, x	1.01	1.29	0.77	0.19	1.47
Capacity (veh/h)	483	451	511	458	514
Control Delay (s)	72.3	171.8	28.0	11.4	239.6
Approach Delay (s)	72.3	112.9		215.3	
Approach LOS	F	F		F	

Intersection Summary			
Delay	141.8		
HCM Level of Service	F		
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	372	397	68	33	425	410	199	1	1	57	1	497
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	404	432	74	36	462	446	216	1	1	62	1	540

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	620	290	498	446	218	603
Volume Left (vph)	404	0	36	0	216	62
Volume Right (vph)	0	74	0	446	1	540
Hadj (s)	0.36	-0.14	0.07	-0.67	0.23	-0.48
Departure Headway (s)	9.2	8.7	8.9	8.2	9.8	8.0
Degree Utilization, x	1.59	0.70	1.23	1.01	0.59	1.34
Capacity (veh/h)	393	404	410	446	360	451
Control Delay (s)	300.9	28.8	150.4	73.8	26.0	190.8
Approach Delay (s)	214.2		114.2		26.0	190.8
Approach LOS	F		F		D	F

Intersection Summary			
Delay	158.3		
HCM Level of Service	F		
Intersection Capacity Utilization	106.5%	ICU Level of Service	G
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #30 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	1.250
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	108.3
Optimal Cycle:	0	Level Of Service:	F

Street Name:	Dante						Bullard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	56	11	9	49	14	47	101	1033	56	56	905	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	56	11	9	49	14	47	101	1033	56	56	905	58
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	56	11	9	49	14	47	101	1033	56	56	905	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	61	12	10	53	15	51	110	1123	61	61	984	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	61	12	10	53	15	51	110	1123	61	61	984	63
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	61	12	10	53	15	51	110	1123	61	61	984	63
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	306	637	339	308	322	344	416	898	483	411	888	476
Capacity Analysis Module:												
Vol/Sat:	0.20	0.02	0.03	0.17	0.05	0.15	0.26	1.25	0.13	0.15	1.11	0.13
Crit Moves:	****			****				****			****	
Delay/Veh:	17.1	14.0	13.4	16.5	14.2	14.7	14.2	155	11.0	12.8	103	11.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.1	14.0	13.4	16.5	14.2	14.7	14.2	155	11.0	12.8	103	11.2
LOS by Move:	C	B	B	C	B	B	B	F	B	B	F	B
ApproachDel:	16.2			15.5			136.0			92.9		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	16.2			15.5			136.0			92.9		
LOS by Appr:	C			C			F			F		
AllWayAvgQ:	0.2	0.0	0.0	0.2	0.0	0.2	0.3	18.0	0.1	0.2	11.4	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3493		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3493		1770	3539	1583	1770	3539	1583
Volume (vph)	320	560	99	55	1190	114	42	773	383	76	1172	132
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	348	609	108	60	1293	124	46	840	416	83	1274	143
RTOR Reduction (vph)	0	0	57	0	6	0	0	0	201	0	0	70
Lane Group Flow (vph)	348	609	51	60	1411	0	46	840	215	83	1274	73
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	20.0	57.2	57.2	4.7	41.9		3.2	34.4	34.4	7.8	39.0	39.0
Effective Green, g (s)	20.0	57.2	57.2	4.7	41.9		3.2	34.4	34.4	7.8	39.0	39.0
Actuated g/C Ratio	0.17	0.48	0.48	0.04	0.35		0.03	0.29	0.29	0.06	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	295	887	754	69	1219		47	1014	453	115	1149	514
v/s Ratio Prot	c0.20	0.33		0.03	c0.40		0.03	0.24		c0.05	c0.36	
v/s Ratio Perm			0.03						0.14			0.05
v/c Ratio	1.18	0.69	0.07	0.87	1.16		0.98	0.83	0.48	0.72	1.11	0.14
Uniform Delay, d1	50.0	24.5	17.0	57.4	39.1		58.4	40.1	35.4	55.1	40.6	28.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	110.2	2.2	0.0	64.4	80.5		122.0	5.7	0.8	19.9	61.6	0.1
Delay (s)	160.3	26.7	17.1	121.8	119.6		180.4	45.8	36.2	75.0	102.2	28.8
Level of Service	F	C	B	F	F		F	D	D	E	F	C
Approach Delay (s)		69.4			119.7			47.5			93.7	
Approach LOS		E			F			D			F	

Intersection Summary			
HCM Average Control Delay	84.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	120.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	103.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88	1.00	0.91		0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	1863	2787	1770	5085		3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	1770	1863	2787	1770	5085		3433	5085	1583
Volume (vph)	211	32	13	5	51	794	26	1415	0	770	1667	308
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	35	14	5	55	863	28	1538	0	837	1812	335
RTOR Reduction (vph)	0	0	11	0	0	57	0	0	0	0	0	92
Lane Group Flow (vph)	229	35	3	5	55	806	28	1538	0	837	1812	243
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.1	17.1	17.1	0.7	6.7	30.0	1.8	32.0		23.3	53.5	64.6
Effective Green, g (s)	11.1	17.1	17.1	0.7	6.7	30.0	1.8	32.0		23.3	53.5	64.6
Actuated g/C Ratio	0.12	0.19	0.19	0.01	0.08	0.34	0.02	0.36		0.26	0.60	0.73
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	428	358	304	14	140	1064	36	1826		898	3053	1219
v/s Ratio Prot	c0.07	0.02		0.00	0.03	c0.20	0.02	c0.30		c0.24	0.36	0.02
v/s Ratio Perm			0.00			0.09						0.13
v/c Ratio	0.54	0.10	0.01	0.36	0.39	0.76	0.78	0.84		0.93	0.59	0.20
Uniform Delay, d1	36.6	29.6	29.1	44.0	39.3	26.3	43.5	26.2		32.1	11.0	3.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	0.0	14.9	1.8	3.1	66.9	3.7		16.0	0.3	0.1
Delay (s)	37.9	29.8	29.2	58.9	41.1	29.4	110.3	30.0		48.2	11.4	4.0
Level of Service	D	C	C	E	D	C	F	C		D	B	A
Approach Delay (s)		36.4			30.3			31.4			20.9	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	89.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	149	9	0	210	1	29	19	0	2	24	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	162	10	0	228	1	32	21	0	2	26	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	229	114	26	205	115	21	27			21		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	229	114	26	205	115	21	27			21		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	79	99	100	70	100	98			100		
cM capacity (veh/h)	548	760	1050	614	759	1057	1587			1595		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	173	229	52	0	28	1
Volume Left	1	0	32	0	2	0
Volume Right	10	1	0	0	0	1
cSH	770	760	1587	1700	1595	1700
Volume to Capacity	0.22	0.30	0.02	0.00	0.00	0.00
Queue Length 95th (ft)	21	32	2	0	0	0
Control Delay (s)	11.0	11.8	4.5	0.0	0.6	0.0
Lane LOS	B	B	A		A	
Approach Delay (s)	11.0	11.8	4.5		0.5	
Approach LOS	B	B				

Intersection Summary			
Average Delay	10.0		
Intersection Capacity Utilization	27.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0				4.0		4.0
Lane Util. Factor		0.95	1.00		0.95	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3539	1583		3539	1583				1770		1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3539	1583		3539	1583				1770		1583
Volume (vph)	0	512	46	0	766	7	0	0	0	357	0	285
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	557	50	0	833	8	0	0	0	388	0	310
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	38
Lane Group Flow (vph)	0	557	50	0	833	8	0	0	0	388	0	272
Turn Type			Free			Free				custom		custom
Protected Phases		4			8							
Permitted Phases			Free			Free				6		6
Actuated Green, G (s)		14.1	40.0		14.1	40.0				17.9		17.9
Effective Green, g (s)		14.1	40.0		14.1	40.0				17.9		17.9
Actuated g/C Ratio		0.35	1.00		0.35	1.00				0.45		0.45
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		1247	1583		1247	1583				792		708
v/s Ratio Prot		0.16			c0.24							
v/s Ratio Perm			0.03			0.01				c0.22		0.17
v/c Ratio		0.45	0.03		0.67	0.01				0.49		0.38
Uniform Delay, d1		10.0	0.0		11.0	0.0				7.8		7.4
Progression Factor		1.00	1.00		1.00	1.00				1.00		1.00
Incremental Delay, d2		0.3	0.0		1.4	0.0				2.2		1.6
Delay (s)		10.2	0.0		12.3	0.0				10.0		9.0
Level of Service		B	A		B	A				A		A
Approach Delay (s)		9.4			12.2			0.0			9.5	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0		4.0			
Lane Util. Factor		0.95	1.00		0.95	1.00	1.00		1.00			
Frt		1.00	0.85		1.00	0.85	1.00		0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3539	1583		3539	1583	1770		1583			
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3539	1583		3539	1583	1770		1583			
Volume (vph)	0	355	32	0	869	915	648	0	259	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	386	35	0	945	995	704	0	282	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	137	0	0	0
Lane Group Flow (vph)	0	386	35	0	945	995	704	0	145	0	0	0
Turn Type			Free			Free	custom		custom			
Protected Phases		4			8							
Permitted Phases			Free			Free	2		2			
Actuated Green, G (s)		15.2	45.0		15.2	45.0	21.8		21.8			
Effective Green, g (s)		15.2	45.0		15.2	45.0	21.8		21.8			
Actuated g/C Ratio		0.34	1.00		0.34	1.00	0.48		0.48			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		1195	1583		1195	1583	857		767			
v/s Ratio Prot		0.11			0.27							
v/s Ratio Perm			0.02			c0.63	c0.40		0.09			
v/c Ratio		0.32	0.02		0.79	0.63	0.82		0.19			
Uniform Delay, d1		11.1	0.0		13.5	0.0	9.9		6.6			
Progression Factor		1.00	1.00		1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.2	0.0		3.7	1.9	8.7		0.5			
Delay (s)		11.2	0.0		17.1	1.9	18.7		7.1			
Level of Service		B	A		B	A	B		A			
Approach Delay (s)		10.3			9.3			15.4			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	5	703	47	493	1368	458	334	241	7	43	594	882
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	764	51	536	1487	498	363	262	8	47	646	959
RTOR Reduction (vph)	0	0	30	0	0	150	0	0	5	0	0	314
Lane Group Flow (vph)	5	764	21	536	1487	348	363	262	3	47	646	645
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	0.8	25.2	25.2	27.0	51.4	51.4	19.0	45.6	45.6	6.2	32.8	32.8
Effective Green, g (s)	0.8	25.2	25.2	27.0	51.4	51.4	19.0	45.6	45.6	6.2	32.8	32.8
Actuated g/C Ratio	0.01	0.21	0.21	0.22	0.43	0.43	0.16	0.38	0.38	0.05	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	12	743	332	398	1516	678	280	1345	602	91	967	433
v/s Ratio Prot	0.00	0.22		c0.30	c0.42		c0.21	0.07		0.03	0.18	
v/s Ratio Perm			0.01			0.22			0.00			c0.41
v/c Ratio	0.42	1.03	0.06	1.35	0.98	0.51	1.30	0.19	0.01	0.52	0.67	1.49
Uniform Delay, d1	59.4	47.4	37.9	46.5	33.8	25.1	50.5	24.9	23.1	55.4	38.8	43.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.8	40.4	0.1	172.0	18.6	0.7	157.2	0.3	0.0	4.9	3.7	232.4
Delay (s)	81.1	87.8	38.0	218.5	52.4	25.8	207.7	25.2	23.1	60.3	42.4	276.0
Level of Service	F	F	D	F	D	C	F	C	C	E	D	F
Approach Delay (s)		84.7			82.5			129.9			178.5	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	116.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	260	1411	192	209	1756	83	373	701	132	315	411	150
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	1534	209	227	1909	90	405	762	143	342	447	163
RTOR Reduction (vph)	0	0	92	0	0	30	0	0	71	0	0	128
Lane Group Flow (vph)	283	1534	117	227	1909	60	405	762	72	342	447	35
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	34.0	34.0	8.0	34.0	34.0	12.8	22.0	22.0	10.0	19.2	19.2
Effective Green, g (s)	8.0	34.0	34.0	8.0	34.0	34.0	12.8	22.0	22.0	10.0	19.2	19.2
Actuated g/C Ratio	0.09	0.38	0.38	0.09	0.38	0.38	0.14	0.24	0.24	0.11	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	305	1921	598	305	1921	598	488	865	387	381	755	338
v/s Ratio Prot	c0.08	0.30		0.07	c0.38		c0.12	c0.22		0.10	0.13	
v/s Ratio Perm			0.07			0.04			0.05			0.02
v/c Ratio	0.93	0.80	0.20	0.74	0.99	0.10	0.83	0.88	0.19	0.90	0.59	0.10
Uniform Delay, d1	40.7	24.9	18.8	40.0	27.9	18.1	37.5	32.7	26.9	39.5	31.9	28.5
Progression Factor	1.00	1.00	1.00	0.79	1.58	2.15	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	32.9	2.4	0.2	0.9	4.8	0.0	11.2	12.5	1.1	22.8	3.4	0.6
Delay (s)	73.6	27.4	19.0	32.6	48.9	39.0	48.7	45.2	28.0	62.3	35.3	29.1
Level of Service	E	C	B	C	D	D	D	D	C	E	D	C
Approach Delay (s)		33.0			46.9			44.4			43.9	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	41.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	470	1478	260	453	1483	175	417	598	205	178	362	556
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	511	1607	283	492	1612	190	453	650	223	193	393	604
RTOR Reduction (vph)	0	0	123	0	0	93	0	0	136	0	0	223
Lane Group Flow (vph)	511	1607	160	492	1612	97	453	650	87	193	393	381
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.0	28.0	28.0	13.0	28.0	28.0	12.0	26.0	26.0	7.0	21.0	21.0
Effective Green, g (s)	13.0	28.0	28.0	13.0	28.0	28.0	12.0	26.0	26.0	7.0	21.0	21.0
Actuated g/C Ratio	0.14	0.31	0.31	0.14	0.31	0.31	0.13	0.29	0.29	0.08	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	496	1582	492	496	1582	492	458	1022	457	267	826	369
v/s Ratio Prot	c0.15	0.32		0.14	c0.32		c0.13	0.18		0.06	0.11	
v/s Ratio Perm			0.10			0.06			0.06			c0.24
v/c Ratio	1.03	1.02	0.32	0.99	1.02	0.20	0.99	0.64	0.19	0.72	0.48	1.03
Uniform Delay, d1	38.5	31.0	23.8	38.4	31.0	22.8	38.9	27.9	24.1	40.6	29.8	34.5
Progression Factor	0.94	1.47	2.43	1.00	1.00	1.00	1.00	1.00	1.00	1.22	1.02	1.07
Incremental Delay, d2	42.9	23.6	0.3	38.2	27.5	0.2	38.8	3.0	0.9	9.1	1.9	54.9
Delay (s)	79.2	69.1	58.0	76.6	58.5	22.9	77.7	30.9	25.0	58.7	32.4	91.8
Level of Service	E	E	E	E	E	C	E	C	C	E	C	F
Approach Delay (s)		70.0			59.4			45.9			66.8	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM Average Control Delay	61.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	245	1302	92	165	1668	125	271	291	92	197	646	7
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	1415	100	179	1813	136	295	316	100	214	702	8
RTOR Reduction (vph)	0	0	62	0	0	55	0	0	77	0	0	5
Lane Group Flow (vph)	266	1415	38	179	1813	81	295	316	23	214	702	3
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	29.2	29.2	7.8	30.0	30.0	8.0	18.3	18.3	8.7	19.0	19.0
Effective Green, g (s)	7.0	29.2	29.2	7.8	30.0	30.0	8.0	18.3	18.3	8.7	19.0	19.0
Actuated g/C Ratio	0.09	0.36	0.36	0.10	0.38	0.38	0.10	0.23	0.23	0.11	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	300	1856	578	335	1907	594	343	810	362	373	841	376
v/s Ratio Prot	c0.08	0.28		0.05	c0.36		c0.09	0.09		0.06	c0.20	
v/s Ratio Perm			0.02			0.05			0.01			0.00
v/c Ratio	0.89	0.76	0.07	0.53	0.95	0.14	0.86	0.39	0.06	0.57	0.83	0.01
Uniform Delay, d1	36.1	22.3	16.5	34.4	24.3	16.5	35.4	26.1	24.1	33.9	29.0	23.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.3	1.9	0.0	1.6	11.1	0.1	19.2	1.4	0.3	2.1	9.6	0.0
Delay (s)	61.4	24.3	16.6	36.0	35.4	16.6	54.6	27.5	24.5	36.0	38.6	23.3
Level of Service	E	C	B	D	D	B	D	C	C	D	D	C
Approach Delay (s)		29.4			34.3			38.3			37.9	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	33.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.93	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3308	
Flt Permitted		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1770		1583	1770	3308	
Volume (vph)	0	1041	70	294	861	0	54	0	564	203	120	92
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1132	76	320	936	0	59	0	613	221	130	100
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	281	0	72	0
Lane Group Flow (vph)	0	1132	50	320	936	0	59	0	332	221	158	0
Turn Type			Perm	Prot			Prot		custom	Prot		
Protected Phases		4		3	8		5			1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		28.0	28.0	16.0	48.0		5.6		19.8	11.0	25.2	
Effective Green, g (s)		28.0	28.0	16.0	48.0		5.6		19.8	11.0	25.2	
Actuated g/C Ratio		0.31	0.31	0.18	0.53		0.06		0.22	0.12	0.28	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1091	488	312	1871		109		345	214	918	
v/s Ratio Prot		c0.32		c0.18	0.26		0.03			c0.12	0.05	
v/s Ratio Perm			0.03						c0.21			
v/c Ratio		1.04	0.10	1.03	0.50		0.54		0.96	1.03	0.17	
Uniform Delay, d1		31.4	22.4	37.4	13.7		41.4		35.1	39.9	24.9	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		37.5	0.1	57.7	0.2		5.4		38.0	70.3	0.4	
Delay (s)		68.9	22.5	95.1	13.9		46.7		73.1	110.2	25.3	
Level of Service		E	C	F	B		D		E	F	C	
Approach Delay (s)		66.0			34.6			70.8			66.9	
Approach LOS		E			C			E			E	

Intersection Summary			
HCM Average Control Delay	56.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	90.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1527	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.54		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1527	1504	1953		1583
Volume (vph)	326	1090	0	0	1050	475	217	105	488	239	0	356
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	354	1185	0	0	1141	516	236	114	530	260	0	387
RTOR Reduction (vph)	0	0	0	0	0	123	0	57	57	0	0	316
Lane Group Flow (vph)	354	1185	0	0	1141	393	236	281	249	260	0	71
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	22.0	61.0			35.0	35.0	21.0	21.0	21.0	16.0		16.0
Effective Green, g (s)	22.0	61.0			35.0	35.0	21.0	21.0	21.0	16.0		16.0
Actuated g/C Ratio	0.20	0.55			0.32	0.32	0.19	0.19	0.19	0.15		0.15
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	354	1963			1126	504	321	292	287	284		230
v/s Ratio Prot	c0.20	0.33			c0.32		0.14	c0.18				
v/s Ratio Perm						0.25			0.17	c0.13		0.04
v/c Ratio	1.00	0.60			1.01	0.78	0.74	0.96	0.87	0.92		0.31
Uniform Delay, d1	44.0	16.4			37.5	34.0	41.9	44.1	43.1	46.3		42.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	47.8	0.5			30.2	7.5	13.9	43.6	27.8	35.5		3.4
Delay (s)	91.8	16.9			67.7	41.5	55.8	87.6	70.9	81.8		45.5
Level of Service	F	B			E	D	E	F	E	F		D
Approach Delay (s)		34.2			59.5			73.3			60.1	
Approach LOS		C			E			E			E	

Intersection Summary			
HCM Average Control Delay	53.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

2019 BASELINE TRAFFIC CONDITION

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	92	29	12	82	284	135
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	100	32	13	89	309	147

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	132	13	89	309	147
Volume Left (vph)	100	0	0	309	0
Volume Right (vph)	0	0	89	0	147
Hadj (s)	0.19	0.03	-0.67	0.53	-0.67
Departure Headway (s)	5.8	5.9	5.2	5.7	4.5
Degree Utilization, x	0.21	0.02	0.13	0.49	0.18
Capacity (veh/h)	589	566	643	619	775
Control Delay (s)	10.3	7.8	7.8	12.8	7.3
Approach Delay (s)	10.3	7.8		11.0	
Approach LOS	B	A		B	

Intersection Summary			
Delay	10.4		
HCM Level of Service	B		
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	173	9	0	33	514	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	188	10	0	36	559	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1067	
pX, platoon unblocked	0.92	0.92	0.92			
vC, conflicting volume	595	559	559			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	559	520	520			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	58	98	100			
cM capacity (veh/h)	451	511	962			

Direction, Lane #	SE 1	SE 2	NE 1	SW 1
Volume Total	188	10	36	559
Volume Left	188	0	0	0
Volume Right	0	10	0	0
cSH	451	511	1700	1700
Volume to Capacity	0.42	0.02	0.02	0.33
Queue Length 95th (ft)	51	1	0	0
Control Delay (s)	18.6	12.2	0.0	0.0
Lane LOS	C	B		
Approach Delay (s)	18.3		0.0	0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	27	509	203	0	0	492
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	553	221	0	0	535
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						573
pX, platoon unblocked	0.88					
vC, conflicting volume	755	221			221	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	721	221			221	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	32			100	
cM capacity (veh/h)	345	819			1349	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	583	221	535
Volume Left	29	0	0
Volume Right	553	0	0
cSH	766	1700	1700
Volume to Capacity	0.76	0.13	0.31
Queue Length 95th (ft)	181	0	0
Control Delay (s)	23.0	0.0	0.0
Lane LOS	C		
Approach Delay (s)	23.0	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	10.0		
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3393		3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3393		3433	5085	1583	1770	3539	1583
Volume (vph)	255	239	137	23	114	43	48	471	179	68	349	452
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	277	260	149	25	124	47	52	512	195	74	379	491
RTOR Reduction (vph)	0	0	112	0	41	0	0	0	129	0	0	302
Lane Group Flow (vph)	277	260	37	25	130	0	52	512	66	74	379	189
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	8.6	14.7	14.7	2.0	8.1		4.2	20.2	20.2	7.1	23.1	23.1
Effective Green, g (s)	8.6	14.7	14.7	2.0	8.1		4.2	20.2	20.2	7.1	23.1	23.1
Actuated g/C Ratio	0.14	0.24	0.24	0.03	0.13		0.07	0.34	0.34	0.12	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	492	867	388	114	458		240	1712	533	209	1363	609
v/s Ratio Prot	c0.08	c0.07		0.01	0.04		0.02	0.10		c0.04	0.11	
v/s Ratio Perm			0.02						0.04			c0.12
v/c Ratio	0.56	0.30	0.09	0.22	0.28		0.22	0.30	0.12	0.35	0.28	0.31
Uniform Delay, d1	23.9	18.5	17.5	28.2	23.3		26.3	14.7	13.8	24.3	12.7	12.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.2	0.1	1.0	0.3		0.5	0.4	0.5	1.0	0.5	1.3
Delay (s)	25.4	18.7	17.6	29.2	23.7		26.8	15.1	14.2	25.4	13.2	14.2
Level of Service	C	B	B	C	C		C	B	B	C	B	B
Approach Delay (s)		21.2			24.4			15.7			14.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Weber/Herndon

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: B[10.4]

Street Name:	Weber						Herndon					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 1! 0 0			0 1 2 0 1			0 1 2 0 1		
Volume Module:												
Base Vol:	0	0	9	0	0	0	77	671	5	5	846	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	9	0	0	0	77	671	5	5	846	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	9	0	0	0	77	671	5	5	846	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	10	0	0	0	84	729	5	5	920	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	10	0	0	0	84	729	5	5	920	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	243	1341	1833	307	920	xxxx	xxxxx	735	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	764	113	77	695	751	xxxx	xxxxx	880	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	764	101	68	695	751	xxxx	xxxxx	880	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.01	0.00	0.00	0.00	0.11	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	9.8	xxxxx	xxxx	xxxxx	10.4	xxxx	xxxxx	9.1	xxxx	xxxxx
LOS by Move:	*	*	A	*	*	*	B	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.4	xxxx	xxxxx	9.1	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	B	*	*	A	*	*
ApproachDel:	9.8			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	A			*			*			*		

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	257	223	283	52	598	190	283	58	138	181	66	257
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	279	242	308	57	650	207	308	63	150	197	72	279
RTOR Reduction (vph)	0	0	204	0	0	164	0	0	112	0	0	225
Lane Group Flow (vph)	279	242	104	57	650	43	308	63	38	197	72	54
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.0	26.9	26.9	3.6	16.5	16.5	18.1	20.3	20.3	13.2	15.4	15.4
Effective Green, g (s)	14.0	26.9	26.9	3.6	16.5	16.5	18.1	20.3	20.3	13.2	15.4	15.4
Actuated g/C Ratio	0.18	0.34	0.34	0.04	0.21	0.21	0.23	0.25	0.25	0.16	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	310	1710	532	80	1049	326	400	473	402	292	359	305
v/s Ratio Prot	c0.16	0.05		0.03	c0.13		c0.17	0.03		0.11	c0.04	
v/s Ratio Perm			0.07			0.03			0.02			0.03
v/c Ratio	0.90	0.14	0.19	0.71	0.62	0.13	0.77	0.13	0.09	0.67	0.20	0.18
Uniform Delay, d1	32.3	18.5	18.9	37.7	28.9	25.9	29.0	23.1	22.8	31.4	27.1	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.3	0.0	0.2	25.8	1.1	0.2	13.3	0.6	0.5	6.0	0.3	0.3
Delay (s)	59.6	18.5	19.0	63.5	30.0	26.1	42.3	23.6	23.3	37.4	27.4	27.3
Level of Service	E	B	B	E	C	C	D	C	C	D	C	C
Approach Delay (s)		32.6			31.2			34.6			30.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91		0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085		3433	1756		3433	1863	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085		3433	1756		3433	1863	
Volume (vph)	50	410	16	160	629	0	47	190	118	50	289	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	446	17	174	684	0	51	207	128	54	314	0
RTOR Reduction (vph)	0	0	13	0	0	0	0	33	0	0	0	0
Lane Group Flow (vph)	54	446	4	174	684	0	51	302	0	54	314	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	2.4	12.6	12.6	4.8	15.0		3.5	23.1		3.5	23.1	
Effective Green, g (s)	2.4	12.6	12.6	4.8	15.0		3.5	23.1		3.5	23.1	
Actuated g/C Ratio	0.04	0.21	0.21	0.08	0.25		0.06	0.38		0.06	0.38	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	137	1068	332	275	1271		200	676		200	717	
v/s Ratio Prot	0.02	0.09		c0.05	c0.13		0.01	c0.17		c0.02	0.17	
v/s Ratio Perm			0.00									
v/c Ratio	0.39	0.42	0.01	0.63	0.54		0.26	0.45		0.27	0.44	
Uniform Delay, d1	28.1	20.5	18.8	26.7	19.5		27.0	13.7		27.0	13.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	0.3	0.0	4.7	0.4		0.7	2.1		0.7	1.9	
Delay (s)	30.0	20.8	18.8	31.4	19.9		27.7	15.8		27.8	15.6	
Level of Service	C	C	B	C	B		C	B		C	B	
Approach Delay (s)		21.7			22.3			17.4			17.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.91		0.97	0.91		0.76
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5085		3433	5085		3610
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5085		3433	5085		3610
Volume (vph)	578	0	824	753	0	941
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	628	0	896	818	0	1023
RTOR Reduction (vph)	0	0	0	0	0	167
Lane Group Flow (vph)	628	0	896	818	0	856
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	13.3		18.7	40.0		18.7
Effective Green, g (s)	13.3		18.7	40.0		18.7
Actuated g/C Ratio	0.33		0.47	1.00		0.47
Clearance Time (s)	4.0		4.0	3.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	1691		1605	5085		1688
v/s Ratio Prot	c0.12		c0.26	0.16		0.24
v/s Ratio Perm						
v/c Ratio	0.37		0.56	0.16		0.51
Uniform Delay, d1	10.2		7.7	0.0		7.4
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.1		0.4	0.0		0.2
Delay (s)	10.3		8.1	0.0		7.7
Level of Service	B		A	A		A
Approach Delay (s)	10.3			4.2	7.7	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1636		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1636		3433	1863	1583
Volume (vph)	6	1454	59	75	1481	132	72	64	280	130	126	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	1580	64	82	1610	143	78	70	304	141	137	26
RTOR Reduction (vph)	0	0	39	0	0	62	0	127	0	0	0	20
Lane Group Flow (vph)	7	1580	25	82	1610	81	78	247	0	141	137	7
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	23.4	23.4	3.2	25.8	25.8	2.4	14.2		3.2	15.0	15.0
Effective Green, g (s)	0.8	23.4	23.4	3.2	25.8	25.8	2.4	14.2		3.2	15.0	15.0
Actuated g/C Ratio	0.01	0.39	0.39	0.05	0.43	0.43	0.04	0.24		0.05	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	46	1983	617	183	2187	681	137	387		183	466	396
v/s Ratio Prot	0.00	0.31		c0.02	c0.32		0.02	c0.15		c0.04	0.07	
v/s Ratio Perm			0.02			0.05						0.00
v/c Ratio	0.15	0.80	0.04	0.45	0.74	0.12	0.57	0.64		0.77	0.29	0.02
Uniform Delay, d1	29.3	16.2	11.3	27.5	14.3	10.3	28.3	20.6		28.0	18.2	16.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.5	2.3	0.0	1.7	1.3	0.1	5.3	7.9		17.9	1.6	0.1
Delay (s)	30.8	18.5	11.4	29.3	15.6	10.3	33.6	28.4		46.0	19.8	17.0
Level of Service	C	B	B	C	B	B	C	C		D	B	B
Approach Delay (s)		18.3			15.8			29.3			31.7	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	303	1570	7	103	1145	165	150	182	180	298	271	379
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	329	1707	8	112	1245	179	163	198	196	324	295	412
RTOR Reduction (vph)	0	0	4	0	0	126	0	0	115	0	0	139
Lane Group Flow (vph)	329	1707	4	112	1245	53	163	198	81	324	295	273
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.0	26.5	26.5	3.2	20.7	20.7	5.1	16.2	16.2	8.1	19.2	19.2
Effective Green, g (s)	9.0	26.5	26.5	3.2	20.7	20.7	5.1	16.2	16.2	8.1	19.2	19.2
Actuated g/C Ratio	0.13	0.38	0.38	0.05	0.30	0.30	0.07	0.23	0.23	0.12	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	441	1925	599	157	1504	468	250	819	366	397	971	434
v/s Ratio Prot	c0.10	c0.34		0.03	0.24		0.05	0.06		c0.09	0.08	
v/s Ratio Perm			0.00			0.03			0.05			c0.17
v/c Ratio	0.75	0.89	0.01	0.71	0.83	0.11	0.65	0.24	0.22	0.82	0.30	0.63
Uniform Delay, d1	29.4	20.3	13.5	32.9	23.0	18.0	31.6	21.9	21.8	30.2	20.1	22.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	5.4	0.0	14.2	3.9	0.1	6.0	0.7	1.4	12.2	0.8	6.7
Delay (s)	36.1	25.7	13.6	47.2	26.9	18.1	37.6	22.6	23.2	42.4	20.9	29.0
Level of Service	D	C	B	D	C	B	D	C	C	D	C	C
Approach Delay (s)		27.3			27.3			27.2			30.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Volume (vph)	16	2040	1	2	1407	50	0	1	0	50	0	6
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	2217	1	2	1529	54	0	1	0	54	0	7
RTOR Reduction (vph)	0	0	0	0	0	18	0	0	0	0	0	6
Lane Group Flow (vph)	17	2217	1	2	1529	36	0	1	0	54	0	1
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	2.6	54.5	54.5	1.2	53.1	53.1		15.1		3.2		12.8
Effective Green, g (s)	2.6	54.5	54.5	1.2	53.1	53.1		15.1		3.2		12.8
Actuated g/C Ratio	0.03	0.61	0.61	0.01	0.59	0.59		0.17		0.04		0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	99	3079	959	46	3000	934		594		122		225
v/s Ratio Prot	c0.00	c0.44		0.00	0.30			0.00		c0.02		
v/s Ratio Perm			0.00			0.02						c0.00
v/c Ratio	0.17	0.72	0.00	0.04	0.51	0.04		0.00		0.44		0.00
Uniform Delay, d1	42.6	12.4	7.0	43.8	10.8	7.7		31.2		42.5		33.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2	0.8	0.8	0.0	0.4	0.1	0.0		0.0		2.6		0.0
Delay (s)	43.5	13.3	7.0	44.2	11.0	7.8		31.2		45.1		33.1
Level of Service	D	B	A	D	B	A		C		D		C
Approach Delay (s)		13.5			10.9			31.2			43.7	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	91	1908	280	337	1283	27	147	92	511	87	112	63
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	2074	304	366	1395	29	160	100	555	95	122	68
RTOR Reduction (vph)	0	0	92	0	0	9	0	0	239	0	0	57
Lane Group Flow (vph)	99	2074	212	366	1395	20	160	100	316	95	122	11
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.4	44.0	44.0	22.0	55.6	55.6	10.0	22.0	22.0	6.0	18.0	18.0
Effective Green, g (s)	10.4	44.0	44.0	22.0	55.6	55.6	10.0	22.0	22.0	6.0	18.0	18.0
Actuated g/C Ratio	0.09	0.40	0.40	0.20	0.51	0.51	0.09	0.20	0.20	0.05	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	167	2034	633	354	2570	800	161	373	317	97	305	259
v/s Ratio Prot	0.06	c0.41		c0.21	0.27		c0.09	0.05		0.05	0.07	
v/s Ratio Perm			0.13			0.01			c0.20			0.01
v/c Ratio	0.59	1.02	0.34	1.03	0.54	0.03	0.99	0.27	1.00	0.98	0.40	0.04
Uniform Delay, d1	47.8	33.0	22.9	44.0	18.5	13.6	50.0	37.2	44.0	51.9	41.2	38.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	25.1	0.3	56.9	0.2	0.0	68.8	1.8	49.6	83.7	3.9	0.3
Delay (s)	53.3	58.1	23.2	100.9	18.8	13.6	118.7	39.0	93.6	135.7	45.0	39.1
Level of Service	D	E	C	F	B	B	F	D	F	F	D	D
Approach Delay (s)		53.6			35.5			91.8			73.8	
Approach LOS		D			D			F			E	

Intersection Summary			
HCM Average Control Delay	54.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	139	2170	395	202	1440	223	136	182	243	155	186	153
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	151	2359	429	220	1565	242	148	198	264	168	202	166
RTOR Reduction (vph)	0	0	60	0	0	50	0	0	113	0	0	121
Lane Group Flow (vph)	151	2359	369	220	1565	192	148	198	151	168	202	45
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.7	44.0	44.0	7.0	43.3	43.3	5.0	18.0	18.0	5.0	18.0	18.0
Effective Green, g (s)	7.7	44.0	44.0	7.0	43.3	43.3	5.0	18.0	18.0	5.0	18.0	18.0
Actuated g/C Ratio	0.09	0.49	0.49	0.08	0.48	0.48	0.06	0.20	0.20	0.06	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	294	2486	774	267	2446	762	191	708	317	191	708	317
v/s Ratio Prot	0.04	c0.46		c0.06	0.31		0.04	0.06		c0.05	0.06	
v/s Ratio Perm			0.23			0.12			c0.10			0.03
v/c Ratio	0.51	0.95	0.48	0.82	0.64	0.25	0.77	0.28	0.48	0.88	0.29	0.14
Uniform Delay, d1	39.4	21.9	15.3	40.9	17.5	13.8	41.9	30.5	31.8	42.2	30.5	29.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	8.8	0.5	18.3	0.6	0.2	17.6	1.0	5.1	33.6	1.0	0.9
Delay (s)	40.9	30.7	15.8	59.2	18.1	14.0	59.6	31.5	36.9	75.8	31.6	30.6
Level of Service	D	C	B	E	B	B	E	C	D	E	C	C
Approach Delay (s)		29.1			22.0			40.6			45.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	29.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	59	2329	232	102	1776	234	77	118	300	225	218	43
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	2532	252	111	1930	254	84	128	326	245	237	47
RTOR Reduction (vph)	0	0	88	0	0	84	0	0	73	0	0	34
Lane Group Flow (vph)	64	2532	164	111	1930	170	84	128	253	245	237	13
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	49.8	49.8	4.0	49.8	49.8	4.0	17.8	17.8	14.0	27.8	27.8
Effective Green, g (s)	4.0	49.8	49.8	4.0	49.8	49.8	4.0	17.8	17.8	14.0	27.8	27.8
Actuated g/C Ratio	0.04	0.49	0.49	0.04	0.49	0.49	0.04	0.18	0.18	0.14	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	135	2492	776	135	2492	776	135	620	277	244	1391	433
v/s Ratio Prot	0.02	c0.50		c0.03	0.38		0.02	0.04		c0.14	0.05	
v/s Ratio Perm			0.10			0.11			c0.16			0.01
v/c Ratio	0.47	1.02	0.21	0.82	0.77	0.22	0.62	0.21	0.91	1.00	0.17	0.03
Uniform Delay, d1	47.8	25.9	14.7	48.4	21.3	14.8	48.1	35.9	41.2	43.8	28.1	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	22.1	0.1	31.5	1.6	0.1	8.6	0.8	36.0	58.7	0.3	0.1
Delay (s)	50.4	48.0	14.9	79.9	22.8	14.9	56.7	36.6	77.2	102.5	28.4	27.2
Level of Service	D	D	B	E	C	B	E	D	E	F	C	C
Approach Delay (s)		45.2			24.7			64.3			62.6	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM Average Control Delay	40.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	101.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Volume (vph)	747	2076	104	225	1142	338	130	1043	127	143	1060	725
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	812	2257	113	245	1241	367	141	1134	138	155	1152	788
RTOR Reduction (vph)	0	0	35	0	0	66	0	0	95	0	0	303
Lane Group Flow (vph)	812	2257	78	245	1241	301	141	1134	43	155	1152	485
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	29.0	51.0	51.0	9.0	31.0	31.0	5.0	37.0	37.0	7.0	39.0	39.0
Effective Green, g (s)	29.0	51.0	51.0	9.0	31.0	31.0	5.0	37.0	37.0	7.0	39.0	39.0
Actuated g/C Ratio	0.24	0.42	0.42	0.08	0.26	0.26	0.04	0.31	0.31	0.06	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	830	2161	673	257	1314	409	143	1568	488	200	1150	514
v/s Ratio Prot	c0.24	c0.44		0.07	0.24		0.04	0.22		c0.05	c0.33	
v/s Ratio Perm			0.05			0.19			0.03			0.31
v/c Ratio	0.98	1.04	0.12	0.95	0.94	0.74	0.99	0.72	0.09	0.78	1.00	0.94
Uniform Delay, d1	45.2	34.5	20.9	55.3	43.7	40.8	57.5	36.9	29.5	55.7	40.5	39.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.7	32.2	0.1	43.1	13.6	6.8	70.4	2.9	0.4	16.9	27.0	27.9
Delay (s)	70.8	66.7	20.9	98.4	57.3	47.5	127.9	39.9	29.8	72.7	67.5	67.3
Level of Service	E	E	C	F	E	D	F	D	C	E	E	E
Approach Delay (s)		66.1			60.8			47.7			67.8	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM Average Control Delay	62.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	270	1689	155	170	1463	449	22	336	78	187	703	152
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	293	1836	168	185	1590	488	24	365	85	203	764	165
RTOR Reduction (vph)	0	0	97	0	0	177	0	0	62	0	0	113
Lane Group Flow (vph)	293	1836	71	185	1590	311	24	365	23	203	764	52
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	27.0	27.0	5.0	25.0	25.0	1.6	19.4	19.4	5.0	22.8	22.8
Effective Green, g (s)	7.0	27.0	27.0	5.0	25.0	25.0	1.6	19.4	19.4	5.0	22.8	22.8
Actuated g/C Ratio	0.10	0.37	0.37	0.07	0.35	0.35	0.02	0.27	0.27	0.07	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	332	1896	590	237	1756	547	76	1363	424	237	1601	499
v/s Ratio Prot	c0.09	c0.36		0.05	0.31		0.01	0.07		c0.06	c0.15	
v/s Ratio Perm			0.04			0.20			0.01			0.03
v/c Ratio	0.88	0.97	0.12	0.78	0.91	0.57	0.32	0.27	0.05	0.86	0.48	0.10
Uniform Delay, d1	32.3	22.3	14.9	33.2	22.6	19.3	34.9	20.9	19.7	33.3	20.0	17.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.9	13.8	0.1	15.3	7.1	1.4	2.4	0.5	0.2	24.9	1.0	0.4
Delay (s)	55.2	36.1	15.0	48.4	29.6	20.7	37.2	21.4	19.9	58.2	21.0	18.0
Level of Service	E	D	B	D	C	C	D	C	B	E	C	B
Approach Delay (s)		37.0			29.2			21.9			27.2	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	72.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	464	73	0	0	104	171
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	504	79	0	0	113	186
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			584		504	504
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			584		504	504
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		79	67
cM capacity (veh/h)			991		527	568

Direction, Lane #	EB 1	EB 2	NB 1
Volume Total	504	79	299
Volume Left	0	0	113
Volume Right	0	79	186
cSH	1700	1700	913
Volume to Capacity	0.30	0.05	0.33
Queue Length 95th (ft)	0	0	36
Control Delay (s)	0.0	0.0	14.1
Lane LOS			B
Approach Delay (s)	0.0		14.1
Approach LOS			B

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	160	0	297	167	1	356
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	174	0	323	182	1	387
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			174		1001	174
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			174		1001	174
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			77		99	55
cM capacity (veh/h)			1403		207	870

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SW 1
Volume Total	174	0	323	182	388
Volume Left	0	0	323	0	1
Volume Right	0	0	0	0	387
cSH	1700	1700	1403	1700	872
Volume to Capacity	0.10	0.00	0.23	0.11	0.45
Queue Length 95th (ft)	0	0	22	0	58
Control Delay (s)	0.0	0.0	8.3	0.0	12.4
Lane LOS			A		B
Approach Delay (s)	0.0		5.3		12.4
Approach LOS					B

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	219	253	198	252	148	219
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	238	275	215	274	161	238

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	238	275	489	399
Volume Left (vph)	238	0	0	161
Volume Right (vph)	0	275	274	0
Hadj (s)	0.53	-0.67	-0.30	0.11
Departure Headway (s)	7.6	6.3	5.8	6.3
Degree Utilization, x	0.50	0.48	0.79	0.70
Capacity (veh/h)	451	543	599	550
Control Delay (s)	16.6	13.9	27.2	23.0
Approach Delay (s)	15.2		27.2	23.0
Approach LOS	C		D	C

Intersection Summary			
Delay	21.6		
HCM Level of Service	C		
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.91	0.91	
Frt		0.85	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1583	1770	5085	5085	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1583	1770	5085	5085	
Volume (vph)	0	290	243	941	824	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	315	264	1023	896	0
RTOR Reduction (vph)	0	276	0	0	0	0
Lane Group Flow (vph)	0	39	264	1023	896	0
Turn Type		custom	Prot			Perm
Protected Phases	1!		5!	2	6!	
Permitted Phases		4				6
Actuated Green, G (s)		5.6	9.8	31.6	17.8	
Effective Green, g (s)		5.6	9.8	31.6	17.8	
Actuated g/C Ratio		0.12	0.22	0.70	0.39	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		196	384	3555	2003	
v/s Ratio Prot			c0.15	0.20	c0.18	
v/s Ratio Perm		c0.02				
v/c Ratio		0.20	0.69	0.29	0.45	
Uniform Delay, d1		17.8	16.3	2.6	10.1	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.5	5.1	0.2	0.7	
Delay (s)		18.3	21.3	2.8	10.8	
Level of Service		B	C	A	B	
Approach Delay (s)	18.3			6.6	10.8	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	18	94	122	174	56	13	89	1359	242	27	1308	5
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	102	133	189	61	14	97	1477	263	29	1422	5
RTOR Reduction (vph)	0	0	113	0	0	11	0	0	137	0	0	3
Lane Group Flow (vph)	20	102	20	189	61	3	97	1477	126	29	1422	2
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	8.7	8.7	4.3	12.2	12.2	3.3	28.2	28.2	1.6	26.5	26.5
Effective Green, g (s)	0.8	8.7	8.7	4.3	12.2	12.2	3.3	28.2	28.2	1.6	26.5	26.5
Actuated g/C Ratio	0.01	0.15	0.15	0.07	0.21	0.21	0.06	0.48	0.48	0.03	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	47	524	234	251	734	328	193	2439	759	93	2292	713
v/s Ratio Prot	0.01	c0.03		c0.06	c0.02		c0.03	c0.29		0.01	0.28	
v/s Ratio Perm			0.01			0.00			0.08			0.00
v/c Ratio	0.43	0.19	0.08	0.75	0.08	0.01	0.50	0.61	0.17	0.31	0.62	0.00
Uniform Delay, d1	28.8	22.0	21.6	26.7	18.8	18.5	27.0	11.2	8.7	28.1	12.3	8.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.1	0.2	0.2	12.0	0.0	0.0	2.1	1.1	0.5	1.9	1.3	0.0
Delay (s)	34.9	22.2	21.8	38.8	18.8	18.5	29.0	12.3	9.1	30.0	13.6	8.9
Level of Service	C	C	C	D	B	B	C	B	A	C	B	A
Approach Delay (s)		23.0			33.1			12.8			13.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	58.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Volume (vph)	101	260	104	3	10	139
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	283	113	3	11	151
RTOR Reduction (vph)	0	0	0	2	0	99
Lane Group Flow (vph)	110	283	113	1	11	52
Turn Type	Prot			custom		custom
Protected Phases	7	4				
Permitted Phases			8	8	6	6
Actuated Green, G (s)	3.4	13.3	5.9	5.9	11.1	11.1
Effective Green, g (s)	3.4	13.3	5.9	5.9	11.1	11.1
Actuated g/C Ratio	0.10	0.41	0.18	0.18	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	186	1453	644	288	606	542
v/s Ratio Prot	c0.06	c0.08				
v/s Ratio Perm			0.03	0.00	0.01	c0.03
v/c Ratio	0.59	0.19	0.18	0.00	0.02	0.10
Uniform Delay, d1	13.8	6.1	11.2	10.8	7.0	7.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	0.1	0.1	0.0	0.0	0.1
Delay (s)	18.8	6.2	11.3	10.8	7.1	7.3
Level of Service	B	A	B	B	A	A
Approach Delay (s)		9.7	11.3		7.3	
Approach LOS		A	B		A	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	32.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	22.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #23 Dante/Polk

Cycle (sec):	100	Critical Vol./Cap.(X):	0.533
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	13.4
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Polk					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	105	143	13	92	40	25	48	154	103	16	139	70
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	105	143	13	92	40	25	48	154	103	16	139	70
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	105	143	13	92	40	25	48	154	103	16	139	70
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	114	155	14	100	43	27	52	167	112	17	151	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	155	14	100	43	27	52	167	112	17	151	76
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	114	155	14	100	43	27	52	167	112	17	151	76
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.40	0.55	0.05	0.70	0.30	1.00	1.00	0.60	0.40	1.00	1.00	1.00
Final Sat.:	214	292	27	337	147	560	504	341	228	462	495	546
Capacity Analysis Module:												
Vol/Sat:	0.53	0.53	0.53	0.30	0.30	0.05	0.10	0.49	0.49	0.04	0.31	0.14
Crit Moves:	****			****					****		****	
Delay/Veh:	16.1	16.1	16.1	12.3	12.3	8.9	10.3	14.0	14.0	10.3	12.3	9.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.1	16.1	16.1	12.3	12.3	8.9	10.3	14.0	14.0	10.3	12.3	9.8
LOS by Move:	C	C	C	B	B	A	B	B	B	B	B	A
ApproachDel:	16.1			11.8			13.4			11.4		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	16.1			11.8			13.4			11.4		
LOS by Appr:	C			B			B			B		
AllWayAvgQ:	1.0	1.0	1.0	0.4	0.4	0.0	0.1	0.8	0.8	0.0	0.4	0.1

Note: Queue reported is the number of cars per lane.

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86		0.95	0.95		0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.97	
Satd. Flow (prot)	1770	5085	1583	1770	6406		1681	1504		1681	1619	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.84	
Satd. Flow (perm)	1770	5085	1583	1770	6406		1681	1504		1681	1398	
Volume (vph)	19	1623	709	52	1832	4	4	0	22	284	0	67
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	1764	771	57	1991	4	4	0	24	309	0	73
RTOR Reduction (vph)	0	0	433	0	1	0	0	22	0	0	21	0
Lane Group Flow (vph)	21	1764	338	57	1994	0	4	2	0	188	173	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	1.5	32.0	32.0	2.3	32.8		0.7	5.9		17.6	26.8	
Effective Green, g (s)	1.5	32.0	32.0	2.3	32.8		0.7	5.9		17.6	26.8	
Actuated g/C Ratio	0.02	0.44	0.44	0.03	0.45		0.01	0.08		0.24	0.37	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	36	2226	693	56	2874		16	121		405	566	
v/s Ratio Prot	0.01	c0.35		c0.03	0.31		0.00	0.00		c0.11	0.07	
v/s Ratio Perm			0.21					0.00			c0.04	
v/c Ratio	0.58	0.79	0.49	1.02	0.69		0.25	0.02		0.46	0.31	
Uniform Delay, d1	35.5	17.7	14.7	35.4	16.1		35.9	30.9		23.7	16.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	21.8	3.0	2.4	125.4	1.4		8.1	0.1		0.8	0.3	
Delay (s)	57.3	20.7	17.1	160.8	17.5		44.0	31.0		24.6	16.8	
Level of Service	E	C	B	F	B		D	C		C	B	
Approach Delay (s)		19.9			21.5			32.8			20.6	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	73.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	10	8	1	12	170	12	45	0	56	17	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	11	9	1	13	185	13	49	0	61	18	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	384	217	20	229	218	24	22			49		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	384	217	20	229	218	24	22			49		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	98	99	100	98	82	99			96		
cM capacity (veh/h)	429	648	1053	667	647	1046	1592			1556		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	5	11	9	1	13	185	13	24	24	0	61	22
Volume Left	5	0	0	1	0	0	13	0	0	0	61	0
Volume Right	0	0	9	0	0	185	0	0	0	0	0	3
cSH	429	648	1053	667	647	1046	1592	1700	1700	1700	1556	1700
Volume to Capacity	0.01	0.02	0.01	0.00	0.02	0.18	0.01	0.01	0.01	0.00	0.04	0.01
Queue Length 95th (ft)	1	1	1	0	2	16	1	0	0	0	3	0
Control Delay (s)	13.5	10.6	8.4	10.4	10.7	9.2	7.3	0.0	0.0	0.0	7.4	0.0
Lane LOS	B	B	A	B	B	A	A				A	
Approach Delay (s)	10.5			9.3			1.5				5.5	
Approach LOS	B			A								

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0				4.0		4.0
Lane Util. Factor		0.91			0.86	1.00				0.97		0.88
Frt		1.00			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085			6408	1583				3433		2787
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085			6408	1583				3433		2787
Volume (vph)	0	1932	0	0	1749	105	0	0	0	272	0	415
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2100	0	0	1901	114	0	0	0	296	0	451
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	5
Lane Group Flow (vph)	0	2100	0	0	1901	114	0	0	0	296	0	446
Turn Type						Free				custom		custom
Protected Phases		2			6							
Permitted Phases						Free				8		8
Actuated Green, G (s)		26.1			26.1	46.8				12.7		12.7
Effective Green, g (s)		26.1			26.1	46.8				12.7		12.7
Actuated g/C Ratio		0.56			0.56	1.00				0.27		0.27
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		2836			3574	1583				932		756
v/s Ratio Prot		c0.41			0.30							
v/s Ratio Perm						0.07				0.09		c0.16
v/c Ratio		0.74			0.53	0.07				0.32		0.59
Uniform Delay, d1		7.8			6.5	0.0				13.6		14.8
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		1.8			0.6	0.1				0.2		1.2
Delay (s)		9.6			7.1	0.1				13.8		16.0
Level of Service		A			A	A				B		B
Approach Delay (s)		9.6			6.7			0.0			15.1	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	46.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0		4.0			
Lane Util. Factor		0.91	1.00		0.91		1.00		1.00			
Frt		1.00	0.85		0.95		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		5085	1583		4818		1770		1583			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		5085	1583		4818		1770		1583			
Volume (vph)	0	2075	480	0	1312	709	54	0	86	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2255	522	0	1426	771	59	0	93	0	0	0
RTOR Reduction (vph)	0	0	0	0	99	0	0	0	32	0	0	0
Lane Group Flow (vph)	0	2255	522	0	2098	0	59	0	61	0	0	0
Turn Type			Free				custom		custom			
Protected Phases		2			6							
Permitted Phases			Free				4		4			
Actuated Green, G (s)		50.5	66.8		50.5		8.3		8.3			
Effective Green, g (s)		50.5	66.8		50.5		8.3		8.3			
Actuated g/C Ratio		0.76	1.00		0.76		0.12		0.12			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		3844	1583		3642		220		197			
v/s Ratio Prot		c0.44			0.44							
v/s Ratio Perm			c0.33				0.03		0.04			
v/c Ratio		0.59	0.33		0.58		0.27		0.31			
Uniform Delay, d1		3.6	0.0		3.5		26.5		26.6			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		0.7	0.6		0.7		0.7		0.9			
Delay (s)		4.2	0.6		4.2		27.2		27.6			
Level of Service		A	A		A		C		C			
Approach Delay (s)		3.5			4.2			27.4			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	4.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	66.8	Sum of lost time (s)	4.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	215	172	515	190	74	628
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	234	187	560	207	80	683

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	234	187	560	207	80	683
Volume Left (vph)	234	0	560	0	0	0
Volume Right (vph)	0	0	0	207	0	683
Hadj (s)	0.53	0.03	0.53	-0.67	0.03	-0.67
Departure Headway (s)	8.2	7.7	7.9	6.7	7.5	6.8
Degree Utilization, x	0.53	0.40	1.22	0.38	0.17	1.29
Capacity (veh/h)	424	460	466	533	471	539
Control Delay (s)	19.1	14.6	141.9	12.5	10.8	163.6
Approach Delay (s)	17.1		107.1		147.5	
Approach LOS	C		F		F	

Intersection Summary			
Delay	103.5		
HCM Level of Service	F		
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	602	509	68	20	157	111	42	1	8	340	17	320
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	654	553	74	22	171	121	46	1	9	370	18	348

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	931	351	192	121	55	736
Volume Left (vph)	654	0	22	0	46	370
Volume Right (vph)	0	74	0	121	9	348
Hadj (s)	0.39	-0.11	0.09	-0.67	0.10	-0.15
Departure Headway (s)	7.7	7.2	8.0	7.3	8.5	6.5
Degree Utilization, x	1.98	0.70	0.43	0.24	0.13	1.33
Capacity (veh/h)	477	493	441	485	411	543
Control Delay (s)	465.5	23.8	15.8	11.4	12.7	180.5
Approach Delay (s)	344.7		14.1		12.7	180.5
Approach LOS	F		B		B	F

Intersection Summary			
Delay	243.0		
HCM Level of Service	F		
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #30 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	1.067
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	54.9
Optimal Cycle:	0	Level Of Service:	F

Street Name:	Dante						Bullard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	166	11	18	106	13	47	17	853	36	25	544	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	166	11	18	106	13	47	17	853	36	25	544	29
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	166	11	18	106	13	47	17	853	36	25	544	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	180	12	20	115	14	51	18	927	39	27	591	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	12	20	115	14	51	18	927	39	27	591	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	180	12	20	115	14	51	18	927	39	27	591	32
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	333	687	368	326	338	363	389	869	447	378	817	433
Capacity Analysis Module:												
Vol/Sat:	0.54	0.02	0.05	0.35	0.04	0.14	0.05	1.07	0.09	0.07	0.72	0.07
Crit Moves:	****			****				****			****	
Delay/Veh:	24.4	12.9	12.5	18.8	13.3	13.6	11.9	90.5	11.0	12.6	30.8	11.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.4	12.9	12.5	18.8	13.3	13.6	11.9	90.5	11.0	12.6	30.8	11.4
LOS by Move:	C	B	B	C	B	B	B	F	B	B	D	B
ApproachDel:	22.6			16.9			85.8			29.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	22.6			16.9			85.8			29.1		
LOS by Appr:	C			C			F			D		
AllWayAvgQ:	1.0	0.0	0.1	0.5	0.0	0.1	0.0	9.6	0.1	0.1	2.2	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3494		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3494		1770	3539	1583	1770	3539	1583
Volume (vph)	142	903	79	193	731	68	43	671	58	41	612	135
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	154	982	86	210	795	74	47	729	63	45	665	147
RTOR Reduction (vph)	0	0	31	0	6	0	0	0	50	0	0	116
Lane Group Flow (vph)	154	982	55	210	863	0	47	729	13	45	665	31
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.8	55.1	55.1	12.0	53.3		3.2	23.0	23.0	3.2	23.0	23.0
Effective Green, g (s)	13.8	55.1	55.1	12.0	53.3		3.2	23.0	23.0	3.2	23.0	23.0
Actuated g/C Ratio	0.13	0.50	0.50	0.11	0.49		0.03	0.21	0.21	0.03	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	223	939	798	194	1704		52	745	333	52	745	333
v/s Ratio Prot	0.09	c0.53		c0.12	0.25		c0.03	c0.21		0.03	0.19	
v/s Ratio Perm			0.03						0.01			0.02
v/c Ratio	0.69	1.05	0.07	1.08	0.51		0.90	0.98	0.04	0.87	0.89	0.09
Uniform Delay, d1	45.7	27.1	13.9	48.6	19.0		52.9	42.9	34.4	52.8	41.9	34.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.9	42.1	0.0	88.3	0.2		89.2	27.4	0.0	76.4	13.0	0.1
Delay (s)	54.6	69.2	14.0	136.9	19.3		142.1	70.3	34.4	129.2	55.0	34.9
Level of Service	D	E	B	F	B		F	E	C	F	D	C
Approach Delay (s)		63.4			42.2			71.6			55.4	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM Average Control Delay	57.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	109.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00		1.00	0.88	1.00	0.91		0.97	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583		1863	2787	1770	5085		3433	5085	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583		1863	2787	1770	5085		3433	5085	1583
Volume (vph)	252	27	9	0	16	748	9	1554	0	357	881	161
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	274	29	10	0	17	813	10	1689	0	388	958	175
RTOR Reduction (vph)	0	0	8	0	0	21	0	0	0	0	0	35
Lane Group Flow (vph)	274	29	2	0	17	792	10	1689	0	388	958	140
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	12.2	18.7	18.7		2.5	26.3	0.6	41.2		23.8	64.4	76.6
Effective Green, g (s)	12.2	18.7	18.7		2.5	26.3	0.6	41.2		23.8	64.4	76.6
Actuated g/C Ratio	0.13	0.20	0.20		0.03	0.27	0.01	0.43		0.25	0.67	0.80
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	438	364	309		49	882	11	2189		854	3422	1333
v/s Ratio Prot	c0.08	0.02			0.01	c0.22	0.01	c0.33		0.11	0.19	0.01
v/s Ratio Perm			0.00			0.06						0.08
v/c Ratio	0.63	0.08	0.01		0.35	0.90	0.91	0.77		0.45	0.28	0.11
Uniform Delay, d1	39.6	31.5	31.0		45.8	33.4	47.5	23.2		30.4	6.3	2.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.8	0.1	0.0		4.2	11.8	217.6	1.7		0.4	0.0	0.0
Delay (s)	42.4	31.6	31.0		50.0	45.2	265.1	25.0		30.8	6.4	2.1
Level of Service	D	C	C		D	D	F	C		C	A	A
Approach Delay (s)		41.0			45.3			26.4			12.1	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	95.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	302	26	3	98	2	14	29	4	1	13	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	328	28	3	107	2	15	32	4	1	14	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	134	83	14	271	84	32	20			36		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	134	83	14	271	84	32	20			36		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	59	97	99	87	100	99			100		
cM capacity (veh/h)	745	799	1066	448	798	1042	1597			1575		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	362	112	47	4	15	5
Volume Left	5	3	15	0	1	0
Volume Right	28	2	0	4	0	5
cSH	814	784	1597	1700	1575	1700
Volume to Capacity	0.44	0.14	0.01	0.00	0.00	0.00
Queue Length 95th (ft)	58	12	1	0	0	0
Control Delay (s)	12.9	10.4	2.4	0.0	0.5	0.0
Lane LOS	B	B	A		A	
Approach Delay (s)	12.9	10.4	2.2		0.4	
Approach LOS	B	B				

Intersection Summary			
Average Delay	10.9		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0					4.0		4.0
Lane Util. Factor		0.95	1.00		0.95					1.00		1.00
Frt		1.00	0.85		1.00					1.00		0.85
Flt Protected		1.00	1.00		1.00					0.95		1.00
Satd. Flow (prot)		3539	1583		3539					1770		1583
Flt Permitted		1.00	1.00		1.00					0.95		1.00
Satd. Flow (perm)		3539	1583		3539					1770		1583
Volume (vph)	0	606	66	0	722	0	0	0	0	321	0	142
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	659	72	0	785	0	0	0	0	349	0	154
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	45
Lane Group Flow (vph)	0	659	72	0	785	0	0	0	0	349	0	109
Turn Type			Free			Free				custom		custom
Protected Phases		4			8							
Permitted Phases			Free			Free				6		6
Actuated Green, G (s)		14.3	40.0		14.3					17.7		17.7
Effective Green, g (s)		14.3	40.0		14.3					17.7		17.7
Actuated g/C Ratio		0.36	1.00		0.36					0.44		0.44
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		1265	1583		1265					783		700
v/s Ratio Prot		0.19			c0.22							
v/s Ratio Perm			0.05							c0.20		0.07
v/c Ratio		0.52	0.05		0.62					0.45		0.16
Uniform Delay, d1		10.1	0.0		10.6					7.7		6.7
Progression Factor		1.00	1.00		1.26					1.00		1.00
Incremental Delay, d2		0.4	0.1		0.6					1.8		0.5
Delay (s)		10.5	0.1		14.0					9.6		7.2
Level of Service		B	A		B					A		A
Approach Delay (s)		9.5			14.0			0.0			8.8	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0		4.0			
Lane Util. Factor		0.95	1.00		0.95	1.00	1.00		1.00			
Frt		1.00	0.85		1.00	0.85	1.00		0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3539	1583		3539	1583	1770		1583			
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3539	1583		3539	1583	1770		1583			
Volume (vph)	0	543	27	0	916	478	581	0	119	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	590	29	0	996	520	632	0	129	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	74	0	0	0
Lane Group Flow (vph)	0	590	29	0	996	520	632	0	55	0	0	0
Turn Type			Free			Free	custom		custom			
Protected Phases		4			8							
Permitted Phases			Free			Free	2		2			
Actuated Green, G (s)		15.1	40.0		15.1	40.0	16.9		16.9			
Effective Green, g (s)		15.1	40.0		15.1	40.0	16.9		16.9			
Actuated g/C Ratio		0.38	1.00		0.38	1.00	0.42		0.42			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		1336	1583		1336	1583	748		669			
v/s Ratio Prot		0.17			c0.28							
v/s Ratio Perm			0.02			0.33	c0.36		0.03			
v/c Ratio		0.44	0.02		0.75	0.33	0.84		0.08			
Uniform Delay, d1		9.3	0.0		10.8	0.0	10.4		6.9			
Progression Factor		1.00	1.00		1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.2	0.0		2.3	0.6	11.3		0.2			
Delay (s)		9.5	0.0		13.1	0.6	21.7		7.1			
Level of Service		A	A		B	A	C		A			
Approach Delay (s)		9.1			8.8			19.2			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	5	580	37	362	843	132	548	363	3	16	225	582
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	630	40	393	916	143	596	395	3	17	245	633
RTOR Reduction (vph)	0	0	29	0	0	70	0	0	2	0	0	293
Lane Group Flow (vph)	5	630	11	393	916	73	596	395	1	17	245	340
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	0.8	23.2	23.2	25.0	47.4	47.4	37.0	53.8	53.8	2.0	18.8	18.8
Effective Green, g (s)	0.8	23.2	23.2	25.0	47.4	47.4	37.0	53.8	53.8	2.0	18.8	18.8
Actuated g/C Ratio	0.01	0.19	0.19	0.21	0.39	0.39	0.31	0.45	0.45	0.02	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	12	684	306	369	1398	625	546	1587	710	30	554	248
v/s Ratio Prot	0.00	c0.18		c0.22	0.26		c0.34	0.11		0.01	0.07	
v/s Ratio Perm			0.01			0.05			0.00			c0.21
v/c Ratio	0.42	0.92	0.04	1.07	0.66	0.12	1.09	0.25	0.00	0.57	0.44	1.37
Uniform Delay, d1	59.4	47.5	39.3	47.5	29.6	23.0	41.5	20.6	18.3	58.6	45.8	50.6
Progression Factor	1.00	1.00	1.00	1.04	1.16	1.80	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.8	17.8	0.0	59.0	0.8	0.1	65.8	0.4	0.0	22.3	2.6	189.6
Delay (s)	81.1	65.3	39.4	108.6	35.2	41.5	107.3	20.9	18.3	80.8	48.4	240.2
Level of Service	F	E	D	F	D	D	F	C	B	F	D	F
Approach Delay (s)		63.9			55.7			72.7			184.7	
Approach LOS		E			E			E			F	

Intersection Summary			
HCM Average Control Delay	90.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	92	1248	112	114	1035	92	174	137	93	35	729	131
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	1357	122	124	1125	100	189	149	101	38	792	142
RTOR Reduction (vph)	0	0	84	0	0	69	0	0	66	0	0	102
Lane Group Flow (vph)	100	1357	38	124	1125	31	189	149	35	38	792	40
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	18.6	18.6	3.2	18.6	18.6	5.3	20.6	20.6	1.6	16.9	16.9
Effective Green, g (s)	3.2	18.6	18.6	3.2	18.6	18.6	5.3	20.6	20.6	1.6	16.9	16.9
Actuated g/C Ratio	0.05	0.31	0.31	0.05	0.31	0.31	0.09	0.34	0.34	0.03	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1576	491	183	1576	491	303	1215	543	92	997	446
v/s Ratio Prot	0.03	c0.27		c0.04	0.22		c0.06	c0.04		0.01	c0.22	
v/s Ratio Perm			0.02			0.02			0.02			0.03
v/c Ratio	0.55	0.86	0.08	0.68	0.71	0.06	0.62	0.12	0.06	0.41	0.79	0.09
Uniform Delay, d1	27.7	19.5	14.6	27.9	18.3	14.6	26.4	13.5	13.2	28.7	19.9	15.9
Progression Factor	1.06	1.33	1.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.5	0.0	9.5	1.6	0.1	4.0	0.2	0.2	3.0	6.5	0.4
Delay (s)	29.7	26.3	27.1	37.4	19.9	14.6	30.4	13.7	13.5	31.7	26.5	16.3
Level of Service	C	C	C	D	B	B	C	B	B	C	C	B
Approach Delay (s)		26.6			21.1			20.8			25.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	116	1739	97	138	940	42	184	451	186	259	408	485
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	1890	105	150	1022	46	200	490	202	282	443	527
RTOR Reduction (vph)	0	0	43	0	0	28	0	0	92	0	0	96
Lane Group Flow (vph)	126	1890	62	150	1022	18	200	490	110	282	443	431
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.8	31.8	31.8	4.0	31.0	31.0	5.0	19.2	19.2	9.0	23.2	23.2
Effective Green, g (s)	4.8	31.8	31.8	4.0	31.0	31.0	5.0	19.2	19.2	9.0	23.2	23.2
Actuated g/C Ratio	0.06	0.40	0.40	0.05	0.39	0.39	0.06	0.24	0.24	0.11	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	206	2021	629	172	1970	613	215	849	380	386	1026	459
v/s Ratio Prot	0.04	c0.37		c0.04	0.20		0.06	0.14		c0.08	0.13	
v/s Ratio Perm			0.04			0.01			0.07			c0.27
v/c Ratio	0.61	0.94	0.10	0.87	0.52	0.03	0.93	0.58	0.29	0.73	0.43	0.94
Uniform Delay, d1	36.7	23.1	15.1	37.7	18.8	15.2	37.3	26.8	24.8	34.3	23.1	27.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3	8.8	0.1	35.1	0.2	0.0	42.3	2.9	1.9	7.0	1.3	29.3
Delay (s)	42.0	31.9	15.2	72.8	19.0	15.2	79.6	29.7	26.7	41.3	24.4	57.0
Level of Service	D	C	B	E	B	B	E	C	C	D	C	E
Approach Delay (s)		31.7			25.5			40.2			41.9	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	34.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	116	1668	156	153	1133	44	201	499	391	157	476	55
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	1813	170	166	1232	48	218	542	425	171	517	60
RTOR Reduction (vph)	0	0	93	0	0	29	0	0	98	0	0	45
Lane Group Flow (vph)	126	1813	77	166	1232	19	218	542	327	171	517	15
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	27.8	27.8	4.0	27.8	27.8	5.0	18.2	18.2	4.0	17.2	17.2
Effective Green, g (s)	4.0	27.8	27.8	4.0	27.8	27.8	5.0	18.2	18.2	4.0	17.2	17.2
Actuated g/C Ratio	0.06	0.40	0.40	0.06	0.40	0.40	0.07	0.26	0.26	0.06	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	196	2019	629	196	2019	629	245	920	412	196	870	389
v/s Ratio Prot	0.04	c0.36		c0.05	0.24		c0.06	0.15		0.05	0.15	
v/s Ratio Perm			0.05			0.01			c0.21			0.01
v/c Ratio	0.64	0.90	0.12	0.85	0.61	0.03	0.89	0.59	0.79	0.87	0.59	0.04
Uniform Delay, d1	32.3	19.8	13.4	32.7	16.8	12.9	32.2	22.6	24.2	32.7	23.3	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.0	5.7	0.1	27.1	0.6	0.0	29.9	2.8	14.6	32.0	3.0	0.2
Delay (s)	39.3	25.5	13.5	59.8	17.3	12.9	62.1	25.4	38.7	64.7	26.3	20.3
Level of Service	D	C	B	E	B	B	E	C	D	E	C	C
Approach Delay (s)		25.4			22.1			36.9			34.6	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.97	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3442	
Flt Permitted		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1770		1583	1770	3442	
Volume (vph)	0	1321	29	115	644	0	31	0	421	172	400	90
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1436	32	125	700	0	34	0	458	187	435	98
RTOR Reduction (vph)	0	0	8	0	0	0	0	0	134	0	20	0
Lane Group Flow (vph)	0	1436	24	125	700	0	34	0	324	187	513	0
Turn Type			Perm	Prot			Prot		custom	Prot		
Protected Phases		4		3	8		5			1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		37.0	37.0	7.0	48.0		3.6		21.0	10.0	27.4	
Effective Green, g (s)		37.0	37.0	7.0	48.0		3.6		21.0	10.0	27.4	
Actuated g/C Ratio		0.41	0.41	0.08	0.53		0.04		0.23	0.11	0.30	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1439	644	136	1867		70		365	195	1036	
v/s Ratio Prot		c0.41		c0.07	0.20		0.02			c0.11	0.15	
v/s Ratio Perm			0.01						c0.20			
v/c Ratio		1.00	0.04	0.92	0.37		0.49		0.89	0.96	0.49	
Uniform Delay, d1		27.0	16.3	41.7	12.7		42.8		33.9	40.3	26.1	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		23.0	0.0	52.6	0.1		5.2		22.0	52.0	1.7	
Delay (s)		50.0	16.3	94.4	12.8		48.0		55.9	92.3	27.8	
Level of Service		D	B	F	B		D		E	F	C	
Approach Delay (s)		49.3			25.1			55.3			44.6	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM Average Control Delay	43.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	91.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.92	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1529	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98	1.00	0.58		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1529	1504	2111		1583
Volume (vph)	359	1070	0	0	515	186	319	6	375	198	0	212
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	390	1163	0	0	560	202	347	7	408	215	0	230
RTOR Reduction (vph)	0	0	0	0	0	136	0	47	89	0	0	184
Lane Group Flow (vph)	390	1163	0	0	560	66	227	214	185	215	0	46
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	16.0	35.4			15.4	15.4	16.0	16.0	16.0	16.0		16.0
Effective Green, g (s)	16.0	35.4			15.4	15.4	16.0	16.0	16.0	16.0		16.0
Actuated g/C Ratio	0.20	0.45			0.19	0.19	0.20	0.20	0.20	0.20		0.20
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	357	1578			686	307	339	308	303	425		319
v/s Ratio Prot	c0.22	c0.33			0.16		0.14	c0.14				
v/s Ratio Perm						0.04			0.12	c0.10		0.03
v/c Ratio	1.09	0.74			0.82	0.21	0.67	0.69	0.61	0.51		0.15
Uniform Delay, d1	31.7	18.2			30.6	26.9	29.3	29.4	28.9	28.2		26.1
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	74.8	1.8			7.4	0.4	10.1	12.2	8.8	4.3		1.0
Delay (s)	106.5	20.0			38.1	27.3	39.3	41.6	37.7	32.4		27.0
Level of Service	F	B			D	C	D	D	D	C		C
Approach Delay (s)		41.7			35.2			39.5			29.6	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	38.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	79.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	80	34	14	51	467	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	87	37	15	55	508	87

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	124	15	55	508	87
Volume Left (vph)	87	0	0	508	0
Volume Right (vph)	0	0	55	0	87
Hadj (s)	0.17	0.03	-0.67	0.53	-0.67
Departure Headway (s)	6.2	6.4	5.7	5.6	4.4
Degree Utilization, x	0.21	0.03	0.09	0.79	0.11
Capacity (veh/h)	543	520	583	629	794
Control Delay (s)	10.8	8.4	8.0	25.4	6.7
Approach Delay (s)	10.8	8.1		22.7	
Approach LOS	B	A		C	

Intersection Summary			
Delay	19.5		
HCM Level of Service	C		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	243	31	0	87	582	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	264	34	0	95	633	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1067	
pX, platoon unblocked	0.85	0.85	0.85			
vC, conflicting volume	727	633	633			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	678	566	566			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	25	92	100			
cM capacity (veh/h)	354	443	851			

Direction, Lane #	SE 1	SE 2	NE 1	SW 1
Volume Total	264	34	95	633
Volume Left	264	0	0	0
Volume Right	0	34	0	0
cSH	354	443	1700	1700
Volume to Capacity	0.75	0.08	0.06	0.37
Queue Length 95th (ft)	146	6	0	0
Control Delay (s)	39.8	13.8	0.0	0.0
Lane LOS	E	B		
Approach Delay (s)	36.9		0.0	0.0
Approach LOS	E			

Intersection Summary			
Average Delay	10.7		
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	40	595	142	0	0	549
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	647	154	0	0	597
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						573
pX, platoon unblocked	0.83					
vC, conflicting volume	751	154			154	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	700	154			154	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	87	27			100	
cM capacity (veh/h)	337	892			1426	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	690	154	597
Volume Left	43	0	0
Volume Right	647	0	0
cSH	808	1700	1700
Volume to Capacity	0.85	0.09	0.35
Queue Length 95th (ft)	259	0	0
Control Delay (s)	29.5	0.0	0.0
Lane LOS	D		
Approach Delay (s)	29.5	0.0	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	14.1		
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3317		3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3317		3433	5085	1583	1770	3539	1583
Volume (vph)	329	163	111	40	137	98	81	430	186	60	388	324
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	358	177	121	43	149	107	88	467	202	65	422	352
RTOR Reduction (vph)	0	0	84	0	88	0	0	0	139	0	0	245
Lane Group Flow (vph)	358	177	37	43	168	0	88	467	63	65	422	107
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	9.5	18.1	18.1	1.8	10.4		5.9	18.8	18.8	5.3	18.2	18.2
Effective Green, g (s)	9.5	18.1	18.1	1.8	10.4		5.9	18.8	18.8	5.3	18.2	18.2
Actuated g/C Ratio	0.16	0.30	0.30	0.03	0.17		0.10	0.31	0.31	0.09	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	544	1068	478	103	575		338	1593	496	156	1073	480
v/s Ratio Prot	c0.10	0.05		0.01	c0.05		0.03	0.09		c0.04	c0.12	
v/s Ratio Perm			0.02						0.04			0.07
v/c Ratio	0.66	0.17	0.08	0.42	0.29		0.26	0.29	0.13	0.42	0.39	0.22
Uniform Delay, d1	23.7	15.4	15.0	28.6	21.6		25.0	15.6	14.7	25.9	16.5	15.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.1	0.1	2.7	0.3		0.4	0.5	0.5	1.8	1.1	1.1
Delay (s)	26.6	15.5	15.0	31.3	21.9		25.4	16.0	15.3	27.7	17.6	16.7
Level of Service	C	B	B	C	C		C	B	B	C	B	B
Approach Delay (s)		21.5			23.2			16.9			18.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Weber/Herndon

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[10.0]

Street Name:	Weber						Herndon					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 1			0 0 1! 0 0			0 1 2 0 1			0 1 2 0 1		
Volume Module:												
Base Vol:	0	0	5	0	0	0	58	783	20	9	679	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	5	0	0	0	58	783	20	9	679	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	5	0	0	0	58	783	20	9	679	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	5	0	0	0	63	851	22	10	738	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	5	0	0	0	63	851	22	10	738	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	284	1167	1757	246	738	xxxx	xxxxx	873	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	719	151	86	760	877	xxxx	xxxxx	781	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	719	140	78	760	877	xxxx	xxxxx	781	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.01	0.00	0.00	0.00	0.07	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	10.0	xxxxx	xxxx	xxxxx	9.4	xxxx	xxxxx	9.7	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.4	xxxx	xxxxx	9.7	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	A	*	*	A	*	*
ApproachDel:	10.0			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863		1770	1863	1583
Volume (vph)	281	382	159	2	314	137	156	98	0	170	83	282
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	305	415	173	2	341	149	170	107	0	185	90	307
RTOR Reduction (vph)	0	0	111	0	0	123	0	0	0	0	0	258
Lane Group Flow (vph)	305	415	62	2	341	26	170	107	0	185	90	49
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.5	28.6	28.6	0.8	13.9	13.9	21.8	21.5		13.1	12.8	12.8
Effective Green, g (s)	15.5	28.6	28.6	0.8	13.9	13.9	21.8	21.5		13.1	12.8	12.8
Actuated g/C Ratio	0.19	0.36	0.36	0.01	0.17	0.17	0.27	0.27		0.16	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	343	1818	566	18	884	275	482	501		290	298	253
v/s Ratio Prot	c0.17	0.08		0.00	c0.07		c0.10	0.06		c0.10	c0.05	
v/s Ratio Perm			0.04			0.02						0.03
v/c Ratio	0.89	0.23	0.11	0.11	0.39	0.09	0.35	0.21		0.64	0.30	0.19
Uniform Delay, d1	31.4	18.0	17.2	39.2	29.3	27.8	23.4	22.7		31.2	29.7	29.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	23.2	0.1	0.1	2.7	0.3	0.1	2.0	1.0		4.6	0.6	0.4
Delay (s)	54.6	18.0	17.3	42.0	29.6	27.9	25.4	23.7		35.8	30.2	29.5
Level of Service	D	B	B	D	C	C	C	C		D	C	C
Approach Delay (s)		30.4			29.1			24.8			31.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91		0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3433	5085		3433	1804		3433	1863	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3433	5085		3433	1804		3433	1863	
Volume (vph)	50	472	43	93	430	0	34	258	68	50	255	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	513	47	101	467	0	37	280	74	54	277	0
RTOR Reduction (vph)	0	0	37	0	0	0	0	14	0	0	0	0
Lane Group Flow (vph)	54	513	10	101	467	0	37	340	0	54	277	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	3.0	12.3	12.3	4.0	13.3		2.2	24.1		3.6	25.5	
Effective Green, g (s)	3.0	12.3	12.3	4.0	13.3		2.2	24.1		3.6	25.5	
Actuated g/C Ratio	0.05	0.20	0.20	0.07	0.22		0.04	0.40		0.06	0.42	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	89	1042	325	229	1127		126	725		206	792	
v/s Ratio Prot	c0.03	c0.10		0.03	0.09		0.01	c0.19		c0.02	0.15	
v/s Ratio Perm			0.01									
v/c Ratio	0.61	0.49	0.03	0.44	0.41		0.29	0.47		0.26	0.35	
Uniform Delay, d1	27.9	21.1	19.1	26.9	20.0		28.1	13.2		26.9	11.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	11.2	0.4	0.0	1.4	0.2		1.3	2.2		0.7	1.2	
Delay (s)	39.1	21.5	19.1	28.3	20.3		29.4	15.4		27.6	12.9	
Level of Service	D	C	B	C	C		C	B		C	B	
Approach Delay (s)		22.8			21.7			16.7			15.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.91		0.97	0.91		0.76
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5085		3433	5085		3610
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5085		3433	5085		3610
Volume (vph)	518	0	1022	515	0	848
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	563	0	1111	560	0	922
RTOR Reduction (vph)	0	0	0	0	0	189
Lane Group Flow (vph)	563	0	1111	560	0	733
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	11.3		20.7	40.0		20.7
Effective Green, g (s)	11.3		20.7	40.0		20.7
Actuated g/C Ratio	0.28		0.52	1.00		0.52
Clearance Time (s)	4.0		4.0	3.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	1437		1777	5085		1868
v/s Ratio Prot	c0.11		c0.32	0.11		0.20
v/s Ratio Perm						
v/c Ratio	0.39		0.63	0.11		0.39
Uniform Delay, d1	11.6		6.9	0.0		5.8
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.2		0.7	0.0		0.1
Delay (s)	11.8		7.6	0.0		6.0
Level of Service	B		A	A		A
Approach Delay (s)	11.8			5.0	6.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1725		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1725		3433	1863	1583
Volume (vph)	8	1256	102	316	1447	167	66	158	154	183	197	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	1365	111	343	1573	182	72	172	167	199	214	26
RTOR Reduction (vph)	0	0	73	0	0	74	0	58	0	0	0	19
Lane Group Flow (vph)	9	1365	38	343	1573	108	72	281	0	199	214	7
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	22.2	22.2	8.0	29.4	29.4	2.4	13.8		5.0	16.4	16.4
Effective Green, g (s)	0.8	22.2	22.2	8.0	29.4	29.4	2.4	13.8		5.0	16.4	16.4
Actuated g/C Ratio	0.01	0.34	0.34	0.12	0.45	0.45	0.04	0.21		0.08	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	42	1737	541	423	2300	716	127	366		264	470	399
v/s Ratio Prot	0.00	c0.27		c0.10	0.31		0.02	c0.16		c0.06	c0.11	
v/s Ratio Perm			0.02			0.07						0.00
v/c Ratio	0.21	0.79	0.07	0.81	0.68	0.15	0.57	0.77		0.75	0.46	0.02
Uniform Delay, d1	31.8	19.3	14.4	27.8	14.1	10.5	30.8	24.1		29.4	20.5	18.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.6	2.4	0.1	11.2	0.9	0.1	5.7	14.4		11.5	3.2	0.1
Delay (s)	34.3	21.7	14.5	39.0	15.0	10.6	36.5	38.5		40.9	23.7	18.3
Level of Service	C	C	B	D	B	B	D	D		D	C	B
Approach Delay (s)		21.2			18.5			38.1			31.2	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	399	1220	56	250	1608	241	28	311	112	250	306	298
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	434	1326	61	272	1748	262	30	338	122	272	333	324
RTOR Reduction (vph)	0	0	36	0	0	122	0	0	96	0	0	230
Lane Group Flow (vph)	434	1326	25	272	1748	140	30	338	26	272	333	94
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.0	29.7	29.7	10.3	29.0	29.0	1.6	17.0	17.0	7.0	22.4	22.4
Effective Green, g (s)	11.0	29.7	29.7	10.3	29.0	29.0	1.6	17.0	17.0	7.0	22.4	22.4
Actuated g/C Ratio	0.14	0.37	0.37	0.13	0.36	0.36	0.02	0.21	0.21	0.09	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	472	1888	588	442	1843	574	69	752	336	300	991	443
v/s Ratio Prot	c0.13	0.26		0.08	c0.34		0.01	c0.10		c0.08	0.09	
v/s Ratio Perm			0.02			0.09			0.02			0.06
v/c Ratio	0.92	0.70	0.04	0.62	0.95	0.24	0.43	0.45	0.08	0.91	0.34	0.21
Uniform Delay, d1	34.1	21.4	16.1	33.0	24.8	17.8	38.8	27.4	25.2	36.2	22.9	22.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.9	1.2	0.0	2.5	11.0	0.2	4.3	1.9	0.4	29.0	0.9	1.1
Delay (s)	56.9	22.6	16.1	35.5	35.8	18.1	43.1	29.4	25.7	65.1	23.8	23.1
Level of Service	E	C	B	D	D	B	D	C	C	E	C	C
Approach Delay (s)		30.6			33.7			29.3			35.7	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	32.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Volume (vph)	8	1571	1	4	2099	60	2	0	4	60	1	17
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	1708	1	4	2282	65	2	0	4	65	1	18
RTOR Reduction (vph)	0	0	0	0	0	14	0	3	0	0	0	15
Lane Group Flow (vph)	9	1708	1	4	2282	51	2	1	0	65	1	3
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	1.3	54.1	54.1	1.2	54.0	54.0	5.6	14.7		4.0	13.1	13.1
Effective Green, g (s)	1.3	54.1	54.1	1.2	54.0	54.0	5.6	14.7		4.0	13.1	13.1
Actuated g/C Ratio	0.01	0.60	0.60	0.01	0.60	0.60	0.06	0.16		0.04	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	50	3057	952	46	3051	950	214	491		153	271	230
v/s Ratio Prot	c0.00	0.34		0.00	c0.45		0.00	0.00		c0.02	0.00	
v/s Ratio Perm			0.00			0.03						c0.00
v/c Ratio	0.18	0.56	0.00	0.09	0.75	0.05	0.01	0.00		0.42	0.00	0.01
Uniform Delay, d1	43.8	10.8	7.2	43.9	13.1	7.4	39.6	31.5		41.9	32.9	32.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.2	0.0	0.8	1.0	0.0	0.0	0.0		1.9	0.0	0.0
Delay (s)	45.6	11.0	7.2	44.7	14.1	7.5	39.6	31.5		43.8	32.9	32.9
Level of Service	D	B	A	D	B	A	D	C		D	C	C
Approach Delay (s)		11.2			14.0			34.2			41.3	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	84	1426	223	300	1958	84	340	131	361	33	98	87
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	1550	242	326	2128	91	370	142	392	36	107	95
RTOR Reduction (vph)	0	0	107	0	0	21	0	0	247	0	0	80
Lane Group Flow (vph)	91	1550	135	326	2128	70	370	142	145	36	107	15
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	30.0	30.0	18.0	42.0	42.0	20.0	32.4	32.4	3.6	16.0	16.0
Effective Green, g (s)	6.0	30.0	30.0	18.0	42.0	42.0	20.0	32.4	32.4	3.6	16.0	16.0
Actuated g/C Ratio	0.06	0.30	0.30	0.18	0.42	0.42	0.20	0.32	0.32	0.04	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	106	1526	475	319	2136	665	354	604	513	64	298	253
v/s Ratio Prot	0.05	0.30		c0.18	c0.42		c0.21	0.08		0.02	c0.06	
v/s Ratio Perm			0.09			0.04			0.09			0.01
v/c Ratio	0.86	1.02	0.28	1.02	1.00	0.11	1.05	0.24	0.28	0.56	0.36	0.06
Uniform Delay, d1	46.6	35.0	26.8	41.0	28.9	17.6	40.0	24.7	25.1	47.4	37.4	35.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	45.6	27.0	0.3	56.1	18.5	0.1	60.1	0.9	1.4	10.8	3.3	0.5
Delay (s)	92.2	62.0	27.1	97.1	47.4	17.7	100.1	25.6	26.5	58.3	40.8	36.1
Level of Service	F	E	C	F	D	B	F	C	C	E	D	D
Approach Delay (s)		59.0			52.7			56.5			41.5	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM Average Control Delay	55.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	306	1518	216	363	1984	359	158	253	178	204	227	535
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	333	1650	235	395	2157	390	172	275	193	222	247	582
RTOR Reduction (vph)	0	0	40	0	0	53	0	0	162	0	0	246
Lane Group Flow (vph)	333	1650	195	395	2157	337	172	275	31	222	247	336
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	18.0	43.2	43.2	15.8	41.0	41.0	5.0	16.1	16.1	8.9	20.0	20.0
Effective Green, g (s)	18.0	43.2	43.2	15.8	41.0	41.0	5.0	16.1	16.1	8.9	20.0	20.0
Actuated g/C Ratio	0.18	0.43	0.43	0.16	0.41	0.41	0.05	0.16	0.16	0.09	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	319	2197	684	542	2085	649	172	570	255	306	708	317
v/s Ratio Prot	c0.19	0.32		0.12	c0.42		c0.05	0.08		0.06	0.07	
v/s Ratio Perm			0.12			0.21			0.02			c0.21
v/c Ratio	1.04	0.75	0.28	0.73	1.03	0.52	1.00	0.48	0.12	0.73	0.35	1.06
Uniform Delay, d1	41.0	23.9	18.4	40.1	29.5	22.1	47.5	38.2	35.9	44.4	34.4	40.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	62.3	1.5	0.2	4.9	29.3	0.7	68.6	2.9	1.0	8.3	1.4	66.9
Delay (s)	103.3	25.4	18.6	44.9	58.8	22.8	116.1	41.1	36.9	52.6	35.8	106.9
Level of Service	F	C	B	D	E	C	F	D	D	D	D	F
Approach Delay (s)		36.4			52.1			60.0			78.7	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	51.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	89	1668	123	281	2463	185	253	258	138	192	299	139
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	1813	134	305	2677	201	275	280	150	209	325	151
RTOR Reduction (vph)	0	0	65	0	0	48	0	0	121	0	0	62
Lane Group Flow (vph)	97	1813	69	305	2677	153	275	280	29	209	325	90
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	45.1	45.1	10.9	52.0	52.0	10.0	16.0	16.0	12.0	18.0	18.0
Effective Green, g (s)	4.0	45.1	45.1	10.9	52.0	52.0	10.0	16.0	16.0	12.0	18.0	18.0
Actuated g/C Ratio	0.04	0.45	0.45	0.11	0.52	0.52	0.10	0.16	0.16	0.12	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	137	2293	714	374	2644	823	343	566	253	212	915	285
v/s Ratio Prot	0.03	0.36		c0.09	c0.53		0.08	c0.08		c0.12	0.06	
v/s Ratio Perm			0.04			0.10			0.02			0.06
v/c Ratio	0.71	0.79	0.10	0.82	1.01	0.19	0.80	0.49	0.11	0.99	0.36	0.31
Uniform Delay, d1	47.4	23.4	15.8	43.6	24.0	12.7	44.0	38.3	35.9	43.9	35.9	35.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.4	1.9	0.1	12.8	20.6	0.1	12.6	3.1	0.9	57.3	1.1	2.9
Delay (s)	62.8	25.4	15.8	56.4	44.6	12.9	56.7	41.4	36.9	101.2	37.0	38.5
Level of Service	E	C	B	E	D	B	E	D	D	F	D	D
Approach Delay (s)		26.5			43.8			46.4			56.9	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM Average Control Delay	40.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Volume (vph)	784	1173	93	134	1929	170	180	1074	60	265	1119	938
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	852	1275	101	146	2097	185	196	1167	65	288	1216	1020
RTOR Reduction (vph)	0	0	55	0	0	49	0	0	47	0	0	207
Lane Group Flow (vph)	852	1275	46	146	2097	136	196	1167	18	288	1216	813
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.0	49.3	49.3	8.7	37.0	37.0	6.0	33.3	33.3	12.7	40.0	40.0
Effective Green, g (s)	21.0	49.3	49.3	8.7	37.0	37.0	6.0	33.3	33.3	12.7	40.0	40.0
Actuated g/C Ratio	0.18	0.41	0.41	0.07	0.31	0.31	0.05	0.28	0.28	0.11	0.33	0.33
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	601	2089	650	249	1568	488	172	1411	439	363	1180	528
v/s Ratio Prot	c0.25	0.25		0.04	c0.41		c0.06	0.23		0.08	0.34	
v/s Ratio Perm			0.03			0.09			0.01			c0.51
v/c Ratio	1.42	0.61	0.07	0.59	1.34	0.28	1.14	0.83	0.04	0.79	1.03	1.54
Uniform Delay, d1	49.5	27.8	21.4	53.9	41.5	31.4	57.0	40.7	31.7	52.4	40.0	40.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	197.6	0.5	0.0	3.5	156.2	0.3	111.1	5.7	0.2	11.3	34.3	252.5
Delay (s)	247.1	28.3	21.5	57.4	197.7	31.7	168.1	46.3	31.9	63.7	74.3	292.5
Level of Service	F	C	C	E	F	C	F	D	C	E	E	F
Approach Delay (s)		111.7			176.7			62.4			161.3	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM Average Control Delay	136.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	110.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	131	1444	328	432	1636	304	160	939	94	209	1118	275
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	1570	357	470	1778	330	174	1021	102	227	1215	299
RTOR Reduction (vph)	0	0	105	0	0	105	0	0	71	0	0	117
Lane Group Flow (vph)	142	1570	252	470	1778	225	174	1021	31	227	1215	182
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	24.0	24.0	11.0	30.0	30.0	4.0	18.0	18.0	6.0	20.0	20.0
Effective Green, g (s)	5.0	24.0	24.0	11.0	30.0	30.0	4.0	18.0	18.0	6.0	20.0	20.0
Actuated g/C Ratio	0.07	0.32	0.32	0.15	0.40	0.40	0.05	0.24	0.24	0.08	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	229	1627	507	504	2034	633	183	1220	380	275	1356	422
v/s Ratio Prot	0.04	0.31		c0.14	c0.35		0.05	0.20		c0.07	c0.24	
v/s Ratio Perm			0.16			0.14			0.02			0.12
v/c Ratio	0.62	0.96	0.50	0.93	0.87	0.36	0.95	0.84	0.08	0.83	0.90	0.43
Uniform Delay, d1	34.1	25.1	20.6	31.6	20.8	15.7	35.4	27.1	22.1	34.0	26.5	22.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	14.7	0.8	24.3	4.5	0.3	52.1	6.9	0.4	17.9	9.5	3.2
Delay (s)	39.2	39.8	21.4	56.0	25.3	16.1	87.5	34.0	22.5	51.9	36.0	26.0
Level of Service	D	D	C	E	C	B	F	C	C	D	D	C
Approach Delay (s)		36.6			29.7			40.3			36.4	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	34.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	496	42	0	0	68	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	539	46	0	0	74	103
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			585		539	539
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			585		539	539
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		85	81
cM capacity (veh/h)			990		503	542

Direction, Lane #	EB 1	EB 2	NB 1
Volume Total	539	46	177
Volume Left	0	0	74
Volume Right	0	46	103
cSH	1700	1700	931
Volume to Capacity	0.32	0.03	0.19
Queue Length 95th (ft)	0	0	18
Control Delay (s)	0.0	0.0	13.3
Lane LOS			B
Approach Delay (s)	0.0		13.3
Approach LOS			B

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	226	0	60	194	1	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	246	0	65	211	1	77
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			246		587	246
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			246		587	246
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	90
cM capacity (veh/h)			1320		449	793

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SW 1
Volume Total	246	0	65	211	78
Volume Left	0	0	65	0	1
Volume Right	0	0	0	0	77
cSH	1700	1700	1320	1700	804
Volume to Capacity	0.14	0.00	0.05	0.12	0.10
Queue Length 95th (ft)	0	0	4	0	8
Control Delay (s)	0.0	0.0	7.9	0.0	10.1
Lane LOS			A		B
Approach Delay (s)	0.0		1.9		10.1
Approach LOS					B

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	28.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	337	69	131	328	76	107
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	366	75	142	357	83	116

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	366	75	499	199
Volume Left (vph)	366	0	0	83
Volume Right (vph)	0	75	357	0
Hadj (s)	0.53	-0.67	-0.39	0.12
Departure Headway (s)	7.0	5.7	5.3	6.3
Degree Utilization, x	0.71	0.12	0.74	0.35
Capacity (veh/h)	499	600	657	533
Control Delay (s)	23.8	8.3	21.7	12.6
Approach Delay (s)	21.2		21.7	12.6
Approach LOS	C		C	B

Intersection Summary			
Delay	19.9		
HCM Level of Service	C		
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.91	0.91	
Frt		0.85	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1583	1770	5085	5085	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1583	1770	5085	5085	
Volume (vph)	0	359	405	848	1022	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	390	440	922	1111	0
RTOR Reduction (vph)	0	32	0	0	0	0
Lane Group Flow (vph)	0	358	440	922	1111	0
Turn Type		Perm	Prot			Perm
Protected Phases	1!		5!	2	6!	
Permitted Phases		1				6
Actuated Green, G (s)		12.6	12.3	18.7	19.0	
Effective Green, g (s)		12.6	12.3	18.7	19.0	
Actuated g/C Ratio		0.32	0.31	0.48	0.48	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		508	554	2420	2458	
v/s Ratio Prot			c0.25	0.18	c0.22	
v/s Ratio Perm		0.23				
v/c Ratio		0.70	0.79	0.38	0.45	
Uniform Delay, d1		11.7	12.3	6.6	6.7	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		4.4	7.7	0.5	0.6	
Delay (s)		16.1	20.1	7.1	7.3	
Level of Service		B	C	A	A	
Approach Delay (s)	16.1			11.3	7.3	
Approach LOS	B			B	A	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	39.3	Sum of lost time (s)	4.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	7	114	95	642	123	21	158	1494	655	19	1565	16
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	124	103	698	134	23	172	1624	712	21	1701	17
RTOR Reduction (vph)	0	0	76	0	0	15	0	0	299	0	0	7
Lane Group Flow (vph)	8	124	27	698	134	8	172	1624	413	21	1701	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	11.5	11.5	19.4	30.1	30.1	5.0	38.9	38.9	1.6	35.5	35.5
Effective Green, g (s)	0.8	11.5	11.5	19.4	30.1	30.1	5.0	38.9	38.9	1.6	35.5	35.5
Actuated g/C Ratio	0.01	0.13	0.13	0.22	0.34	0.34	0.06	0.45	0.45	0.02	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	31	466	208	762	1219	545	196	2263	705	63	2065	643
v/s Ratio Prot	0.00	c0.04		c0.20	0.04		c0.05	c0.32		0.01	c0.33	
v/s Ratio Perm			0.02			0.01			0.26			0.01
v/c Ratio	0.26	0.27	0.13	0.92	0.11	0.01	0.88	0.72	0.59	0.33	0.82	0.02
Uniform Delay, d1	43.0	34.2	33.5	33.2	19.5	18.9	40.9	19.8	18.2	42.4	23.2	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	0.3	0.3	15.6	0.0	0.0	32.7	2.0	3.6	3.1	3.9	0.0
Delay (s)	47.4	34.5	33.8	48.8	19.6	18.9	73.6	21.8	21.8	45.5	27.0	15.6
Level of Service	D	C	C	D	B	B	E	C	C	D	C	B
Approach Delay (s)		34.6			43.4			25.3			27.2	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	87.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Volume (vph)	274	513	503	10	9	283
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	298	558	547	11	10	308
RTOR Reduction (vph)	0	0	0	8	0	249
Lane Group Flow (vph)	298	558	547	3	10	59
Turn Type	Prot			custom		custom
Protected Phases	7	4				
Permitted Phases			8	8	6	6
Actuated Green, G (s)	9.4	25.4	12.0	12.0	7.9	7.9
Effective Green, g (s)	9.4	25.4	12.0	12.0	7.9	7.9
Actuated g/C Ratio	0.23	0.62	0.29	0.29	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	403	2177	1028	460	339	303
v/s Ratio Prot	c0.17	0.16				
v/s Ratio Perm			c0.15	0.00	0.01	c0.04
v/c Ratio	0.74	0.26	0.53	0.01	0.03	0.19
Uniform Delay, d1	14.8	3.6	12.3	10.4	13.6	14.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.0	0.1	0.5	0.0	0.0	0.3
Delay (s)	21.8	3.7	12.8	10.4	13.6	14.3
Level of Service	C	A	B	B	B	B
Approach Delay (s)		10.0	12.8		14.3	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	41.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #23 Dante/Polk

Cycle (sec):	100	Critical Vol./Cap.(X):	0.716
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	19.7
Optimal Cycle:	0	Level Of Service:	C

Street Name:	Dante						Polk					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	134	64	4	99	155	47	32	235	96	5	257	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	134	64	4	99	155	47	32	235	96	5	257	77
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	134	64	4	99	155	47	32	235	96	5	257	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	146	70	4	108	168	51	35	255	104	5	279	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	146	70	4	108	168	51	35	255	104	5	279	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	146	70	4	108	168	51	35	255	104	5	279	84
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.66	0.32	0.02	0.39	0.61	1.00	1.00	0.71	0.29	1.00	1.00	1.00
Final Sat.:	286	136	9	177	277	506	451	357	146	421	452	492
Capacity Analysis Module:												
Vol/Sat:	0.51	0.51	0.51	0.61	0.61	0.10	0.08	0.72	0.72	0.01	0.62	0.17
Crit Moves:	****			****			****			****		
Delay/Veh:	17.8	17.8	17.8	20.2	20.2	10.1	11.0	23.9	23.9	11.0	21.1	11.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.8	17.8	17.8	20.2	20.2	10.1	11.0	23.9	23.9	11.0	21.1	11.0
LOS by Move:	C	C	C	C	C	B	B	C	C	B	C	B
ApproachDel:	17.8			18.7			22.8			18.6		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	17.8			18.7			22.8			18.6		
LOS by Appr:	C			C			C			C		
AllWayAvgQ:	0.8	0.8	0.8	1.3	1.3	0.1	0.1	2.0	2.0	0.0	1.3	0.2

Note: Queue reported is the number of cars per lane.

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86		0.95	0.95		0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.97	
Satd. Flow (prot)	1770	5085	1583	1770	6401		1681	1504		1681	1632	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.75	
Satd. Flow (perm)	1770	5085	1583	1770	6401		1681	1504		1681	1260	
Volume (vph)	14	2151	484	67	3128	21	18	0	65	913	0	156
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	2338	526	73	3400	23	20	0	71	992	0	170
RTOR Reduction (vph)	0	0	195	0	1	0	0	64	0	0	10	0
Lane Group Flow (vph)	15	2338	331	73	3422	0	20	7	0	604	548	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	1.5	53.5	53.5	4.0	56.0		1.9	12.6		35.3	50.0	
Effective Green, g (s)	1.5	53.5	53.5	4.0	56.0		1.9	12.6		35.3	50.0	
Actuated g/C Ratio	0.01	0.45	0.45	0.03	0.47		0.02	0.11		0.30	0.42	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	22	2277	709	59	3000		27	159		497	637	
v/s Ratio Prot	0.01	0.46		c0.04	c0.53		0.01	0.00		c0.36	0.25	
v/s Ratio Perm			0.21					0.00			c0.11	
v/c Ratio	0.68	1.03	0.47	1.24	1.14		0.74	0.05		1.22	0.86	
Uniform Delay, d1	58.8	33.0	23.0	57.8	31.7		58.6	48.1		42.1	31.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	62.1	26.1	2.2	194.2	67.9		70.7	0.1		114.2	11.2	
Delay (s)	120.9	59.1	25.2	252.0	99.7		129.2	48.2		156.3	42.7	
Level of Service	F	E	C	F	F		F	D		F	D	
Approach Delay (s)		53.2			102.8			66.0			101.8	
Approach LOS		D			F			E			F	

Intersection Summary			
HCM Average Control Delay	83.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	119.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	32	8	5	2	46	47	18	28	0	53	63	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	9	5	2	50	51	20	30	0	58	68	42
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	335	274	90	263	296	15	111			30		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	335	274	90	263	296	15	111			30		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	99	99	100	91	95	99			96		
cM capacity (veh/h)	509	600	950	633	584	1060	1477			1581		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	35	9	5	2	50	51	20	15	15	0	58	111
Volume Left	35	0	0	2	0	0	20	0	0	0	58	0
Volume Right	0	0	5	0	0	51	0	0	0	0	0	42
cSH	509	600	950	633	584	1060	1477	1700	1700	1700	1581	1700
Volume to Capacity	0.07	0.01	0.01	0.00	0.09	0.05	0.01	0.01	0.01	0.00	0.04	0.07
Queue Length 95th (ft)	5	1	0	0	7	4	1	0	0	0	3	0
Control Delay (s)	12.6	11.1	8.8	10.7	11.7	8.6	7.5	0.0	0.0	0.0	7.4	0.0
Lane LOS	B	B	A	B	B	A	A				A	
Approach Delay (s)	11.9			10.1			2.9				2.5	
Approach LOS	B			B								

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	24.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0				4.0		4.0
Lane Util. Factor		0.91			0.86	1.00				0.97		0.88
Frt		1.00			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085			6408	1583				3433		2787
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085			6408	1583				3433		2787
Volume (vph)	0	1869	0	0	2947	245	0	0	0	620	0	762
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2032	0	0	3203	266	0	0	0	674	0	828
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	8
Lane Group Flow (vph)	0	2032	0	0	3203	266	0	0	0	674	0	820
Turn Type						Free				custom		custom
Protected Phases		2			6							
Permitted Phases						Free				8		8
Actuated Green, G (s)		33.0			33.0	60.0				19.0		19.0
Effective Green, g (s)		33.0			33.0	60.0				19.0		19.0
Actuated g/C Ratio		0.55			0.55	1.00				0.32		0.32
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		2797			3524	1583				1087		883
v/s Ratio Prot		0.40			c0.50							
v/s Ratio Perm						0.17				0.20		c0.29
v/c Ratio		0.73			0.91	0.17				0.62		0.93
Uniform Delay, d1		10.1			12.1	0.0				17.4		19.8
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		1.7			4.6	0.2				1.1		15.6
Delay (s)		11.8			16.7	0.2				18.5		35.4
Level of Service		B			B	A				B		D
Approach Delay (s)		11.8			15.5			0.0			27.8	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0		4.0			
Lane Util. Factor		0.91	1.00		0.91		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		5085	1583		5085		1770		1583			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		5085	1583		5085		1770		1583			
Volume (vph)	0	2196	392	0	2747	0	142	0	148	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2387	426	0	2986	0	154	0	161	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	2387	426	0	2986	0	154	0	160	0	0	0
Turn Type			Free				custom		custom			
Protected Phases		2			6							
Permitted Phases			Free				4		4			
Actuated Green, G (s)		45.5	65.1		45.5		11.6		11.6			
Effective Green, g (s)		45.5	65.1		45.5		11.6		11.6			
Actuated g/C Ratio		0.70	1.00		0.70		0.18		0.18			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		3554	1583		3554		315		282			
v/s Ratio Prot		0.47			c0.59							
v/s Ratio Perm			0.27				0.09		c0.10			
v/c Ratio		0.67	0.27		0.84		0.49		0.57			
Uniform Delay, d1		5.6	0.0		7.1		24.1		24.5			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		1.0	0.4		2.6		1.2		2.6			
Delay (s)		6.6	0.4		9.7		25.3		27.1			
Level of Service		A	A		A		C		C			
Approach Delay (s)		5.7			9.7			26.2			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	65.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	470	17	547	452	84	707
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	511	18	595	491	91	768

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	511	18	595	491	91	768
Volume Left (vph)	511	0	595	0	0	0
Volume Right (vph)	0	0	0	491	0	768
Hadj (s)	0.53	0.03	0.53	-0.67	0.03	-0.67
Departure Headway (s)	8.5	8.0	8.1	6.9	7.8	7.1
Degree Utilization, x	1.20	0.04	1.34	0.94	0.20	1.52
Capacity (veh/h)	430	442	449	513	455	511
Control Delay (s)	137.3	10.1	190.0	52.0	11.5	260.5
Approach Delay (s)	132.9		127.6		234.1	
Approach LOS	F		F		F	

Intersection Summary			
Delay	165.7		
HCM Level of Service	F		
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	408	394	80	37	505	399	206	1	1	68	1	517
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	443	428	87	40	549	434	224	1	1	74	1	562

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	658	301	589	434	226	637
Volume Left (vph)	443	0	40	0	224	74
Volume Right (vph)	0	87	0	434	1	562
Hadj (s)	0.37	-0.17	0.07	-0.67	0.23	-0.47
Departure Headway (s)	9.3	8.7	8.9	8.2	9.7	8.0
Degree Utilization, x	1.69	0.73	1.46	0.99	0.61	1.42
Capacity (veh/h)	393	405	414	434	361	459
Control Delay (s)	344.3	30.8	244.9	68.3	26.6	222.9
Approach Delay (s)	245.8		170.0		26.6	222.9
Approach LOS	F		F		D	F

Intersection Summary			
Delay	196.0		
HCM Level of Service	F		
Intersection Capacity Utilization	114.5%	ICU Level of Service	H
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #30 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	1.330
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	135.1
Optimal Cycle:	0	Level Of Service:	F

Street Name:	Dante						Bullard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	56	12	9	64	14	51	101	1085	56	56	965	46
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	56	12	9	64	14	51	101	1085	56	56	965	46
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	56	12	9	64	14	51	101	1085	56	56	965	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	61	13	10	70	15	55	110	1179	61	61	1049	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	61	13	10	70	15	55	110	1179	61	61	1049	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	61	13	10	70	15	55	110	1179	61	61	1049	50
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	305	634	338	309	322	344	411	887	476	405	874	467
Capacity Analysis Module:												
Vol/Sat:	0.20	0.02	0.03	0.22	0.05	0.16	0.27	1.33	0.13	0.15	1.20	0.11
Crit Moves:	****			****				****			****	
Delay/Veh:	17.2	14.1	13.4	17.4	14.2	14.9	14.3	186	11.2	12.9	136	11.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.2	14.1	13.4	17.4	14.2	14.9	14.3	186	11.2	12.9	136	11.1
LOS by Move:	C	B	B	C	B	B	B	F	B	B	F	B
ApproachDel:	16.2			16.1			164.4			124.0		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	16.2			16.1			164.4			124.0		
LOS by Appr:	C			C			F			F		
AllWayAvgQ:	0.2	0.0	0.0	0.3	0.0	0.2	0.3	21.6	0.1	0.2	15.2	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3498		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3498		1770	3539	1583	1770	3539	1583
Volume (vph)	450	463	158	107	1361	116	55	740	467	77	977	60
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	489	503	172	116	1479	126	60	804	508	84	1062	65
RTOR Reduction (vph)	0	0	91	0	5	0	0	0	325	0	0	39
Lane Group Flow (vph)	489	503	81	116	1600	0	60	804	183	84	1062	26
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	25.0	56.6	56.6	12.4	44.0		4.0	29.0	29.0	6.0	31.0	31.0
Effective Green, g (s)	25.0	56.6	56.6	12.4	44.0		4.0	29.0	29.0	6.0	31.0	31.0
Actuated g/C Ratio	0.21	0.47	0.47	0.10	0.37		0.03	0.24	0.24	0.05	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	369	879	747	183	1283		59	855	383	89	914	409
v/s Ratio Prot	c0.28	0.27		0.07	c0.46		0.03	0.23		c0.05	c0.30	
v/s Ratio Perm			0.05						0.12			0.02
v/c Ratio	1.33	0.57	0.11	0.63	1.25		1.02	0.94	0.48	0.94	1.16	0.06
Uniform Delay, d1	47.5	22.9	17.7	51.6	38.0		58.0	44.7	39.0	56.8	44.5	33.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	164.1	0.9	0.1	7.0	117.8		122.0	18.0	0.9	76.4	85.0	0.1
Delay (s)	211.6	23.8	17.7	58.6	155.8		180.0	62.6	40.0	133.2	129.5	33.6
Level of Service	F	C	B	E	F		F	E	D	F	F	C
Approach Delay (s)		101.8			149.3			59.4			124.6	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM Average Control Delay	111.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	109.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88	1.00	0.91		0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	1863	2787	1770	5085		3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	1770	1863	2787	1770	5085		3433	5085	1583
Volume (vph)	230	53	20	5	53	817	29	1541	0	843	1718	334
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	58	22	5	58	888	32	1675	0	916	1867	363
RTOR Reduction (vph)	0	0	18	0	0	24	0	0	0	0	0	94
Lane Group Flow (vph)	250	58	4	5	58	864	32	1675	0	916	1867	269
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.1	22.1	22.1	0.7	9.7	42.0	3.4	41.4		32.3	70.3	83.4
Effective Green, g (s)	13.1	22.1	22.1	0.7	9.7	42.0	3.4	41.4		32.3	70.3	83.4
Actuated g/C Ratio	0.12	0.20	0.20	0.01	0.09	0.37	0.03	0.37		0.29	0.62	0.74
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	400	366	311	11	161	1140	53	1871		986	3178	1230
v/s Ratio Prot	c0.07	0.03		0.00	0.03	c0.22	0.02	c0.33		c0.27	0.37	0.03
v/s Ratio Perm			0.00			0.09						0.14
v/c Ratio	0.62	0.16	0.01	0.45	0.36	0.76	0.60	0.90		0.93	0.59	0.22
Uniform Delay, d1	47.4	37.5	36.4	55.7	48.5	30.8	53.9	33.5		39.0	12.5	4.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.0	0.2	0.0	27.0	1.4	2.9	17.9	6.0		14.4	0.3	0.1
Delay (s)	50.4	37.7	36.4	82.7	49.9	33.7	71.8	39.5		53.4	12.8	4.6
Level of Service	D	D	D	F	D	C	E	D		D	B	A
Approach Delay (s)		47.2			35.0			40.1			23.7	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	120	11	0	169	2	47	25	0	3	27	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	130	12	0	184	2	51	27	0	3	29	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	259	165	29	242	167	27	32			27		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	259	165	29	242	167	27	32			27		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	81	99	100	74	100	97			100		
cM capacity (veh/h)	538	702	1045	588	700	1048	1581			1587		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	145	186	78	0	33	2
Volume Left	2	0	51	0	3	0
Volume Right	12	2	0	0	0	2
cSH	719	703	1581	1700	1587	1700
Volume to Capacity	0.20	0.26	0.03	0.00	0.00	0.00
Queue Length 95th (ft)	19	27	3	0	0	0
Control Delay (s)	11.3	11.9	4.9	0.0	0.7	0.0
Lane LOS	B	B	A		A	
Approach Delay (s)	11.3	11.9	4.9		0.7	
Approach LOS	B	B				

Intersection Summary			
Average Delay	9.6		
Intersection Capacity Utilization	26.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0				4.0		4.0
Lane Util. Factor		0.95	1.00		0.95	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3539	1583		3539	1583				1770		1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3539	1583		3539	1583				1770		1583
Volume (vph)	0	553	35	0	856	8	0	0	0	363	0	310
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	601	38	0	930	9	0	0	0	395	0	337
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	27
Lane Group Flow (vph)	0	601	38	0	930	9	0	0	0	395	0	310
Turn Type			Free			Free				custom		custom
Protected Phases		4			8							
Permitted Phases			Free			Free				6		6
Actuated Green, G (s)		14.7	40.0		14.7	40.0				17.3		17.3
Effective Green, g (s)		14.7	40.0		14.7	40.0				17.3		17.3
Actuated g/C Ratio		0.37	1.00		0.37	1.00				0.43		0.43
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		1301	1583		1301	1583				766		685
v/s Ratio Prot		0.17			c0.26							
v/s Ratio Perm			0.02			0.01				c0.22		0.20
v/c Ratio		0.46	0.02		0.71	0.01				0.52		0.45
Uniform Delay, d1		9.6	0.0		10.9	0.0				8.3		8.0
Progression Factor		1.00	1.00		1.00	1.00				1.00		1.00
Incremental Delay, d2		0.3	0.0		1.9	0.0				2.5		2.2
Delay (s)		9.9	0.0		12.7	0.0				10.8		10.2
Level of Service		A	A		B	A				B		B
Approach Delay (s)		9.3			12.6			0.0			10.5	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0		4.0			
Lane Util. Factor		0.95	1.00		0.95	1.00	1.00		1.00			
Frt		1.00	0.85		1.00	0.85	1.00		0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3539	1583		3539	1583	1770		1583			
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3539	1583		3539	1583	1770		1583			
Volume (vph)	0	392	36	0	959	824	697	0	257	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	426	39	0	1042	896	758	0	279	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	107	0	0	0
Lane Group Flow (vph)	0	426	39	0	1042	896	758	0	172	0	0	0
Turn Type			Free			Free	custom		custom			
Protected Phases		4			8							
Permitted Phases			Free			Free	2		2			
Actuated Green, G (s)		18.9	55.0		18.9	55.0	28.1		28.1			
Effective Green, g (s)		18.9	55.0		18.9	55.0	28.1		28.1			
Actuated g/C Ratio		0.34	1.00		0.34	1.00	0.51		0.51			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		1216	1583		1216	1583	904		809			
v/s Ratio Prot		0.12			c0.29							
v/s Ratio Perm			0.02			0.57	c0.43		0.11			
v/c Ratio		0.35	0.02		0.86	0.57	0.84		0.21			
Uniform Delay, d1		13.5	0.0		16.8	0.0	11.5		7.4			
Progression Factor		1.00	1.00		1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.2	0.0		6.1	1.5	9.2		0.6			
Delay (s)		13.6	0.0		22.9	1.5	20.7		8.0			
Level of Service		B	A		C	A	C		A			
Approach Delay (s)		12.5			13.0			17.3			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	5	742	47	528	1304	536	327	281	5	42	590	886
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	807	51	574	1417	583	355	305	5	46	641	963
RTOR Reduction (vph)	0	0	29	0	0	184	0	0	3	0	0	335
Lane Group Flow (vph)	5	807	22	574	1417	399	355	305	2	46	641	628
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	0.8	26.2	26.2	29.0	54.4	54.4	18.0	42.6	42.6	6.2	30.8	30.8
Effective Green, g (s)	0.8	26.2	26.2	29.0	54.4	54.4	18.0	42.6	42.6	6.2	30.8	30.8
Actuated g/C Ratio	0.01	0.22	0.22	0.24	0.45	0.45	0.15	0.36	0.36	0.05	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	12	773	346	428	1604	718	266	1256	562	91	908	406
v/s Ratio Prot	0.00	c0.23		c0.32	0.40		c0.20	0.09		0.03	0.18	
v/s Ratio Perm			0.01			0.25			0.00			c0.40
v/c Ratio	0.42	1.04	0.06	1.34	0.88	0.56	1.33	0.24	0.00	0.51	0.71	1.55
Uniform Delay, d1	59.4	46.9	37.2	45.5	29.9	24.0	51.0	27.3	25.0	55.4	40.5	44.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.8	44.4	0.1	168.6	6.1	0.9	173.9	0.5	0.0	4.4	4.6	257.8
Delay (s)	81.1	91.3	37.3	214.1	36.1	24.9	224.9	27.8	25.0	59.8	45.1	302.4
Level of Service	F	F	D	F	D	C	F	C	C	E	D	F
Approach Delay (s)		88.1			73.2			133.0			195.6	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM Average Control Delay	117.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	103.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	261	1422	195	203	1676	107	402	702	144	341	423	152
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	284	1546	212	221	1822	116	437	763	157	371	460	165
RTOR Reduction (vph)	0	0	105	0	0	45	0	0	88	0	0	130
Lane Group Flow (vph)	284	1546	107	221	1822	71	437	763	69	371	460	35
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	29.0	29.0	7.0	29.0	29.0	11.0	19.0	19.0	9.0	17.0	17.0
Effective Green, g (s)	7.0	29.0	29.0	7.0	29.0	29.0	11.0	19.0	19.0	9.0	17.0	17.0
Actuated g/C Ratio	0.09	0.36	0.36	0.09	0.36	0.36	0.14	0.24	0.24	0.11	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	300	1843	574	300	1843	574	472	841	376	386	752	336
v/s Ratio Prot	c0.08	0.30		0.06	c0.36		c0.13	c0.22		0.11	0.13	
v/s Ratio Perm			0.07			0.04			0.04			0.02
v/c Ratio	0.95	0.84	0.19	0.74	0.99	0.12	0.93	0.91	0.18	0.96	0.61	0.10
Uniform Delay, d1	36.3	23.4	17.4	35.6	25.3	17.0	34.1	29.6	24.3	35.3	28.5	25.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	37.5	3.5	0.2	9.1	18.1	0.1	24.1	15.3	1.1	35.6	3.7	0.6
Delay (s)	73.9	26.9	17.6	44.7	43.4	17.1	58.2	45.0	25.4	70.9	32.2	26.0
Level of Service	E	C	B	D	D	B	E	D	C	E	C	C
Approach Delay (s)		32.5			42.2			47.0			45.6	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	40.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	409	1614	261	443	1340	166	427	704	197	187	386	609
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	445	1754	284	482	1457	180	464	765	214	203	420	662
RTOR Reduction (vph)	0	0	85	0	0	72	0	0	82	0	0	207
Lane Group Flow (vph)	445	1754	199	482	1457	108	464	765	132	203	420	455
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	18.3	40.0	40.0	17.0	38.7	38.7	16.0	35.8	35.8	11.2	31.0	31.0
Effective Green, g (s)	18.3	40.0	40.0	17.0	38.7	38.7	16.0	35.8	35.8	11.2	31.0	31.0
Actuated g/C Ratio	0.15	0.33	0.33	0.14	0.32	0.32	0.13	0.30	0.30	0.09	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	524	1695	528	486	1640	511	458	1056	472	320	914	409
v/s Ratio Prot	0.13	c0.34		c0.14	0.29		c0.14	0.22		0.06	0.12	
v/s Ratio Perm			0.13			0.07			0.08			c0.29
v/c Ratio	0.85	1.03	0.38	0.99	0.89	0.21	1.01	0.72	0.28	0.63	0.46	1.11
Uniform Delay, d1	49.5	40.0	30.5	51.4	38.6	29.5	52.0	37.7	32.2	52.4	37.4	44.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.2	31.4	0.5	38.5	6.3	0.2	45.4	4.3	1.5	4.1	1.7	78.7
Delay (s)	61.7	71.4	31.0	90.0	44.9	29.8	97.4	42.0	33.7	56.5	39.1	123.2
Level of Service	E	E	C	F	D	C	F	D	C	E	D	F
Approach Delay (s)		65.0			53.8			58.6			85.2	
Approach LOS		E			D			E			F	

Intersection Summary			
HCM Average Control Delay	64.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	271	1206	191	28	1484	82	174	363	153	296	704	50
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	295	1311	208	30	1613	89	189	395	166	322	765	54
RTOR Reduction (vph)	0	0	111	0	0	41	0	0	110	0	0	38
Lane Group Flow (vph)	295	1311	97	30	1613	48	189	395	56	322	765	16
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	34.8	34.8	1.6	28.4	28.4	5.0	14.6	14.6	8.0	17.6	17.6
Effective Green, g (s)	8.0	34.8	34.8	1.6	28.4	28.4	5.0	14.6	14.6	8.0	17.6	17.6
Actuated g/C Ratio	0.11	0.46	0.46	0.02	0.38	0.38	0.07	0.19	0.19	0.11	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	366	2359	735	73	1926	599	229	689	308	366	830	371
v/s Ratio Prot	c0.09	0.26		0.01	c0.32		0.06	0.11		c0.09	c0.22	
v/s Ratio Perm			0.06			0.03			0.04			0.01
v/c Ratio	0.81	0.56	0.13	0.41	0.84	0.08	0.83	0.57	0.18	0.88	0.92	0.04
Uniform Delay, d1	32.7	14.5	11.5	36.2	21.2	14.9	34.6	27.4	25.2	33.0	28.0	22.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.2	0.3	0.1	3.7	3.4	0.1	20.9	3.4	1.3	20.6	17.2	0.2
Delay (s)	44.9	14.8	11.6	40.0	24.6	15.0	55.5	30.8	26.5	53.7	45.2	22.4
Level of Service	D	B	B	D	C	B	E	C	C	D	D	C
Approach Delay (s)		19.3			24.3			36.1			46.5	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.94	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3340	
Flt Permitted		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1770		1583	1770	3340	
Volume (vph)	0	1081	82	336	823	0	69	0	560	213	152	91
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1175	89	365	895	0	75	0	609	232	165	99
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	302	0	74	0
Lane Group Flow (vph)	0	1175	63	365	895	0	75	0	307	232	190	0
Turn Type			Perm	Prot			Prot		custom	Prot		
Protected Phases		4		3	8		5			1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		32.0	32.0	20.0	56.0		7.0		19.8	13.0	25.8	
Effective Green, g (s)		32.0	32.0	20.0	56.0		7.0		19.8	13.0	25.8	
Actuated g/C Ratio		0.32	0.32	0.20	0.56		0.07		0.20	0.13	0.26	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1123	503	351	1966		123		311	228	855	
v/s Ratio Prot		c0.33		c0.21	0.25		0.04			c0.13	0.06	
v/s Ratio Perm			0.04						c0.19			
v/c Ratio		1.05	0.13	1.04	0.46		0.61		0.99	1.02	0.22	
Uniform Delay, d1		34.4	24.5	40.4	13.3		45.6		40.4	43.9	29.6	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		39.8	0.1	58.8	0.2		8.3		47.0	64.2	0.6	
Delay (s)		74.2	24.6	99.2	13.5		53.9		87.3	108.1	30.2	
Level of Service		E	C	F	B		D		F	F	C	
Approach Delay (s)		70.7			38.3			83.7			66.6	
Approach LOS		E			D			F			E	

Intersection Summary			
HCM Average Control Delay	61.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	100.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.87	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1477	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.57		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1477	1504	2046		1583
Volume (vph)	338	1121	0	0	1114	447	208	38	475	248	0	363
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	367	1218	0	0	1211	486	226	41	516	270	0	395
RTOR Reduction (vph)	0	0	0	0	0	110	0	58	58	0	0	307
Lane Group Flow (vph)	367	1218	0	0	1211	376	226	234	207	270	0	88
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	22.0	63.0			37.0	37.0	19.0	19.0	19.0	16.0		16.0
Effective Green, g (s)	22.0	63.0			37.0	37.0	19.0	19.0	19.0	16.0		16.0
Actuated g/C Ratio	0.20	0.57			0.34	0.34	0.17	0.17	0.17	0.15		0.15
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	354	2027			1190	532	290	255	260	298		230
v/s Ratio Prot	c0.21	0.34			c0.34		0.13	c0.16				
v/s Ratio Perm						0.24			0.14	c0.13		0.06
v/c Ratio	1.04	0.60			1.02	0.71	0.78	0.92	0.80	0.91		0.38
Uniform Delay, d1	44.0	15.3			36.5	31.8	43.5	44.7	43.6	46.3		42.5
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	57.7	0.5			30.6	4.3	18.5	38.6	21.9	32.8		4.8
Delay (s)	101.7	15.8			67.1	36.0	62.0	83.3	65.5	79.1		47.3
Level of Service	F	B			E	D	E	F	E	E		D
Approach Delay (s)		35.7			58.2			71.1			60.2	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	53.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

2025 BASELINE TRAFFIC CONDITION

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	3433	1583
Flt Permitted	0.75	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1394	3539	3539	1583	3433	1583
Volume (vph)	92	29	12	90	279	135
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	32	13	98	303	147
RTOR Reduction (vph)	0	0	0	47	0	106
Lane Group Flow (vph)	100	32	13	51	303	41
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)	20.9	20.9	20.9	20.9	11.1	11.1
Effective Green, g (s)	20.9	20.9	20.9	20.9	11.1	11.1
Actuated g/C Ratio	0.52	0.52	0.52	0.52	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	728	1849	1849	827	953	439
v/s Ratio Prot		0.01	0.00			
v/s Ratio Perm	c0.07			0.03	c0.09	0.03
v/c Ratio	0.14	0.02	0.01	0.06	0.32	0.09
Uniform Delay, d1	4.9	4.6	4.6	4.7	11.5	10.7
Progression Factor	1.00	1.00	1.00	1.00	0.31	0.09
Incremental Delay, d2	0.4	0.0	0.0	0.1	0.1	0.1
Delay (s)	5.3	4.6	4.6	4.9	3.7	1.1
Level of Service	A	A	A	A	A	A
Approach Delay (s)		5.1	4.8		2.8	
Approach LOS		A	A		A	

Intersection Summary			
HCM Average Control Delay	3.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Volume (vph)	26	516	51	0	0	496
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	561	55	0	0	539
RTOR Reduction (vph)	0	345	0	0	0	0
Lane Group Flow (vph)	28	216	55	0	0	539
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	15.4	15.4	16.6			16.6
Effective Green, g (s)	15.4	15.4	16.6			16.6
Actuated g/C Ratio	0.38	0.38	0.42			0.42
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	681	1073	773			773
v/s Ratio Prot	0.02		0.03			c0.29
v/s Ratio Perm		c0.08				
v/c Ratio	0.04	0.20	0.07			0.70
Uniform Delay, d1	7.7	8.2	7.1			9.6
Progression Factor	1.00	1.00	0.87			1.00
Incremental Delay, d2	0.1	0.4	0.0			2.8
Delay (s)	7.8	8.6	6.2			12.4
Level of Service	A	A	A			B
Approach Delay (s)	8.6		6.2			12.4
Approach LOS	A		A			B

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3377		3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3377		3433	5085	1583	1770	3539	1583
Volume (vph)	551	131	141	32	109	48	25	394	132	73	339	599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	599	142	153	35	118	52	27	428	143	79	368	651
RTOR Reduction (vph)	0	0	105	0	46	0	0	0	101	0	0	410
Lane Group Flow (vph)	599	142	48	35	124	0	27	428	42	79	368	241
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	14.2	20.6	20.6	1.7	8.1		2.6	19.2	19.2	7.5	24.1	24.1
Effective Green, g (s)	14.2	20.6	20.6	1.7	8.1		2.6	19.2	19.2	7.5	24.1	24.1
Actuated g/C Ratio	0.22	0.32	0.32	0.03	0.12		0.04	0.30	0.30	0.12	0.37	0.37
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	750	1122	502	90	421		137	1502	468	204	1312	587
v/s Ratio Prot	c0.17	0.04		0.01	c0.04		0.01	0.08		c0.04	0.10	
v/s Ratio Perm			0.03						0.03			c0.15
v/c Ratio	0.80	0.13	0.10	0.39	0.30		0.20	0.28	0.09	0.39	0.28	0.41
Uniform Delay, d1	24.0	15.8	15.6	31.1	25.9		30.2	17.6	16.6	26.6	14.4	15.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	0.1	0.1	2.8	0.4		0.7	0.5	0.4	1.2	0.5	2.1
Delay (s)	30.0	15.8	15.7	33.9	26.3		30.9	18.1	17.0	27.8	14.9	17.3
Level of Service	C	B	B	C	C		C	B	B	C	B	B
Approach Delay (s)		25.3			27.6			18.4			17.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Weber/Herndon

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B[11.6]

Street Name:	Weber						Herndon					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0	1		0 0	1!	0 0	0 1 2 0	1		0 1 2 0	1	
Volume Module:												
Base Vol:	0	0	14	0	0	0	119	852	7	7	959	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	14	0	0	0	119	852	7	7	959	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	14	0	0	0	119	852	7	7	959	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	15	0	0	0	129	926	8	8	1042	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	15	0	0	0	129	926	8	8	1042	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	309	1625	2250	347	1042	xxxx	xxxxx	934	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	693	69	42	654	675	xxxx	xxxxx	741	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	693	57	33	654	675	xxxx	xxxxx	741	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.02	0.00	0.00	0.00	0.19	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	xxxxx	0.7	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	10.3	xxxxx	xxxx	xxxxx	11.6	xxxx	xxxxx	9.9	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	B	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.7	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	11.6	xxxx	xxxxx	9.9	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	B	*	*	A	*	*
ApproachDel:	10.3			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	257	413	265	54	743	190	252	62	147	181	50	257
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	279	449	288	59	808	207	274	67	160	197	54	279
RTOR Reduction (vph)	0	0	203	0	0	156	0	0	107	0	0	180
Lane Group Flow (vph)	279	449	85	59	808	51	274	67	53	197	54	99
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	20.7	20.7	2.4	17.1	17.1	16.5	23.1	23.1	7.8	14.4	14.4
Effective Green, g (s)	6.0	20.7	20.7	2.4	17.1	17.1	16.5	23.1	23.1	7.8	14.4	14.4
Actuated g/C Ratio	0.09	0.30	0.30	0.03	0.24	0.24	0.24	0.33	0.33	0.11	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	294	1504	468	118	1242	387	809	1168	522	383	728	326
v/s Ratio Prot	c0.08	c0.09		0.02	c0.16		c0.08	0.02		c0.06	0.02	
v/s Ratio Perm			0.05			0.03			0.03			c0.06
v/c Ratio	0.95	0.30	0.18	0.50	0.65	0.13	0.34	0.06	0.10	0.51	0.07	0.31
Uniform Delay, d1	31.8	19.0	18.3	33.2	23.8	20.6	22.2	16.0	16.3	29.3	22.4	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	38.5	0.1	0.2	3.3	1.2	0.2	1.1	0.1	0.4	1.2	0.0	0.5
Delay (s)	70.3	19.2	18.5	36.5	25.0	20.8	23.4	16.1	16.6	30.5	22.5	24.1
Level of Service	E	B	B	D	C	C	C	B	B	C	C	C
Approach Delay (s)		33.0			24.8			20.2			26.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91		0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085		3433	1757		3433	1863	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085		3433	1757		3433	1863	
Volume (vph)	50	592	16	182	755	0	47	237	145	50	316	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	643	17	198	821	0	51	258	158	54	343	0
RTOR Reduction (vph)	0	0	13	0	0	0	0	35	0	0	0	0
Lane Group Flow (vph)	54	643	4	198	821	0	51	381	0	54	343	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	2.4	15.0	15.0	5.0	17.6		2.8	21.2		2.8	21.2	
Effective Green, g (s)	2.4	15.0	15.0	5.0	17.6		2.8	21.2		2.8	21.2	
Actuated g/C Ratio	0.04	0.25	0.25	0.08	0.29		0.05	0.35		0.05	0.35	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	137	1271	396	286	1492		160	621		160	658	
v/s Ratio Prot	0.02	0.13		c0.06	c0.16		0.01	c0.22		c0.02	0.18	
v/s Ratio Perm			0.00									
v/c Ratio	0.39	0.51	0.01	0.69	0.55		0.32	0.61		0.34	0.52	
Uniform Delay, d1	28.1	19.3	16.9	26.8	17.9		27.7	16.0		27.7	15.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	0.3	0.0	7.1	0.4		1.2	4.5		1.3	2.9	
Delay (s)	30.0	19.6	16.9	33.8	18.3		28.8	20.5		29.0	18.3	
Level of Service	C	B	B	C	B		C	C		C	B	
Approach Delay (s)		20.4			21.3			21.4			19.8	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.91		0.97	0.91		0.76
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5085		3433	5085		3610
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5085		3433	5085		3610
Volume (vph)	787	0	1034	920	0	1287
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	855	0	1124	1000	0	1399
RTOR Reduction (vph)	0	0	0	0	0	31
Lane Group Flow (vph)	855	0	1124	1000	0	1368
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	15.5		26.5	50.0		26.5
Effective Green, g (s)	15.5		26.5	50.0		26.5
Actuated g/C Ratio	0.31		0.53	1.00		0.53
Clearance Time (s)	4.0		4.0	3.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	1576		1819	5085		1913
v/s Ratio Prot	c0.17		0.33	0.20		c0.38
v/s Ratio Perm						
v/c Ratio	0.54		0.62	0.20		0.71
Uniform Delay, d1	14.3		8.2	0.0		8.9
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.4		0.6	0.0		1.3
Delay (s)	14.7		8.8	0.0		10.2
Level of Service	B		A	A		B
Approach Delay (s)	14.7			4.7	10.2	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1622		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1622		3433	1863	1583
Volume (vph)	6	2011	57	169	1838	228	73	55	349	183	121	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	2186	62	184	1998	248	79	60	379	199	132	26
RTOR Reduction (vph)	0	0	32	0	0	65	0	82	0	0	0	21
Lane Group Flow (vph)	7	2186	30	184	1998	183	79	357	0	199	132	5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	38.2	38.2	5.0	42.4	42.4	4.0	15.8		5.0	16.8	16.8
Effective Green, g (s)	0.8	38.2	38.2	5.0	42.4	42.4	4.0	15.8		5.0	16.8	16.8
Actuated g/C Ratio	0.01	0.48	0.48	0.06	0.53	0.53	0.05	0.20		0.06	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	34	2428	756	215	2695	839	172	320		215	391	332
v/s Ratio Prot	0.00	c0.43		c0.05	0.39		0.02	c0.22		c0.06	0.07	
v/s Ratio Perm			0.02			0.12						0.00
v/c Ratio	0.21	0.90	0.04	0.86	0.74	0.22	0.46	1.12		0.93	0.34	0.02
Uniform Delay, d1	39.3	19.2	11.1	37.1	14.6	10.0	36.9	32.1		37.3	26.9	25.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.0	5.1	0.0	26.7	1.1	0.1	1.9	85.3		40.9	2.3	0.1
Delay (s)	42.3	24.2	11.1	63.9	15.7	10.1	38.9	117.4		78.2	29.2	25.1
Level of Service	D	C	B	E	B	B	D	F		E	C	C
Approach Delay (s)		23.9			18.8			105.5			56.2	
Approach LOS		C			B			F			E	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	338	2028	194	115	1519	133	254	181	168	233	284	447
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	367	2204	211	125	1651	145	276	197	183	253	309	486
RTOR Reduction (vph)	0	0	67	0	0	63	0	0	81	0	0	140
Lane Group Flow (vph)	367	2204	144	125	1651	82	276	197	102	253	309	346
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.8	40.0	40.0	4.0	32.2	32.2	8.0	19.6	19.6	10.4	22.0	22.0
Effective Green, g (s)	11.8	40.0	40.0	4.0	32.2	32.2	8.0	19.6	19.6	10.4	22.0	22.0
Actuated g/C Ratio	0.13	0.44	0.44	0.04	0.36	0.36	0.09	0.22	0.22	0.12	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	450	2260	704	153	1819	566	305	771	345	397	865	387
v/s Ratio Prot	c0.11	c0.43		0.04	0.32		c0.08	0.06		0.07	0.09	
v/s Ratio Perm			0.09			0.05			0.06			c0.22
v/c Ratio	0.82	0.98	0.21	0.82	0.91	0.14	0.90	0.26	0.30	0.64	0.36	0.89
Uniform Delay, d1	38.0	24.5	15.3	42.6	27.5	19.6	40.6	29.2	29.4	38.0	28.1	32.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.9	13.5	0.1	27.4	7.0	0.1	28.4	0.8	2.2	3.3	1.2	25.6
Delay (s)	48.9	38.0	15.4	70.1	34.5	19.7	69.0	30.0	31.6	41.3	29.3	58.5
Level of Service	D	D	B	E	C	B	E	C	C	D	C	E
Approach Delay (s)		37.7			35.7			46.8			45.8	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	39.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Volume (vph)	30	2407	1	2	1743	50	0	1	0	50	0	25
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	2616	1	2	1895	54	0	1	0	54	0	27
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	0	0	0	24
Lane Group Flow (vph)	33	2616	1	2	1895	40	0	1	0	54	0	3
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	4.2	64.5	64.5	1.2	61.5	61.5		15.1		3.2		12.8
Effective Green, g (s)	4.2	64.5	64.5	1.2	61.5	61.5		15.1		3.2		12.8
Actuated g/C Ratio	0.04	0.64	0.64	0.01	0.62	0.62		0.15		0.03		0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	144	3280	1021	41	3127	974		534		110		203
v/s Ratio Prot	c0.01	c0.51		0.00	0.37			0.00		c0.02		
v/s Ratio Perm			0.00			0.03						c0.00
v/c Ratio	0.23	0.80	0.00	0.05	0.61	0.04		0.00		0.49		0.02
Uniform Delay, d1	46.3	13.0	6.3	48.8	11.8	7.6		36.1		47.6		38.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2	0.8	1.4	0.0	0.5	0.3	0.0		0.0		3.4		0.0
Delay (s)	47.1	14.4	6.3	49.3	12.2	7.6		36.1		51.0		38.1
Level of Service	D	B	A	D	B	A		D		D		D
Approach Delay (s)		14.8			12.1			36.1			46.7	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	110	2266	299	309	1557	29	193	109	303	95	131	85
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	2463	325	336	1692	32	210	118	329	103	142	92
RTOR Reduction (vph)	0	0	101	0	0	10	0	0	117	0	0	76
Lane Group Flow (vph)	120	2463	224	336	1692	22	210	118	212	103	142	16
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.8	43.0	43.0	9.0	45.2	45.2	6.0	18.0	18.0	4.0	16.0	16.0
Effective Green, g (s)	6.8	43.0	43.0	9.0	45.2	45.2	6.0	18.0	18.0	4.0	16.0	16.0
Actuated g/C Ratio	0.08	0.48	0.48	0.10	0.50	0.50	0.07	0.20	0.20	0.04	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	259	2430	756	343	2554	795	229	708	317	153	629	281
v/s Ratio Prot	0.03	c0.48		c0.10	0.33		c0.06	0.03		0.03	0.04	
v/s Ratio Perm			0.14			0.01			c0.13			0.01
v/c Ratio	0.46	1.01	0.30	0.98	0.66	0.03	0.92	0.17	0.67	0.67	0.23	0.06
Uniform Delay, d1	39.9	23.5	14.3	40.4	16.7	11.3	41.8	29.8	33.3	42.4	31.7	30.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	21.7	0.2	42.6	0.7	0.0	37.2	0.5	10.7	11.1	0.8	0.4
Delay (s)	41.2	45.2	14.5	83.0	17.4	11.3	79.0	30.3	44.0	53.4	32.5	31.1
Level of Service	D	D	B	F	B	B	E	C	D	D	C	C
Approach Delay (s)		41.6			28.0			52.7			38.5	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	37.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	148	2580	105	214	1568	236	224	226	222	160	220	172
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	161	2804	114	233	1704	257	243	246	241	174	239	187
RTOR Reduction (vph)	0	0	12	0	0	44	0	0	101	0	0	105
Lane Group Flow (vph)	161	2804	102	233	1704	213	243	246	140	174	239	82
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.6	53.0	53.0	7.0	51.4	51.4	7.0	17.0	17.0	7.0	17.0	17.0
Effective Green, g (s)	8.6	53.0	53.0	7.0	51.4	51.4	7.0	17.0	17.0	7.0	17.0	17.0
Actuated g/C Ratio	0.09	0.53	0.53	0.07	0.51	0.51	0.07	0.17	0.17	0.07	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	295	2695	839	240	2614	814	240	602	269	240	602	269
v/s Ratio Prot	0.05	c0.55		c0.07	0.34		c0.07	0.07		0.05	0.07	
v/s Ratio Perm			0.06			0.13			c0.09			0.05
v/c Ratio	0.55	1.04	0.12	0.97	0.65	0.26	1.01	0.41	0.52	0.72	0.40	0.30
Uniform Delay, d1	43.8	23.5	11.8	46.4	17.8	13.6	46.5	37.0	37.8	45.6	36.9	36.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	29.0	0.1	49.7	0.6	0.2	61.3	2.1	7.0	10.4	2.0	2.9
Delay (s)	45.9	52.5	11.9	96.1	18.4	13.8	107.8	39.1	44.8	55.9	38.9	39.2
Level of Service	D	D	B	F	B	B	F	D	D	E	D	D
Approach Delay (s)		50.6			26.1			63.8			43.9	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM Average Control Delay	43.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	5085	1583
Volume (vph)	57	2648	158	67	1902	217	86	180	171	176	262	41
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	2878	172	73	2067	236	93	196	186	191	285	45
RTOR Reduction (vph)	0	0	56	0	0	79	0	0	65	0	0	37
Lane Group Flow (vph)	62	2878	116	73	2067	157	93	196	121	191	285	8
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	50.6	50.6	3.2	49.8	49.8	4.0	15.2	15.2	5.0	16.2	16.2
Effective Green, g (s)	4.0	50.6	50.6	3.2	49.8	49.8	4.0	15.2	15.2	5.0	16.2	16.2
Actuated g/C Ratio	0.04	0.56	0.56	0.04	0.55	0.55	0.04	0.17	0.17	0.06	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	153	2859	890	122	2814	876	153	598	267	191	915	285
v/s Ratio Prot	0.02	c0.57		c0.02	0.41		0.03	0.06		c0.06	0.06	
v/s Ratio Perm			0.07			0.10			c0.08			0.01
v/c Ratio	0.41	1.01	0.13	0.60	0.73	0.18	0.61	0.33	0.45	1.00	0.31	0.03
Uniform Delay, d1	41.8	19.7	9.3	42.8	15.1	10.0	42.2	32.9	33.7	42.5	32.1	30.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	18.4	0.1	7.7	1.0	0.1	6.7	1.5	5.5	65.1	0.9	0.2
Delay (s)	43.6	38.1	9.4	50.4	16.1	10.1	48.9	34.4	39.1	107.6	32.9	30.6
Level of Service	D	D	A	D	B	B	D	C	D	F	C	C
Approach Delay (s)		36.7			16.6			39.1			60.1	
Approach LOS		D			B			D			E	

Intersection Summary			
HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	877	2064	146	137	1197	327	138	1090	156	146	1214	698
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	953	2243	159	149	1301	355	150	1185	170	159	1320	759
RTOR Reduction (vph)	0	0	60	0	0	78	0	0	77	0	0	2
Lane Group Flow (vph)	953	2243	99	149	1301	277	150	1185	93	159	1320	757
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	27.0	47.0	47.0	5.0	25.0	25.0	5.0	27.0	27.0	5.0	27.0	54.0
Effective Green, g (s)	27.0	47.0	47.0	5.0	25.0	25.0	5.0	27.0	27.0	5.0	27.0	54.0
Actuated g/C Ratio	0.27	0.47	0.47	0.05	0.25	0.25	0.05	0.27	0.27	0.05	0.27	0.54
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	927	2390	744	172	1271	396	172	1373	427	172	1373	918
v/s Ratio Prot	c0.28	c0.44		0.04	0.26		0.04	0.23		c0.05	c0.26	c0.22
v/s Ratio Perm			0.06			0.17			0.06			0.26
v/c Ratio	1.03	0.94	0.13	0.87	1.02	0.70	0.87	0.86	0.22	0.92	0.96	0.82
Uniform Delay, d1	36.5	25.1	15.0	47.2	37.5	34.1	47.2	34.7	28.3	47.3	36.0	19.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.9	7.9	0.1	33.7	31.4	5.3	35.1	7.4	1.2	46.9	16.7	6.1
Delay (s)	73.4	33.1	15.1	80.9	68.9	39.4	82.3	42.1	29.5	94.2	52.7	25.2
Level of Service	E	C	B	F	E	D	F	D	C	F	D	C
Approach Delay (s)		43.7			64.1			44.7			46.3	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	48.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	327	1737	120	143	1572	353	50	439	145	271	638	100
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	355	1888	130	155	1709	384	54	477	158	295	693	109
RTOR Reduction (vph)	0	0	63	0	0	128	0	0	113	0	0	78
Lane Group Flow (vph)	355	1888	67	155	1709	256	54	477	45	295	693	31
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	34.0	34.0	5.0	29.0	29.0	2.4	17.0	17.0	8.0	22.6	22.6
Effective Green, g (s)	10.0	34.0	34.0	5.0	29.0	29.0	2.4	17.0	17.0	8.0	22.6	22.6
Actuated g/C Ratio	0.12	0.42	0.42	0.06	0.36	0.36	0.03	0.21	0.21	0.10	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	429	2161	673	215	1843	574	103	1081	336	343	1437	447
v/s Ratio Prot	c0.10	c0.37		0.05	0.34		0.02	0.09		c0.09	c0.14	
v/s Ratio Perm			0.04			0.16			0.03			0.02
v/c Ratio	0.83	0.87	0.10	0.72	0.93	0.45	0.52	0.44	0.13	0.86	0.48	0.07
Uniform Delay, d1	34.2	21.0	13.8	36.8	24.5	19.4	38.2	27.4	25.5	35.4	23.8	21.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.4	4.2	0.1	11.3	8.6	0.6	4.7	1.3	0.8	19.2	1.2	0.3
Delay (s)	46.5	25.3	13.9	48.1	33.1	19.9	43.0	28.7	26.3	54.6	25.0	21.3
Level of Service	D	C	B	D	C	B	D	C	C	D	C	C
Approach Delay (s)		27.8			31.9			29.3			32.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			3433	1583
Volume (vph)	454	74	0	0	12	270
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	493	80	0	0	13	293
RTOR Reduction (vph)	0	51	0	0	0	150
Lane Group Flow (vph)	493	29	0	0	13	143
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	9.1	9.1			7.8	7.8
Effective Green, g (s)	9.1	9.1			7.8	7.8
Actuated g/C Ratio	0.37	0.37			0.31	0.31
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1293	579			1075	496
v/s Ratio Prot	c0.14				0.00	
v/s Ratio Perm		0.02				c0.09
v/c Ratio	0.38	0.05			0.01	0.29
Uniform Delay, d1	5.8	5.1			5.9	6.5
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	0.2	0.0			0.0	0.3
Delay (s)	6.0	5.1			5.9	6.8
Level of Service	A	A			A	A
Approach Delay (s)	5.9			0.0	6.7	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	24.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	127	0	297	133	1	356
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	138	0	323	145	1	387
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			138		856	69
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			138		856	69
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			78		100	61
cM capacity (veh/h)			1443		230	980

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SW 1
Volume Total	69	69	0	323	72	72	388
Volume Left	0	0	0	323	0	0	1
Volume Right	0	0	0	0	0	0	387
cSH	1700	1700	1700	1443	1700	1700	983
Volume to Capacity	0.04	0.04	0.00	0.22	0.04	0.04	0.39
Queue Length 95th (ft)	0	0	0	21	0	0	48
Control Delay (s)	0.0	0.0	0.0	8.2	0.0	0.0	11.1
Lane LOS				A			B
Approach Delay (s)	0.0			5.7			11.1
Approach LOS							B

Intersection Summary			
Average Delay	7.0		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	253	253	249	271	148	245
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	275	275	271	295	161	266

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	275	275	565	427
Volume Left (vph)	275	0	0	161
Volume Right (vph)	0	275	295	0
Hadj (s)	0.53	-0.67	-0.28	0.11
Departure Headway (s)	8.0	6.7	6.1	6.7
Degree Utilization, x	0.61	0.51	0.96	0.80
Capacity (veh/h)	443	531	565	520
Control Delay (s)	21.3	15.4	52.7	31.2
Approach Delay (s)	18.4		52.7	31.2
Approach LOS	C		F	D

Intersection Summary			
Delay	34.5		
HCM Level of Service	D		
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.91	0.91	
Frt		0.85	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1583	1770	5085	5085	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1583	1770	5085	5085	
Volume (vph)	0	348	310	1287	1034	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	378	337	1399	1124	0
RTOR Reduction (vph)	0	331	0	0	0	0
Lane Group Flow (vph)	0	47	337	1399	1124	0
Turn Type		custom	Prot			Perm
Protected Phases	1!		5!	2	6!	
Permitted Phases		4				6
Actuated Green, G (s)		6.0	13.1	34.2	17.1	
Effective Green, g (s)		6.0	13.1	34.2	17.1	
Actuated g/C Ratio		0.12	0.27	0.71	0.35	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		197	481	3608	1804	
v/s Ratio Prot			c0.19	0.28	c0.22	
v/s Ratio Perm		c0.03				
v/c Ratio		0.24	0.70	0.39	0.62	
Uniform Delay, d1		19.0	15.8	2.8	12.9	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6	4.6	0.3	1.6	
Delay (s)		19.7	20.4	3.1	14.5	
Level of Service		B	C	A	B	
Approach Delay (s)	19.7			6.5	14.5	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	48.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	28	56	139	170	35	11	79	1835	107	18	1651	8
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	61	151	185	38	12	86	1995	116	20	1795	9
RTOR Reduction (vph)	0	0	104	0	0	10	0	0	43	0	0	4
Lane Group Flow (vph)	30	61	47	185	38	2	86	1995	73	20	1795	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	1.6	8.4	8.4	4.3	11.1	11.1	3.2	39.4	39.4	0.8	37.0	37.0
Effective Green, g (s)	1.6	8.4	8.4	4.3	11.1	11.1	3.2	39.4	39.4	0.8	37.0	37.0
Actuated g/C Ratio	0.02	0.12	0.12	0.06	0.16	0.16	0.05	0.57	0.57	0.01	0.54	0.54
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	80	431	193	214	570	255	159	2908	905	40	2731	850
v/s Ratio Prot	0.01	0.02		c0.05	c0.01		c0.03	c0.39		0.01	0.35	
v/s Ratio Perm			c0.03			0.00			0.05			0.00
v/c Ratio	0.38	0.14	0.24	0.86	0.07	0.01	0.54	0.69	0.08	0.50	0.66	0.01
Uniform Delay, d1	33.2	27.0	27.4	32.0	24.5	24.3	32.1	10.4	6.6	33.9	11.4	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.2	0.7	28.4	0.0	0.0	3.7	1.3	0.2	9.5	1.3	0.0
Delay (s)	36.1	27.2	28.0	60.4	24.6	24.3	35.9	11.7	6.8	43.4	12.7	7.4
Level of Service	D	C	C	E	C	C	D	B	A	D	B	A
Approach Delay (s)		28.8			52.8			12.4			13.0	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Volume (vph)	82	100	58	9	15	158
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	109	63	10	16	172
RTOR Reduction (vph)	0	0	0	9	0	71
Lane Group Flow (vph)	89	109	63	1	16	101
Turn Type	Prot			custom		custom
Protected Phases	7	4				
Permitted Phases			8	8	6	6
Actuated Green, G (s)	3.3	10.9	3.6	3.6	26.7	26.7
Effective Green, g (s)	3.3	10.9	3.6	3.6	26.7	26.7
Actuated g/C Ratio	0.07	0.24	0.08	0.08	0.59	0.59
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	128	846	279	125	1036	927
v/s Ratio Prot	c0.05	0.03				
v/s Ratio Perm			c0.02	0.00	0.01	c0.06
v/c Ratio	0.70	0.13	0.23	0.01	0.02	0.11
Uniform Delay, d1	20.7	13.6	19.7	19.4	4.0	4.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.1	0.1	0.4	0.0	0.0	0.1
Delay (s)	35.8	13.7	20.1	19.4	4.0	4.2
Level of Service	D	B	C	B	A	A
Approach Delay (s)		23.6	20.0		4.2	
Approach LOS		C	C		A	

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	45.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	21.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1759		1770	1863	1583	1770	1842		1770	1863	1583
Flt Permitted	0.64	1.00		0.60	1.00	1.00	0.69	1.00		0.64	1.00	1.00
Satd. Flow (perm)	1201	1759		1117	1863	1583	1284	1842		1194	1863	1583
Volume (vph)	48	149	88	16	164	75	99	157	13	95	97	25
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	162	96	17	178	82	108	171	14	103	105	27
RTOR Reduction (vph)	0	65	0	0	0	60	0	7	0	0	0	15
Lane Group Flow (vph)	52	193	0	17	178	22	108	178	0	103	105	12
Turn Type	Perm			Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)	7.4	7.4		7.4	7.4	7.4	11.9	11.9		11.9	11.9	11.9
Effective Green, g (s)	7.4	7.4		7.4	7.4	7.4	11.9	11.9		11.9	11.9	11.9
Actuated g/C Ratio	0.27	0.27		0.27	0.27	0.27	0.44	0.44		0.44	0.44	0.44
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	326	477		303	505	429	560	803		520	812	690
v/s Ratio Prot		c0.11			0.10			c0.10			0.06	
v/s Ratio Perm	0.04			0.02		0.01	0.08			0.09		0.01
v/c Ratio	0.16	0.40		0.06	0.35	0.05	0.19	0.22		0.20	0.13	0.02
Uniform Delay, d1	7.6	8.1		7.4	8.0	7.4	4.7	4.8		4.8	4.6	4.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.6		0.1	0.4	0.1	0.2	0.1		0.2	0.1	0.0
Delay (s)	7.8	8.7		7.4	8.4	7.4	4.9	4.9		4.9	4.7	4.4
Level of Service	A	A		A	A	A	A	A		A	A	A
Approach Delay (s)		8.6			8.1			4.9			4.8	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	27.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86		0.95	0.95		0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.97	
Satd. Flow (prot)	1770	5085	1583	1770	6407		1681	1504		1681	1636	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.81	
Satd. Flow (perm)	1770	5085	1583	1770	6407		1681	1504		1681	1373	
Volume (vph)	27	1978	423	74	2147	3	1	0	16	266	0	43
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	2150	460	80	2334	3	1	0	17	289	0	47
RTOR Reduction (vph)	0	0	230	0	0	0	0	16	0	0	12	0
Lane Group Flow (vph)	29	2150	230	80	2337	0	1	1	0	170	154	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	2.0	44.9	44.9	5.0	47.9		0.7	3.7		20.8	27.8	
Effective Green, g (s)	2.0	44.9	44.9	5.0	47.9		0.7	3.7		20.8	27.8	
Actuated g/C Ratio	0.02	0.50	0.50	0.06	0.53		0.01	0.04		0.23	0.31	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	39	2545	792	99	3421		13	62		390	487	
v/s Ratio Prot	0.02	c0.42		c0.05	c0.36		0.00	0.00		c0.10	0.07	
v/s Ratio Perm			0.15					0.00			c0.02	
v/c Ratio	0.74	0.84	0.29	0.81	0.68		0.08	0.01		0.44	0.32	
Uniform Delay, d1	43.6	19.4	13.1	41.9	15.3		44.2	41.2		29.4	23.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	54.3	3.7	0.9	36.6	1.1		2.5	0.1		0.8	0.4	
Delay (s)	97.9	23.0	14.0	78.4	16.5		46.7	41.3		30.2	24.0	
Level of Service	F	C	B	E	B		D	D		C	C	
Approach Delay (s)		22.3			18.5			41.6			27.2	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	89.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539		1770	1795	
Flt Permitted	0.74	1.00	1.00	0.75	1.00	1.00	0.74	1.00		0.72	1.00	
Satd. Flow (perm)	1386	1863	1583	1397	1863	1583	1375	3539		1344	1795	
Volume (vph)	73	11	8	1	18	173	7	48	0	56	20	6
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	12	9	1	20	188	8	52	0	61	22	7
RTOR Reduction (vph)	0	0	7	0	0	138	0	0	0	0	3	0
Lane Group Flow (vph)	79	12	2	1	20	50	8	52	0	61	26	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	10.3	10.3	10.3	10.3	10.3	10.3	20.4	20.4		20.4	20.4	
Effective Green, g (s)	10.3	10.3	10.3	10.3	10.3	10.3	20.4	20.4		20.4	20.4	
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.53	0.53		0.53	0.53	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	369	496	421	372	496	421	725	1866		708	946	
v/s Ratio Prot		0.01			0.01			0.01			0.01	
v/s Ratio Perm	c0.06		0.00	0.00		0.03	0.01			c0.05		
v/c Ratio	0.21	0.02	0.01	0.00	0.04	0.12	0.01	0.03		0.09	0.03	
Uniform Delay, d1	11.1	10.5	10.4	10.4	10.5	10.8	4.4	4.4		4.5	4.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0		0.1	0.0	
Delay (s)	11.3	10.5	10.4	10.4	10.6	10.9	4.4	4.4		4.6	4.4	
Level of Service	B	B	B	B	B	B	A	A		A	A	
Approach Delay (s)		11.2			10.9			4.4			4.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	38.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	28.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0				4.0		4.0
Lane Util. Factor		0.91			0.86	1.00				0.97		0.88
Frt		1.00			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085			6408	1583				3433		2787
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085			6408	1583				3433		2787
Volume (vph)	0	1915	0	0	2036	127	0	0	0	260	0	511
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2082	0	0	2213	138	0	0	0	283	0	555
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	5
Lane Group Flow (vph)	0	2082	0	0	2213	138	0	0	0	283	0	550
Turn Type						Free				custom		custom
Protected Phases		2			6							
Permitted Phases						Free				8		8
Actuated Green, G (s)		26.1			26.1	48.1				14.0		14.0
Effective Green, g (s)		26.1			26.1	48.1				14.0		14.0
Actuated g/C Ratio		0.54			0.54	1.00				0.29		0.29
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		2759			3477	1583				999		811
v/s Ratio Prot		c0.41			0.35							
v/s Ratio Perm						0.09				0.08		c0.20
v/c Ratio		0.75			0.64	0.09				0.28		0.68
Uniform Delay, d1		8.5			7.7	0.0				13.2		15.1
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		2.0			0.9	0.1				0.2		2.3
Delay (s)		10.5			8.6	0.1				13.3		17.3
Level of Service		B			A	A				B		B
Approach Delay (s)		10.5			8.1			0.0			16.0	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	48.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0		4.0			
Lane Util. Factor		0.91	1.00		0.91		1.00		1.00			
Frt		1.00	0.85		0.94		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		5085	1583		4766		1770		1583			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		5085	1583		4766		1770		1583			
Volume (vph)	0	2156	360	0	1333	962	18	0	90	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2343	391	0	1449	1046	20	0	98	0	0	0
RTOR Reduction (vph)	0	0	0	0	117	0	0	0	37	0	0	0
Lane Group Flow (vph)	0	2343	391	0	2378	0	20	0	61	0	0	0
Turn Type			Free				custom		custom			
Protected Phases		2			6							
Permitted Phases			Free				4		4			
Actuated Green, G (s)		58.6	74.7		58.6		8.1		8.1			
Effective Green, g (s)		58.6	74.7		58.6		8.1		8.1			
Actuated g/C Ratio		0.78	1.00		0.78		0.11		0.11			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		3989	1583		3739		192		172			
v/s Ratio Prot		0.46			c0.50							
v/s Ratio Perm			c0.25				0.01		0.04			
v/c Ratio		0.59	0.25		0.64		0.10		0.35			
Uniform Delay, d1		3.2	0.0		3.5		30.0		30.9			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		0.6	0.4		0.8		0.2		1.2			
Delay (s)		3.9	0.4		4.3		30.3		32.1			
Level of Service		A	A		A		C		C			
Approach Delay (s)		3.4			4.3			31.8			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	4.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	74.7	Sum of lost time (s)	4.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	2787
Volume (vph)	98	131	564	139	87	551
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	142	613	151	95	599
RTOR Reduction (vph)	0	121	0	0	0	492
Lane Group Flow (vph)	107	21	613	151	95	107
Turn Type		Perm	Prot			Perm
Protected Phases	6		5	2	4	
Permitted Phases		6				4
Actuated Green, G (s)	7.5	7.5	22.9	34.4	9.2	9.2
Effective Green, g (s)	7.5	7.5	22.9	34.4	9.2	9.2
Actuated g/C Ratio	0.15	0.15	0.44	0.67	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	514	230	786	2359	316	497
v/s Ratio Prot	c0.03		c0.35	0.04	c0.05	
v/s Ratio Perm		0.01				0.04
v/c Ratio	0.21	0.09	0.78	0.06	0.30	0.21
Uniform Delay, d1	19.4	19.1	12.2	3.0	18.4	18.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2	4.9	0.0	0.5	0.2
Delay (s)	19.6	19.3	17.1	3.0	18.9	18.3
Level of Service	B	B	B	A	B	B
Approach Delay (s)	19.4			14.3	18.4	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	51.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00		0.95	0.95	1.00
Frt	1.00	0.95		1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97		0.95	0.96	1.00
Satd. Flow (prot)	1770	3363		1770	3539	1583		1756		1681	1699	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97		0.95	0.96	1.00
Satd. Flow (perm)	1770	3363		1770	3539	1583		1756		1681	1699	1583
Volume (vph)	477	182	90	38	148	182	39	9	12	363	35	293
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	518	198	98	41	161	198	42	10	13	395	38	318
RTOR Reduction (vph)	0	50	0	0	0	164	0	11	0	0	0	253
Lane Group Flow (vph)	518	246	0	41	161	34	0	54	0	211	222	65
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	33.4	44.3		4.4	15.3	15.3		7.0		18.3	18.3	18.3
Effective Green, g (s)	33.4	44.3		4.4	15.3	15.3		7.0		18.3	18.3	18.3
Actuated g/C Ratio	0.37	0.49		0.05	0.17	0.17		0.08		0.20	0.20	0.20
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	657	1655		87	602	269		137		342	345	322
v/s Ratio Prot	c0.29	0.07		0.02	c0.05			c0.03		0.13	c0.13	
v/s Ratio Perm						0.02						0.04
v/c Ratio	0.79	0.15		0.47	0.27	0.13		0.39		0.62	0.64	0.20
Uniform Delay, d1	25.2	12.5		41.7	32.5	31.7		39.5		32.7	32.9	29.8
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	6.2	0.2		4.0	1.1	1.0		1.9		3.3	4.1	0.3
Delay (s)	31.4	12.7		45.7	33.6	32.6		41.3		36.0	36.9	30.1
Level of Service	C	B		D	C	C		D		D	D	C
Approach Delay (s)		24.6			34.3			41.3			33.8	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	1863	1583
Flt Permitted	0.46	1.00	1.00	0.38	1.00	1.00	0.75	1.00	1.00	0.75	1.00	1.00
Satd. Flow (perm)	863	3539	1583	702	3539	1583	1394	3539	1583	1396	1863	1583
Volume (vph)	17	637	36	25	471	30	166	11	18	118	13	47
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	692	39	27	512	33	180	12	20	128	14	51
RTOR Reduction (vph)	0	0	23	0	0	20	0	0	14	0	0	35
Lane Group Flow (vph)	18	692	16	27	512	13	180	12	6	128	14	16
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	11.3	11.3	11.3	11.3	11.3	11.3	9.1	9.1	9.1	9.1	9.1	9.1
Effective Green, g (s)	11.3	11.3	11.3	11.3	11.3	11.3	9.1	9.1	9.1	9.1	9.1	9.1
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.32	0.32	0.32	0.32	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1408	630	279	1408	630	447	1134	507	447	597	507
v/s Ratio Prot		c0.20			0.14			0.00			0.01	
v/s Ratio Perm	0.02		0.01	0.04		0.01	c0.13		0.00	0.09		0.01
v/c Ratio	0.05	0.49	0.02	0.10	0.36	0.02	0.40	0.01	0.01	0.29	0.02	0.03
Uniform Delay, d1	5.3	6.4	5.2	5.4	6.0	5.2	7.5	6.6	6.6	7.2	6.6	6.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	0.0	0.2	0.2	0.0	0.6	0.0	0.0	0.4	0.0	0.0
Delay (s)	5.3	6.7	5.2	5.5	6.2	5.2	8.1	6.6	6.6	7.6	6.6	6.7
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		6.6			6.1			7.9			7.3	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	28.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3476		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3476		1770	3539	1583	1770	3539	1583
Volume (vph)	267	809	68	182	648	87	44	793	175	59	632	188
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	290	879	74	198	704	95	48	862	190	64	687	204
RTOR Reduction (vph)	0	0	52	0	14	0	0	0	136	0	0	144
Lane Group Flow (vph)	290	879	22	198	785	0	48	862	54	64	687	60
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.8	21.3	21.3	10.3	17.8		2.2	20.0	20.0	3.0	20.8	20.8
Effective Green, g (s)	13.8	21.3	21.3	10.3	17.8		2.2	20.0	20.0	3.0	20.8	20.8
Actuated g/C Ratio	0.20	0.30	0.30	0.15	0.25		0.03	0.28	0.28	0.04	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	346	1068	478	258	876		55	1003	448	75	1043	466
v/s Ratio Prot	c0.16	c0.25		0.11	0.23		0.03	c0.24		c0.04	0.19	
v/s Ratio Perm			0.01						0.03			0.04
v/c Ratio	0.84	0.82	0.05	0.77	0.90		0.87	0.86	0.12	0.85	0.66	0.13
Uniform Delay, d1	27.3	22.9	17.5	29.0	25.5		34.1	24.0	18.8	33.6	21.8	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.1	5.2	0.0	12.8	11.7		76.2	7.5	0.1	57.0	1.5	0.1
Delay (s)	43.4	28.1	17.5	41.8	37.2		110.3	31.4	18.9	90.5	23.3	18.4
Level of Service	D	C	B	D	D		F	C	B	F	C	B
Approach Delay (s)		31.1			38.1			32.7			26.8	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	70.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	1863	2787	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	1770	1863	2787	1770	5085	1583	3433	5085	1583
Volume (vph)	307	99	12	45	85	638	12	1571	102	255	968	201
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	334	108	13	49	92	693	13	1708	111	277	1052	218
RTOR Reduction (vph)	0	0	10	0	0	34	0	0	64	0	0	68
Lane Group Flow (vph)	334	108	3	49	92	659	13	1708	47	277	1052	150
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	12.5	17.6	17.6	3.2	8.3	17.7	0.7	34.2	34.2	9.4	42.9	55.4
Effective Green, g (s)	12.5	17.6	17.6	3.2	8.3	17.7	0.7	34.2	34.2	9.4	42.9	55.4
Actuated g/C Ratio	0.16	0.22	0.22	0.04	0.10	0.22	0.01	0.43	0.43	0.12	0.53	0.69
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	534	408	347	70	192	752	15	2163	673	401	2713	1170
v/s Ratio Prot	c0.10	0.06		0.03	0.05	c0.10	0.01	c0.34		0.08	0.21	0.02
v/s Ratio Perm			0.00			0.13			0.03			0.07
v/c Ratio	0.63	0.26	0.01	0.70	0.48	0.88	0.87	0.79	0.07	0.69	0.39	0.13
Uniform Delay, d1	31.8	26.0	24.6	38.1	34.0	30.3	39.8	20.0	13.7	34.1	11.0	4.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.3	0.0	27.0	1.9	11.2	162.9	2.0	0.0	5.1	0.1	0.0
Delay (s)	34.0	26.4	24.6	65.1	35.9	41.4	202.7	22.0	13.7	39.2	11.1	4.3
Level of Service	C	C	C	E	D	D	F	C	B	D	B	A
Approach Delay (s)		32.0			42.2			22.8			15.2	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM Average Control Delay	24.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	80.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.99			1.00			1.00	0.85		1.00	0.85
Flt Protected		1.00			1.00			0.98	1.00		1.00	1.00
Satd. Flow (prot)		1837			1858			1829	1583		1856	1583
Flt Permitted		0.99			0.99			0.91	1.00		0.98	1.00
Satd. Flow (perm)		1829			1836			1693	1583		1829	1583
Volume (vph)	6	289	30	3	93	1	18	31	4	1	11	6
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	314	33	3	101	1	20	34	4	1	12	7
RTOR Reduction (vph)	0	9	0	0	1	0	0	0	3	0	0	5
Lane Group Flow (vph)	0	345	0	0	104	0	0	54	1	0	13	2
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		9.9			9.9			8.2	8.2		8.2	8.2
Effective Green, g (s)		9.9			9.9			8.2	8.2		8.2	8.2
Actuated g/C Ratio		0.38			0.38			0.31	0.31		0.31	0.31
Clearance Time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		694			696			532	497		575	497
v/s Ratio Prot												
v/s Ratio Perm		c0.19			0.06			c0.03	0.00		0.01	0.00
v/c Ratio		0.50			0.15			0.10	0.00		0.02	0.00
Uniform Delay, d1		6.2			5.3			6.3	6.1		6.2	6.1
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		0.6			0.1			0.1	0.0		0.0	0.0
Delay (s)		6.8			5.4			6.4	6.1		6.2	6.2
Level of Service		A			A			A	A		A	A
Approach Delay (s)		6.8			5.4			6.4			6.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	26.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	35.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0				4.0		4.0
Lane Util. Factor		0.91	1.00		0.91	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085	1583		5085	1583				1770		1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085	1583		5085	1583				1770		1583
Volume (vph)	0	1832	607	0	1394	17	0	0	0	470	0	260
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1991	660	0	1515	18	0	0	0	511	0	283
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	6
Lane Group Flow (vph)	0	1991	660	0	1515	18	0	0	0	511	0	277
Turn Type			Free			Free				custom		custom
Protected Phases		4			8							
Permitted Phases			Free			Free				6		6
Actuated Green, G (s)		20.8	45.0		20.8	45.0				16.2		16.2
Effective Green, g (s)		20.8	45.0		20.8	45.0				16.2		16.2
Actuated g/C Ratio		0.46	1.00		0.46	1.00				0.36		0.36
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		2350	1583		2350	1583				637		570
v/s Ratio Prot		c0.39			0.30							
v/s Ratio Perm			0.42			0.01				c0.29		0.17
v/c Ratio		0.85	0.42		0.64	0.01				0.80		0.49
Uniform Delay, d1		10.7	0.0		9.3	0.0				13.0		11.2
Progression Factor		1.00	1.00		1.00	1.00				1.00		1.00
Incremental Delay, d2		3.0	0.8		0.6	0.0				10.3		2.9
Delay (s)		13.7	0.8		9.9	0.0				23.2		14.1
Level of Service		B	A		A	A				C		B
Approach Delay (s)		10.5			9.8			0.0			20.0	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0		4.0			
Lane Util. Factor		0.91	1.00		0.91	1.00	1.00		1.00			
Frt		1.00	0.85		1.00	0.85	1.00		0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (prot)		5085	1583		5085	1583	1770		1583			
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (perm)		5085	1583		5085	1583	1770		1583			
Volume (vph)	0	1723	73	0	1604	424	837	0	121	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1873	79	0	1743	461	910	0	132	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1873	79	0	1743	461	910	0	132	0	0	0
Turn Type			Free			Free	custom		custom			
Protected Phases		4			8							
Permitted Phases			Free			Free	2		2			
Actuated Green, G (s)		28.0	75.0		28.0	75.0	39.0		39.0			
Effective Green, g (s)		28.0	75.0		28.0	75.0	39.0		39.0			
Actuated g/C Ratio		0.37	1.00		0.37	1.00	0.52		0.52			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		1898	1583		1898	1583	920		823			
v/s Ratio Prot		c0.37			0.34							
v/s Ratio Perm			0.05			0.29	c0.51		0.08			
v/c Ratio		0.99	0.05		0.92	0.29	0.99		0.16			
Uniform Delay, d1		23.3	0.0		22.4	0.0	17.8		9.4			
Progression Factor		1.00	1.00		1.00	1.00	1.00		1.00			
Incremental Delay, d2		17.4	0.1		7.6	0.5	27.2		0.4			
Delay (s)		40.8	0.1		30.0	0.5	45.0		9.8			
Level of Service		D	A		C	A	D		A			
Approach Delay (s)		39.1			23.8			40.5			0.0	
Approach LOS		D			C			D			A	

Intersection Summary			
HCM Average Control Delay	32.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	5	1710	59	333	1182	138	231	396	2	18	300	664
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	1859	64	362	1285	150	251	430	2	20	326	722
RTOR Reduction (vph)	0	0	24	0	0	80	0	0	1	0	0	109
Lane Group Flow (vph)	5	1859	40	362	1285	70	251	430	1	20	326	613
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	0.8	41.2	41.2	11.0	51.4	51.4	8.0	40.2	40.2	1.6	33.8	33.8
Effective Green, g (s)	0.8	41.2	41.2	11.0	51.4	51.4	8.0	40.2	40.2	1.6	33.8	33.8
Actuated g/C Ratio	0.01	0.37	0.37	0.10	0.47	0.47	0.07	0.37	0.37	0.01	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	25	1905	593	343	2376	740	250	1293	579	50	1087	486
v/s Ratio Prot	0.00	c0.37		c0.11	0.25		c0.07	0.12		0.01	0.09	
v/s Ratio Perm			0.03			0.04			0.00			c0.39
v/c Ratio	0.20	0.98	0.07	1.06	0.54	0.09	1.00	0.33	0.00	0.40	0.30	1.26
Uniform Delay, d1	54.3	33.9	22.1	49.5	20.9	16.3	51.0	25.2	22.2	53.7	29.1	38.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	15.2	0.0	63.9	0.3	0.1	57.9	0.7	0.0	5.2	0.7	133.6
Delay (s)	58.2	49.1	22.1	113.4	21.1	16.4	108.9	25.9	22.2	58.9	29.8	171.7
Level of Service	E	D	C	F	C	B	F	C	C	E	C	F
Approach Delay (s)		48.2			39.3			56.4			126.2	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM Average Control Delay	61.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	98	1772	186	118	1295	36	184	115	67	14	722	137
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	1926	202	128	1408	39	200	125	73	15	785	149
RTOR Reduction (vph)	0	0	89	0	0	22	0	0	51	0	0	102
Lane Group Flow (vph)	107	1926	113	128	1408	17	200	125	22	15	785	47
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	29.2	29.2	3.2	28.4	28.4	5.4	20.8	20.8	0.8	16.2	16.2
Effective Green, g (s)	4.0	29.2	29.2	3.2	28.4	28.4	5.4	20.8	20.8	0.8	16.2	16.2
Actuated g/C Ratio	0.06	0.42	0.42	0.05	0.41	0.41	0.08	0.30	0.30	0.01	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	196	2121	660	157	2063	642	265	1052	470	39	819	366
v/s Ratio Prot	0.03	c0.38		c0.04	0.28		c0.06	0.04		0.00	c0.22	
v/s Ratio Perm			0.07			0.01			0.01			0.03
v/c Ratio	0.55	0.91	0.17	0.82	0.68	0.03	0.75	0.12	0.05	0.38	0.96	0.13
Uniform Delay, d1	32.1	19.1	12.8	33.1	17.1	12.5	31.7	17.9	17.5	34.4	26.6	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	6.1	0.1	26.7	0.9	0.0	11.5	0.2	0.2	6.2	22.8	0.7
Delay (s)	35.2	25.3	12.9	59.8	18.0	12.5	43.2	18.2	17.7	40.6	49.4	22.0
Level of Service	D	C	B	E	B	B	D	B	B	D	D	C
Approach Delay (s)		24.6			21.3			30.7			45.0	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	27.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	247	1930	89	164	1143	41	202	438	211	237	381	515
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	2098	97	178	1242	45	220	476	229	258	414	560
RTOR Reduction (vph)	0	0	32	0	0	28	0	0	99	0	0	145
Lane Group Flow (vph)	268	2098	65	178	1242	17	220	476	130	258	414	415
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.1	38.0	38.0	5.0	31.9	31.9	6.0	20.6	20.6	10.4	25.0	25.0
Effective Green, g (s)	11.1	38.0	38.0	5.0	31.9	31.9	6.0	20.6	20.6	10.4	25.0	25.0
Actuated g/C Ratio	0.12	0.42	0.42	0.06	0.35	0.35	0.07	0.23	0.23	0.12	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	423	2147	668	191	1802	561	229	810	362	397	983	440
v/s Ratio Prot	0.08	c0.41		c0.05	0.24		c0.06	0.13		c0.08	0.12	
v/s Ratio Perm			0.04			0.01			0.08			c0.26
v/c Ratio	0.63	0.98	0.10	0.93	0.69	0.03	0.96	0.59	0.36	0.65	0.42	0.94
Uniform Delay, d1	37.5	25.6	15.7	42.3	24.8	19.0	41.9	30.9	29.1	38.1	26.6	31.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	14.3	0.1	45.9	1.1	0.0	48.2	3.1	2.7	3.7	1.3	30.7
Delay (s)	40.6	39.9	15.7	88.2	25.9	19.0	90.1	34.0	31.9	41.7	27.9	62.5
Level of Service	D	D	B	F	C	B	F	C	C	D	C	E
Approach Delay (s)		39.0			33.3			46.8			46.5	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	40.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	88	1813	148	162	1372	62	180	472	219	175	400	53
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	1971	161	176	1491	67	196	513	238	190	435	58
RTOR Reduction (vph)	0	0	75	0	0	34	0	0	106	0	0	45
Lane Group Flow (vph)	96	1971	86	176	1491	33	196	513	132	190	435	13
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	31.8	31.8	5.0	32.8	32.8	5.0	17.2	17.2	5.0	17.2	17.2
Effective Green, g (s)	4.0	31.8	31.8	5.0	32.8	32.8	5.0	17.2	17.2	5.0	17.2	17.2
Actuated g/C Ratio	0.05	0.42	0.42	0.07	0.44	0.44	0.07	0.23	0.23	0.07	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	2156	671	229	2224	692	229	812	363	229	812	363
v/s Ratio Prot	0.03	c0.39		c0.05	0.29		c0.06	c0.14		0.06	0.12	
v/s Ratio Perm			0.05			0.02			0.08			0.01
v/c Ratio	0.52	0.91	0.13	0.77	0.67	0.05	0.86	0.63	0.36	0.83	0.54	0.04
Uniform Delay, d1	34.6	20.3	13.2	34.4	16.8	12.1	34.6	26.0	24.3	34.6	25.4	22.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	6.5	0.1	14.3	0.8	0.0	25.5	3.7	2.8	21.3	2.5	0.2
Delay (s)	37.3	26.8	13.2	48.7	17.6	12.2	60.1	29.8	27.1	55.9	27.9	22.6
Level of Service	D	C	B	D	B	B	E	C	C	E	C	C
Approach Delay (s)		26.3			20.6			35.4			35.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	27.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.91	1.00	1.00	0.91		1.00		1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.91	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		5085	1583	1770	5085		1770		1583	3433	3209	
Flt Permitted		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		5085	1583	1770	5085		1770		1583	3433	3209	
Volume (vph)	0	1209	34	99	584	0	52	0	401	177	68	112
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1314	37	108	635	0	57	0	436	192	74	122
RTOR Reduction (vph)	0	0	23	0	0	0	0	0	166	0	83	0
Lane Group Flow (vph)	0	1314	14	108	635	0	57	0	270	192	113	0
Turn Type			Perm	Prot			Prot		custom	Prot		
Protected Phases		4		3	8		5			1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		16.8	16.8	3.8	24.6		2.2		12.8	7.9	18.5	
Effective Green, g (s)		16.8	16.8	3.8	24.6		2.2		12.8	7.9	18.5	
Actuated g/C Ratio		0.29	0.29	0.07	0.43		0.04		0.22	0.14	0.32	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1491	464	117	2183		68		354	473	1036	
v/s Ratio Prot		c0.26		c0.06	0.12		0.03			c0.06	0.04	
v/s Ratio Perm			0.01						c0.17			
v/c Ratio		0.88	0.03	0.92	0.29		0.84		0.76	0.41	0.11	
Uniform Delay, d1		19.3	14.4	26.6	10.7		27.4		20.8	22.6	13.6	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		6.5	0.0	59.3	0.1		56.3		9.4	0.6	0.2	
Delay (s)		25.8	14.5	85.9	10.7		83.7		30.2	23.1	13.8	
Level of Service		C	B	F	B		F		C	C	B	
Approach Delay (s)		25.5			21.7			36.4			18.4	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	25.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.91			0.91	1.00	0.95	0.95	0.88	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98	1.00	0.95		1.00
Satd. Flow (prot)	3433	5085			5085	1583	1681	1728	2787	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98	1.00	0.62		1.00
Satd. Flow (perm)	3433	5085			5085	1583	1681	1728	2787	2245		1583
Volume (vph)	347	906	0	0	581	188	275	98	369	186	0	227
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	377	985	0	0	632	204	299	107	401	202	0	247
RTOR Reduction (vph)	0	0	0	0	0	162	0	0	220	0	0	189
Lane Group Flow (vph)	377	985	0	0	632	42	198	208	181	202	0	58
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	6.0	24.1			14.1	14.1	16.0	16.0	16.0	16.0		16.0
Effective Green, g (s)	6.0	24.1			14.1	14.1	16.0	16.0	16.0	16.0		16.0
Actuated g/C Ratio	0.09	0.35			0.21	0.21	0.23	0.23	0.23	0.23		0.23
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	302	1800			1053	328	395	406	655	527		372
v/s Ratio Prot	c0.11	c0.19			0.12		0.12	c0.12				
v/s Ratio Perm						0.03			0.06	c0.09		0.04
v/c Ratio	1.25	0.55			0.60	0.13	0.50	0.51	0.28	0.38		0.16
Uniform Delay, d1	31.0	17.6			24.4	22.0	22.6	22.7	21.3	21.9		20.7
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	136.3	0.3			1.0	0.2	4.5	4.6	1.0	2.1		0.9
Delay (s)	167.4	18.0			25.4	22.2	27.1	27.2	22.4	24.0		21.6
Level of Service	F	B			C	C	C	C	C	C		C
Approach Delay (s)		59.3			24.6			24.8			22.7	
Approach LOS		E			C			C			C	

Intersection Summary			
HCM Average Control Delay	38.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	3433	1583
Flt Permitted	0.75	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1392	3539	3539	1583	3433	1583
Volume (vph)	81	35	14	43	553	81
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	38	15	47	601	88
RTOR Reduction (vph)	0	0	0	24	0	60
Lane Group Flow (vph)	88	38	15	23	601	28
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)	19.4	19.4	19.4	19.4	12.6	12.6
Effective Green, g (s)	19.4	19.4	19.4	19.4	12.6	12.6
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	675	1716	1716	768	1081	499
v/s Ratio Prot		0.01	0.00			
v/s Ratio Perm	c0.06			0.01	c0.18	0.02
v/c Ratio	0.13	0.02	0.01	0.03	0.56	0.06
Uniform Delay, d1	5.7	5.4	5.3	5.4	11.4	9.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	0.0	0.1	0.6	0.0
Delay (s)	6.1	5.4	5.3	5.5	12.0	9.6
Level of Service	A	A	A	A	B	A
Approach Delay (s)		5.9	5.4		11.7	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Volume (vph)	35	637	74	0	0	622
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	692	80	0	0	676
RTOR Reduction (vph)	0	520	0	0	0	0
Lane Group Flow (vph)	38	172	80	0	0	676
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	8.2	8.2	16.8			16.8
Effective Green, g (s)	8.2	8.2	16.8			16.8
Actuated g/C Ratio	0.25	0.25	0.51			0.51
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	440	693	948			948
v/s Ratio Prot	0.02		0.04			c0.36
v/s Ratio Perm		c0.06				
v/c Ratio	0.09	0.25	0.08			0.71
Uniform Delay, d1	9.5	9.9	4.2			6.2
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	0.2	0.0			2.6
Delay (s)	9.6	10.1	4.2			8.8
Level of Service	A	B	A			A
Approach Delay (s)	10.1		4.2			8.8
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	33.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3295		3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3295		3433	5085	1583	1770	3539	1583
Volume (vph)	626	199	117	203	127	109	30	325	105	106	342	441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	680	216	127	221	138	118	33	353	114	115	372	479
RTOR Reduction (vph)	0	0	95	0	104	0	0	0	86	0	0	313
Lane Group Flow (vph)	680	216	32	221	152	0	33	353	28	115	372	166
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	18.7	17.8	17.8	9.2	8.3		2.8	17.0	17.0	10.0	24.2	24.2
Effective Green, g (s)	18.7	17.8	17.8	9.2	8.3		2.8	17.0	17.0	10.0	24.2	24.2
Actuated g/C Ratio	0.27	0.25	0.25	0.13	0.12		0.04	0.24	0.24	0.14	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	917	900	403	451	391		137	1235	384	253	1223	547
v/s Ratio Prot	c0.20	0.06		0.06	c0.05		0.01	0.07		c0.06	c0.11	
v/s Ratio Perm			0.02						0.02			0.10
v/c Ratio	0.74	0.24	0.08	0.49	0.39		0.24	0.29	0.07	0.45	0.30	0.30
Uniform Delay, d1	23.4	20.7	19.9	28.2	28.5		32.6	21.6	20.4	27.5	16.7	16.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.08	1.57	4.97
Incremental Delay, d2	3.3	0.1	0.1	0.8	0.6		0.9	0.6	0.4	1.2	0.6	1.3
Delay (s)	26.7	20.9	20.0	29.1	29.1		33.5	22.1	20.8	30.8	26.9	84.6
Level of Service	C	C	B	C	C		C	C	C	C	C	F
Approach Delay (s)		24.6			29.1			22.6			56.0	
Approach LOS		C			C			C			E	

Intersection Summary			
HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Weber/Herndon

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: B[10.5]

Street Name:	Weber						Herndon					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0	1	0 0	1!	0 0	0 1	2 0	1	0 1	2 0	1
Volume Module:												
Base Vol:	0	0	6	0	0	0	93	939	33	12	737	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	6	0	0	0	93	939	33	12	737	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	6	0	0	0	93	939	33	12	737	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	7	0	0	0	101	1021	36	13	801	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	7	0	0	0	101	1021	36	13	801	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	340	1370	2086	267	801	xxxx	xxxxx	1057	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	662	107	54	737	831	xxxx	xxxxx	667	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	662	94	46	737	831	xxxx	xxxxx	667	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.01	0.00	0.00	0.00	0.12	xxxx	xxxx	0.02	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	10.5	xxxxx	xxxx	xxxxx	9.9	xxxx	xxxxx	10.5	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	A	*	*	B	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	0.1	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.9	xxxx	xxxxx	10.5	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	A	*	*	B	*	*
ApproachDel:	10.5			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	332	486	156	7	418	137	149	100	3	170	139	300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	361	528	170	8	454	149	162	109	3	185	151	326
RTOR Reduction (vph)	0	0	121	0	0	117	0	0	2	0	0	266
Lane Group Flow (vph)	361	528	49	8	454	32	162	109	1	185	151	60
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	20.2	20.2	0.8	15.0	15.0	20.2	24.5	24.5	8.5	12.8	12.8
Effective Green, g (s)	6.0	20.2	20.2	0.8	15.0	15.0	20.2	24.5	24.5	8.5	12.8	12.8
Actuated g/C Ratio	0.09	0.29	0.29	0.01	0.21	0.21	0.29	0.35	0.35	0.12	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	294	1467	457	39	1090	339	991	1239	554	417	647	289
v/s Ratio Prot	c0.11	c0.10		0.00	0.09		c0.05	0.03		c0.05	c0.04	
v/s Ratio Perm			0.03			0.02			0.00			0.04
v/c Ratio	1.23	0.36	0.11	0.21	0.42	0.09	0.16	0.09	0.00	0.44	0.23	0.21
Uniform Delay, d1	32.0	19.8	18.3	34.3	23.7	22.1	18.6	15.3	14.8	28.6	24.4	24.3
Progression Factor	1.15	1.17	2.52	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	125.2	0.1	0.1	2.6	0.3	0.1	0.4	0.1	0.0	0.8	0.2	0.4
Delay (s)	162.0	23.3	46.2	36.9	24.0	22.2	18.9	15.4	14.8	29.3	24.6	24.6
Level of Service	F	C	D	D	C	C	B	B	B	C	C	C
Approach Delay (s)		74.3			23.7			17.5			25.9	
Approach LOS		E			C			B			C	

Intersection Summary			
HCM Average Control Delay	44.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91		0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085		3433	1799		3433	1863	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085		3433	1799		3433	1863	
Volume (vph)	50	590	41	118	517	0	56	290	86	50	354	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	641	45	128	562	0	61	315	93	54	385	0
RTOR Reduction (vph)	0	0	35	0	0	0	0	16	0	0	0	0
Lane Group Flow (vph)	54	641	10	128	562	0	61	392	0	54	385	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	2.4	13.7	13.7	3.2	14.5		3.2	23.9		3.2	23.9	
Effective Green, g (s)	2.4	13.7	13.7	3.2	14.5		3.2	23.9		3.2	23.9	
Actuated g/C Ratio	0.04	0.23	0.23	0.05	0.24		0.05	0.40		0.05	0.40	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	137	1161	361	183	1229		183	717		183	742	
v/s Ratio Prot	0.02	c0.13		c0.04	0.11		c0.02	c0.22		0.02	0.21	
v/s Ratio Perm			0.01									
v/c Ratio	0.39	0.55	0.03	0.70	0.46		0.33	0.55		0.30	0.52	
Uniform Delay, d1	28.1	20.4	18.0	27.9	19.4		27.4	13.9		27.3	13.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	0.6	0.0	11.1	0.3		1.1	3.0		0.9	2.6	
Delay (s)	30.0	21.0	18.0	39.0	19.7		28.5	16.9		28.2	16.3	
Level of Service	C	C	B	D	B		C	B		C	B	
Approach Delay (s)		21.5			23.3			18.4			17.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.91		0.97	0.91		0.76
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5085		3433	5085		3610
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5085		3433	5085		3610
Volume (vph)	518	0	1512	515	0	1262
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	563	0	1643	560	0	1372
RTOR Reduction (vph)	0	0	0	0	0	52
Lane Group Flow (vph)	563	0	1643	560	0	1320
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	13.0		39.0	60.0		39.0
Effective Green, g (s)	13.0		39.0	60.0		39.0
Actuated g/C Ratio	0.22		0.65	1.00		0.65
Clearance Time (s)	4.0		4.0	3.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	1102		2231	5085		2347
v/s Ratio Prot	c0.11		c0.48	0.11		0.37
v/s Ratio Perm						
v/c Ratio	0.51		0.74	0.11		0.56
Uniform Delay, d1	20.7		7.0	0.0		5.8
Progression Factor	0.37		1.00	1.00		1.00
Incremental Delay, d2	0.3		1.3	0.0		0.3
Delay (s)	8.0		8.3	0.0		6.1
Level of Service	A		A	A		A
Approach Delay (s)	8.0			6.2	6.1	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1683		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1683		3433	1863	1583
Volume (vph)	8	1859	50	420	2073	231	43	161	293	299	164	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	2021	54	457	2253	251	47	175	318	325	178	26
RTOR Reduction (vph)	0	0	25	0	0	44	0	62	0	0	0	19
Lane Group Flow (vph)	9	2021	29	457	2253	207	47	431	0	325	178	7
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	45.2	45.2	14.0	58.4	58.4	3.2	24.8		10.0	31.6	31.6
Effective Green, g (s)	0.8	45.2	45.2	14.0	58.4	58.4	3.2	24.8		10.0	31.6	31.6
Actuated g/C Ratio	0.01	0.41	0.41	0.13	0.53	0.53	0.03	0.23		0.09	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	25	2089	650	437	2700	840	100	379		312	535	455
v/s Ratio Prot	0.00	c0.40		c0.13	0.44		0.01	c0.26		c0.09	0.10	
v/s Ratio Perm			0.02			0.13						0.00
v/c Ratio	0.36	0.97	0.05	1.05	0.83	0.25	0.47	1.14		1.04	0.33	0.02
Uniform Delay, d1	54.3	31.7	19.4	48.0	21.7	13.9	52.6	42.6		50.0	30.9	28.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.7	12.8	0.0	55.5	2.4	0.2	3.5	89.1		62.2	1.7	0.1
Delay (s)	63.0	44.5	19.5	103.5	24.1	14.1	56.0	131.7		112.2	32.6	28.1
Level of Service	E	D	B	F	C	B	E	F		F	C	C
Approach Delay (s)		43.9			35.5			125.1			81.3	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM Average Control Delay	50.2	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	573	1757	128	162	1914	299	299	290	96	192	314	515
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	623	1910	139	176	2080	325	325	315	104	209	341	560
RTOR Reduction (vph)	0	0	38	0	0	85	0	0	83	0	0	197
Lane Group Flow (vph)	623	1910	101	176	2080	240	325	315	21	209	341	363
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.0	57.7	57.7	10.3	47.0	47.0	11.0	24.8	24.8	11.2	25.0	25.0
Effective Green, g (s)	21.0	57.7	57.7	10.3	47.0	47.0	11.0	24.8	24.8	11.2	25.0	25.0
Actuated g/C Ratio	0.18	0.48	0.48	0.09	0.39	0.39	0.09	0.21	0.21	0.09	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	601	2445	761	295	1992	620	315	731	327	320	737	330
v/s Ratio Prot	c0.18	0.38		0.05	c0.41		c0.09	0.09		0.06	0.10	
v/s Ratio Perm			0.06			0.15			0.01			c0.23
v/c Ratio	1.04	0.78	0.13	0.60	1.04	0.39	1.03	0.43	0.07	0.65	0.46	1.10
Uniform Delay, d1	49.5	25.9	17.3	52.8	36.5	26.2	54.5	41.5	38.3	52.5	41.6	47.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	46.5	1.7	0.1	3.2	32.8	0.4	59.1	1.9	0.4	4.7	2.1	79.0
Delay (s)	96.0	27.6	17.4	56.1	69.3	26.6	113.6	43.3	38.7	57.3	43.7	126.5
Level of Service	F	C	B	E	E	C	F	D	D	E	D	F
Approach Delay (s)		43.0			63.0			73.4			88.0	
Approach LOS		D			E			E			F	

Intersection Summary			
HCM Average Control Delay	60.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Volume (vph)	18	2024	1	4	2366	60	2	0	4	60	1	26
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	2200	1	4	2572	65	2	0	4	65	1	28
RTOR Reduction (vph)	0	0	0	0	0	12	0	3	0	0	0	24
Lane Group Flow (vph)	20	2200	1	4	2572	53	2	1	0	65	1	4
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	2.7	63.8	63.8	1.2	62.3	62.3	5.6	15.0		4.0	13.4	13.4
Effective Green, g (s)	2.7	63.8	63.8	1.2	62.3	62.3	5.6	15.0		4.0	13.4	13.4
Actuated g/C Ratio	0.03	0.64	0.64	0.01	0.62	0.62	0.06	0.15		0.04	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	93	3244	1010	41	3168	986	192	451		137	250	212
v/s Ratio Prot	c0.01	0.43		0.00	c0.51		0.00	0.00		c0.02	0.00	
v/s Ratio Perm			0.00			0.03						c0.00
v/c Ratio	0.22	0.68	0.00	0.10	0.81	0.05	0.01	0.00		0.47	0.00	0.02
Uniform Delay, d1	47.6	11.5	6.6	48.9	14.4	7.4	44.6	36.1		47.0	37.5	37.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	0.6	0.0	1.0	1.7	0.0	0.0	0.0		2.6	0.0	0.0
Delay (s)	48.8	12.1	6.6	49.9	16.1	7.4	44.6	36.1		49.6	37.5	37.6
Level of Service	D	B	A	D	B	A	D	D		D	D	D
Approach Delay (s)		12.4			15.9			39.0			45.9	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	120	1711	402	284	2189	89	398	164	397	42	124	119
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	1860	437	309	2379	97	433	178	432	46	135	129
RTOR Reduction (vph)	0	0	179	0	0	22	0	0	120	0	0	74
Lane Group Flow (vph)	130	1860	258	309	2379	75	433	178	312	46	135	55
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	36.0	36.0	10.0	42.0	42.0	11.0	25.6	25.6	2.4	17.0	17.0
Effective Green, g (s)	4.0	36.0	36.0	10.0	42.0	42.0	11.0	25.6	25.6	2.4	17.0	17.0
Actuated g/C Ratio	0.04	0.40	0.40	0.11	0.47	0.47	0.12	0.28	0.28	0.03	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	153	2034	633	381	2373	739	420	1007	450	92	668	299
v/s Ratio Prot	0.04	0.37		c0.09	c0.47		c0.13	0.05		0.01	0.04	
v/s Ratio Perm			0.16			0.05			c0.20			0.03
v/c Ratio	0.85	0.91	0.41	0.81	1.00	0.10	1.03	0.18	0.69	0.50	0.20	0.18
Uniform Delay, d1	42.7	25.5	19.3	39.1	24.0	13.4	39.5	24.3	28.7	43.2	30.8	30.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	33.2	6.9	0.4	12.3	19.1	0.1	52.1	0.4	8.5	4.2	0.7	1.4
Delay (s)	75.9	32.4	19.8	51.4	43.1	13.5	91.6	24.6	37.2	47.4	31.5	32.0
Level of Service	E	C	B	D	D	B	F	C	D	D	C	C
Approach Delay (s)		32.5			43.0			57.6			34.1	
Approach LOS		C			D			E			C	

Intersection Summary			
HCM Average Control Delay	41.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	309	1780	244	203	2177	362	210	274	183	250	216	463
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	336	1935	265	221	2366	393	228	298	199	272	235	503
RTOR Reduction (vph)	0	0	37	0	0	45	0	0	125	0	0	114
Lane Group Flow (vph)	336	1935	228	221	2366	348	228	298	74	272	235	389
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.0	53.0	53.0	9.0	51.0	51.0	7.0	19.2	19.2	12.8	25.0	25.0
Effective Green, g (s)	11.0	53.0	53.0	9.0	51.0	51.0	7.0	19.2	19.2	12.8	25.0	25.0
Actuated g/C Ratio	0.10	0.48	0.48	0.08	0.46	0.46	0.06	0.17	0.17	0.12	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	2450	763	281	2358	734	218	618	276	399	804	360
v/s Ratio Prot	c0.10	0.38		0.06	c0.47		c0.07	0.08		0.08	0.07	
v/s Ratio Perm			0.14			0.22			0.05			c0.25
v/c Ratio	0.98	0.79	0.30	0.79	1.00	0.47	1.05	0.48	0.27	0.68	0.29	1.08
Uniform Delay, d1	49.4	23.8	17.3	49.6	29.5	20.3	51.5	40.9	39.3	46.6	35.2	42.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	42.6	1.8	0.2	13.5	19.3	0.5	73.5	2.7	2.4	4.8	0.9	70.3
Delay (s)	91.9	25.6	17.5	63.0	48.8	20.8	125.0	43.6	41.7	51.4	36.1	112.8
Level of Service	F	C	B	E	D	C	F	D	D	D	D	F
Approach Delay (s)		33.5			46.2			68.7			78.4	
Approach LOS		C			D			E			E	

Intersection Summary			
HCM Average Control Delay	48.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	5085	1583
Volume (vph)	98	1951	109	200	2540	219	90	324	97	123	365	139
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	2121	118	217	2761	238	98	352	105	134	397	151
RTOR Reduction (vph)	0	0	55	0	0	62	0	0	70	0	0	70
Lane Group Flow (vph)	107	2121	64	217	2761	176	98	352	35	134	397	81
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	45.0	45.0	8.0	49.0	49.0	3.2	17.0	17.0	4.0	17.8	17.8
Effective Green, g (s)	4.0	45.0	45.0	8.0	49.0	49.0	3.2	17.0	17.0	4.0	17.8	17.8
Actuated g/C Ratio	0.04	0.50	0.50	0.09	0.54	0.54	0.04	0.19	0.19	0.04	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	153	2543	792	305	2769	862	122	668	299	153	1006	313
v/s Ratio Prot	0.03	0.42		c0.06	c0.54		0.03	c0.10		c0.04	0.08	
v/s Ratio Perm			0.04			0.11			0.02			0.05
v/c Ratio	0.70	0.83	0.08	0.71	1.00	0.20	0.80	0.53	0.12	0.88	0.39	0.26
Uniform Delay, d1	42.4	19.3	11.7	39.9	20.4	10.5	43.1	32.9	30.3	42.8	31.4	30.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.85	1.36	1.00	1.00	1.00
Incremental Delay, d2	13.1	2.5	0.0	7.6	16.3	0.1	25.5	2.4	0.6	38.8	1.2	2.0
Delay (s)	55.5	21.8	11.8	47.5	36.7	10.6	54.3	30.4	41.7	81.5	32.6	32.5
Level of Service	E	C	B	D	D	B	D	C	D	F	C	C
Approach Delay (s)		22.8			35.5			36.7			42.2	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	31.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	739	1517	93	96	2027	168	246	1162	58	277	1329	770
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	803	1649	101	104	2203	183	267	1263	63	301	1445	837
RTOR Reduction (vph)	0	0	52	0	0	50	0	0	47	0	0	1
Lane Group Flow (vph)	803	1649	49	104	2203	133	267	1263	16	301	1445	836
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	20.0	44.7	44.7	13.3	38.0	38.0	7.0	28.0	28.0	8.0	29.0	49.0
Effective Green, g (s)	20.0	44.7	44.7	13.3	38.0	38.0	7.0	28.0	28.0	8.0	29.0	49.0
Actuated g/C Ratio	0.18	0.41	0.41	0.12	0.35	0.35	0.06	0.25	0.25	0.07	0.26	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	624	2066	643	415	1757	547	218	1294	403	250	1341	763
v/s Ratio Prot	c0.23	0.32		0.03	c0.43		0.08	0.25		c0.09	0.28	c0.20
v/s Ratio Perm			0.03			0.08			0.01			0.33
v/c Ratio	1.29	0.80	0.08	0.25	1.25	0.24	1.22	0.98	0.04	1.20	1.08	1.10
Uniform Delay, d1	45.0	28.7	20.0	43.8	36.0	25.7	51.5	40.7	30.9	51.0	40.5	30.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	140.9	2.2	0.1	0.3	119.1	0.2	134.9	19.9	0.2	123.4	48.4	62.1
Delay (s)	185.9	30.9	20.0	44.2	155.1	25.9	186.4	60.6	31.1	174.4	88.9	92.6
Level of Service	F	C	C	D	F	C	F	E	C	F	F	F
Approach Delay (s)		79.3			141.0			80.5			100.0	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	102.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	150	1832	322	437	1654	341	133	799	112	291	1053	385
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	1991	350	475	1798	371	145	868	122	316	1145	418
RTOR Reduction (vph)	0	0	90	0	0	112	0	0	83	0	0	140
Lane Group Flow (vph)	163	1991	260	475	1798	259	145	868	39	316	1145	278
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.8	36.0	36.0	13.0	41.2	41.2	4.0	16.0	16.0	9.0	21.0	21.0
Effective Green, g (s)	7.8	36.0	36.0	13.0	41.2	41.2	4.0	16.0	16.0	9.0	21.0	21.0
Actuated g/C Ratio	0.09	0.40	0.40	0.14	0.46	0.46	0.04	0.18	0.18	0.10	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	298	2034	633	496	2328	725	153	904	281	343	1187	369
v/s Ratio Prot	0.05	c0.39		c0.14	0.35		0.04	0.17		c0.09	c0.23	
v/s Ratio Perm			0.16			0.16			0.02			0.18
v/c Ratio	0.55	0.98	0.41	0.96	0.77	0.36	0.95	0.96	0.14	0.92	0.96	0.75
Uniform Delay, d1	39.4	26.6	19.4	38.2	20.5	15.8	42.9	36.7	31.2	40.1	34.1	32.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	15.1	0.4	29.6	1.6	0.3	56.6	21.7	1.0	29.3	18.9	13.3
Delay (s)	41.5	41.7	19.8	67.8	22.1	16.1	99.5	58.4	32.2	69.5	53.0	45.3
Level of Service	D	D	B	E	C	B	F	E	C	E	D	D
Approach Delay (s)		38.6			29.5			60.8			54.1	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM Average Control Delay	42.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			3433	1583
Volume (vph)	483	142	0	0	57	103
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	525	154	0	0	62	112
RTOR Reduction (vph)	0	92	0	0	0	82
Lane Group Flow (vph)	525	62	0	0	62	30
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	9.6	9.6			6.4	6.4
Effective Green, g (s)	9.6	9.6			6.4	6.4
Actuated g/C Ratio	0.40	0.40			0.27	0.27
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1416	633			915	422
v/s Ratio Prot	c0.15				0.02	
v/s Ratio Perm		0.04				c0.02
v/c Ratio	0.37	0.10			0.07	0.07
Uniform Delay, d1	5.1	4.5			6.6	6.6
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	0.2	0.1			0.0	0.1
Delay (s)	5.2	4.6			6.6	6.6
Level of Service	A	A			A	A
Approach Delay (s)	5.1			0.0	6.6	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	5.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	24.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	236	0	60	264	1	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	257	0	65	287	1	77
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			257		530	128
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			257		530	128
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	91
cM capacity (veh/h)			1305		455	898

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SW 1
Volume Total	128	128	0	65	143	143	78
Volume Left	0	0	0	65	0	0	1
Volume Right	0	0	0	0	0	0	77
cSH	1700	1700	1700	1305	1700	1700	911
Volume to Capacity	0.08	0.08	0.00	0.05	0.08	0.08	0.09
Queue Length 95th (ft)	0	0	0	4	0	0	7
Control Delay (s)	0.0	0.0	0.0	7.9	0.0	0.0	9.4
Lane LOS				A			A
Approach Delay (s)	0.0			1.5			9.4
Approach LOS							A

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	448	69	126	400	76	103
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	487	75	137	435	83	112

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	487	75	572	195
Volume Left (vph)	487	0	0	83
Volume Right (vph)	0	75	435	0
Hadj (s)	0.53	-0.67	-0.42	0.12
Departure Headway (s)	7.3	6.1	5.9	7.1
Degree Utilization, x	0.99	0.13	0.93	0.39
Capacity (veh/h)	487	579	615	503
Control Delay (s)	65.1	8.8	45.3	14.5
Approach Delay (s)	57.6		45.3	14.5
Approach LOS	F		E	B

Intersection Summary			
Delay	46.0		
HCM Level of Service	E		
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.91	0.91	
Frt		0.85	1.00	1.00	1.00	
Flt Protected		1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1583	1770	5085	5085	
Flt Permitted		1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1583	1770	5085	5085	
Volume (vph)	0	467	473	1262	1512	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	508	514	1372	1643	0
RTOR Reduction (vph)	0	3	0	0	0	0
Lane Group Flow (vph)	0	505	514	1372	1643	0
Turn Type		Perm	Prot			Perm
Protected Phases	1!		5!	2	6!	
Permitted Phases		1				6
Actuated Green, G (s)		14.9	13.9	16.1	17.1	
Effective Green, g (s)		14.9	13.9	16.1	17.1	
Actuated g/C Ratio		0.38	0.36	0.41	0.44	
Clearance Time (s)		4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		605	631	2099	2230	
v/s Ratio Prot			0.29	0.27	c0.32	
v/s Ratio Perm		c0.32				
v/c Ratio		0.83	0.81	0.65	0.74	
Uniform Delay, d1		10.9	11.4	9.2	9.1	
Progression Factor		1.00	1.00	1.00	1.00	
Incremental Delay, d2		9.7	8.0	1.6	2.2	
Delay (s)		20.6	19.3	10.8	11.3	
Level of Service		C	B	B	B	
Approach Delay (s)	20.6			13.1	11.3	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	39.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	11	139	143	279	136	25	170	1999	215	30	2171	26
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	151	155	303	148	27	185	2173	234	33	2360	28
RTOR Reduction (vph)	0	0	71	0	0	21	0	0	75	0	0	9
Lane Group Flow (vph)	12	151	84	303	148	6	185	2173	159	33	2360	19
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	13.4	13.4	8.0	20.6	20.6	5.0	49.4	49.4	2.3	46.7	46.7
Effective Green, g (s)	0.8	13.4	13.4	8.0	20.6	20.6	5.0	49.4	49.4	2.3	46.7	46.7
Actuated g/C Ratio	0.01	0.15	0.15	0.09	0.23	0.23	0.06	0.55	0.55	0.03	0.52	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	31	532	238	308	818	366	193	2819	878	89	2665	830
v/s Ratio Prot	0.00	0.04		c0.09	0.04		c0.05	c0.43		0.01	c0.46	
v/s Ratio Perm			c0.05			0.00			0.10			0.01
v/c Ratio	0.39	0.28	0.35	0.98	0.18	0.02	0.96	0.77	0.18	0.37	0.89	0.02
Uniform Delay, d1	43.9	33.6	34.0	40.5	27.5	26.4	41.9	15.4	9.8	42.7	18.8	10.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	0.3	0.9	46.5	0.1	0.0	52.2	2.1	0.5	2.6	4.8	0.1
Delay (s)	51.8	33.9	34.9	87.0	27.6	26.5	94.2	17.6	10.3	45.3	23.6	10.3
Level of Service	D	C	C	F	C	C	F	B	B	D	C	B
Approach Delay (s)		35.0			65.2			22.4			23.8	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM Average Control Delay	27.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	89.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Volume (vph)	202	182	173	35	20	267
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	220	198	188	38	22	290
RTOR Reduction (vph)	0	0	0	32	0	196
Lane Group Flow (vph)	220	198	188	6	22	94
Turn Type	Prot			custom		custom
Protected Phases	7	4				
Permitted Phases			8	8	6	6
Actuated Green, G (s)	7.7	17.7	6.0	6.0	12.3	12.3
Effective Green, g (s)	7.7	17.7	6.0	6.0	12.3	12.3
Actuated g/C Ratio	0.20	0.47	0.16	0.16	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	359	1648	559	250	573	512
v/s Ratio Prot	c0.12	0.06				
v/s Ratio Perm			c0.05	0.00	0.01	c0.06
v/c Ratio	0.61	0.12	0.34	0.02	0.04	0.18
Uniform Delay, d1	13.8	5.7	14.2	13.5	8.8	9.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	0.0	0.4	0.0	0.0	0.2
Delay (s)	16.9	5.8	14.6	13.6	8.8	9.4
Level of Service	B	A	B	B	A	A
Approach Delay (s)		11.6	14.4		9.4	
Approach LOS		B	B		A	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	38.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1784		1770	1863	1583	1770	1857		1770	1863	1583
Flt Permitted	0.62	1.00		0.60	1.00	1.00	0.62	1.00		0.66	1.00	1.00
Satd. Flow (perm)	1156	1784		1124	1863	1583	1146	1857		1230	1863	1583
Volume (vph)	36	166	65	3	202	86	144	137	3	103	212	47
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	180	71	3	220	93	157	149	3	112	230	51
RTOR Reduction (vph)	0	43	0	0	0	68	0	2	0	0	0	28
Lane Group Flow (vph)	39	208	0	3	220	25	157	150	0	112	230	23
Turn Type	Perm			Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)	7.6	7.6		7.6	7.6	7.6	13.0	13.0		13.0	13.0	13.0
Effective Green, g (s)	7.6	7.6		7.6	7.6	7.6	13.0	13.0		13.0	13.0	13.0
Actuated g/C Ratio	0.27	0.27		0.27	0.27	0.27	0.45	0.45		0.45	0.45	0.45
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	307	474		299	495	421	521	844		559	847	720
v/s Ratio Prot		0.12			c0.12			0.08			0.12	
v/s Ratio Perm	0.03			0.00		0.02	c0.14			0.09		0.01
v/c Ratio	0.13	0.44		0.01	0.44	0.06	0.30	0.18		0.20	0.27	0.03
Uniform Delay, d1	8.0	8.7		7.7	8.7	7.8	4.9	4.6		4.7	4.9	4.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.6		0.0	0.6	0.1	0.3	0.1		0.2	0.2	0.0
Delay (s)	8.2	9.4		7.7	9.4	7.9	5.3	4.7		4.9	5.0	4.3
Level of Service	A	A		A	A	A	A	A		A	A	A
Approach Delay (s)		9.2			8.9			5.0			4.9	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	28.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86		0.95	0.95		0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.97	
Satd. Flow (prot)	1770	5085	1583	1770	6405		1681	1504		1681	1632	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.70	
Satd. Flow (perm)	1770	5085	1583	1770	6405		1681	1504		1681	1180	
Volume (vph)	22	2259	458	27	3279	8	6	0	135	720	0	124
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2455	498	29	3564	9	7	0	147	783	0	135
RTOR Reduction (vph)	0	0	176	0	0	0	0	130	0	0	10	0
Lane Group Flow (vph)	24	2455	322	29	3573	0	7	17	0	476	432	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	2.3	56.2	56.2	2.3	56.2		0.7	13.4		28.1	44.8	
Effective Green, g (s)	2.3	56.2	56.2	2.3	56.2		0.7	13.4		28.1	44.8	
Actuated g/C Ratio	0.02	0.49	0.49	0.02	0.49		0.01	0.12		0.24	0.39	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	35	2479	772	35	3122		10	175		410	569	
v/s Ratio Prot	0.01	0.48		c0.02	c0.56		0.00	0.00		c0.28	0.18	
v/s Ratio Perm			0.20					0.01			c0.11	
v/c Ratio	0.69	0.99	0.42	0.83	1.14		0.70	0.10		1.16	0.76	
Uniform Delay, d1	56.1	29.3	19.0	56.3	29.6		57.2	45.5		43.6	30.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	43.6	15.9	1.7	84.5	69.3		120.0	0.2		96.3	5.8	
Delay (s)	99.7	45.2	20.7	140.8	98.8		177.2	45.8		139.9	36.3	
Level of Service	F	D	C	F	F		F	D		F	D	
Approach Delay (s)		41.6			99.2			51.8			90.0	
Approach LOS		D			F			D			F	

Intersection Summary			
HCM Average Control Delay	74.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	115.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539		1770	1671	
Flt Permitted	0.73	1.00	1.00	0.75	1.00	1.00	0.71	1.00		0.74	1.00	
Satd. Flow (perm)	1354	1863	1583	1395	1863	1583	1325	3539		1381	1671	
Volume (vph)	24	12	4	2	42	61	8	21	0	54	20	44
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	13	4	2	46	66	9	23	0	59	22	48
RTOR Reduction (vph)	0	0	3	0	0	54	0	0	0	0	17	0
Lane Group Flow (vph)	26	13	1	2	46	12	9	23	0	59	54	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	8.5	8.5	8.5	8.5	8.5	8.5	31.5	31.5		31.5	31.5	
Effective Green, g (s)	8.5	8.5	8.5	8.5	8.5	8.5	31.5	31.5		31.5	31.5	
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18	0.18	0.66	0.66		0.66	0.66	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	240	330	280	247	330	280	870	2322		906	1097	
v/s Ratio Prot		0.01			c0.02			0.01			0.03	
v/s Ratio Perm	0.02		0.00	0.00		0.01	0.01			c0.04		
v/c Ratio	0.11	0.04	0.00	0.01	0.14	0.04	0.01	0.01		0.07	0.05	
Uniform Delay, d1	16.6	16.4	16.3	16.3	16.7	16.4	2.9	2.9		3.0	2.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.0	0.0	0.0	0.2	0.1	0.0	0.0		0.0	0.0	
Delay (s)	16.8	16.4	16.3	16.3	16.9	16.4	2.9	2.9		3.0	2.9	
Level of Service	B	B	B	B	B	B	A	A		A	A	
Approach Delay (s)		16.6			16.6			2.9			3.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.08		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0				4.0		4.0
Lane Util. Factor		0.91			0.86	1.00				0.97		0.88
Frt		1.00			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085			6408	1583				3433		2787
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085			6408	1583				3433		2787
Volume (vph)	0	1827	0	0	3200	214	0	0	0	625	0	906
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1986	0	0	3478	233	0	0	0	679	0	985
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	8
Lane Group Flow (vph)	0	1986	0	0	3478	233	0	0	0	679	0	977
Turn Type						Free				custom		custom
Protected Phases		2			6							
Permitted Phases						Free				8		8
Actuated Green, G (s)		44.0			44.0	80.0				28.0		28.0
Effective Green, g (s)		44.0			44.0	80.0				28.0		28.0
Actuated g/C Ratio		0.55			0.55	1.00				0.35		0.35
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		2797			3524	1583				1202		975
v/s Ratio Prot		0.39			c0.54							
v/s Ratio Perm						0.15				0.20		c0.35
v/c Ratio		0.71			0.99	0.15				0.56		1.00
Uniform Delay, d1		13.3			17.7	0.0				21.1		26.0
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		1.6			12.4	0.2				0.6		29.2
Delay (s)		14.8			30.1	0.2				21.7		55.2
Level of Service		B			C	A				C		E
Approach Delay (s)		14.8			28.2			0.0			41.5	
Approach LOS		B			C			A			D	

Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0		4.0			
Lane Util. Factor		0.91	1.00		0.91		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		5085	1583		5085		1770		1583			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		5085	1583		5085		1770		1583			
Volume (vph)	0	2041	352	0	2705	0	37	0	189	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2218	383	0	2940	0	40	0	205	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	2218	383	0	2940	0	40	0	204	0	0	0
Turn Type			Free				custom		custom			
Protected Phases		2			6							
Permitted Phases			Free				4		4			
Actuated Green, G (s)		42.3	62.9		42.3		12.6		12.6			
Effective Green, g (s)		42.3	62.9		42.3		12.6		12.6			
Actuated g/C Ratio		0.67	1.00		0.67		0.20		0.20			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		3420	1583		3420		355		317			
v/s Ratio Prot		0.44			c0.58							
v/s Ratio Perm			0.24				0.02		c0.13			
v/c Ratio		0.65	0.24		0.86		0.11		0.64			
Uniform Delay, d1		6.0	0.0		8.0		20.6		23.1			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		1.0	0.4		3.1		0.1		4.4			
Delay (s)		6.9	0.4		11.1		20.7		27.5			
Level of Service		A	A		B		C		C			
Approach Delay (s)		6.0			11.1			26.4			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	62.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	2787
Volume (vph)	99	77	780	101	140	1126
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	84	848	110	152	1224
RTOR Reduction (vph)	0	74	0	0	0	255
Lane Group Flow (vph)	108	10	848	110	152	969
Turn Type		Perm	Prot			pm+ov
Protected Phases	6		5	2	4	5
Permitted Phases		6				4
Actuated Green, G (s)	8.5	8.5	41.2	53.7	9.1	50.3
Effective Green, g (s)	8.5	8.5	41.2	53.7	9.1	50.3
Actuated g/C Ratio	0.12	0.12	0.58	0.76	0.13	0.71
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	425	190	1030	2684	228	2137
v/s Ratio Prot	c0.03		c0.48	0.03	c0.09	0.26
v/s Ratio Perm		0.01				0.08
v/c Ratio	0.25	0.05	0.82	0.04	0.67	0.45
Uniform Delay, d1	28.3	27.6	11.9	2.1	29.4	4.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	5.4	0.0	7.2	0.2
Delay (s)	28.6	27.7	17.3	2.1	36.6	4.5
Level of Service	C	C	B	A	D	A
Approach Delay (s)	28.2			15.6	8.1	
Approach LOS	C			B	A	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00		0.95	0.95	1.00
Frt	1.00	0.96		1.00	1.00	0.85		0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96		0.95	0.96	1.00
Satd. Flow (prot)	1770	3394		1770	3539	1583		1750		1681	1704	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96		0.95	0.96	1.00
Satd. Flow (perm)	1770	3394		1770	3539	1583		1750		1681	1704	1583
Volume (vph)	539	176	66	51	307	714	200	1	37	197	27	668
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	586	191	72	55	334	776	217	1	40	214	29	726
RTOR Reduction (vph)	0	38	0	0	0	503	0	7	0	0	0	478
Lane Group Flow (vph)	586	225	0	55	334	273	0	251	0	118	125	248
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	33.0	45.5		6.2	18.7	18.7		15.8		16.5	16.5	16.5
Effective Green, g (s)	33.0	45.5		6.2	18.7	18.7		15.8		16.5	16.5	16.5
Actuated g/C Ratio	0.33	0.46		0.06	0.19	0.19		0.16		0.16	0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	584	1544		110	662	296		277		277	281	261
v/s Ratio Prot	c0.33	0.07		0.03	0.09			c0.14		0.07	0.07	
v/s Ratio Perm						c0.17						c0.16
v/c Ratio	1.00	0.15		0.50	0.50	0.92		0.91		0.43	0.44	0.95
Uniform Delay, d1	33.5	15.9		45.4	36.5	39.9		41.4		37.5	37.6	41.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	38.1	0.2		3.5	2.7	35.6		30.7		1.1	1.1	42.4
Delay (s)	71.6	16.1		48.9	39.2	75.5		72.1		38.6	38.7	83.7
Level of Service	E	B		D	D	E		E		D	D	F
Approach Delay (s)		54.4			63.8			72.1			72.4	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	64.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	1863	1583
Flt Permitted	0.26	1.00	1.00	0.22	1.00	1.00	0.75	1.00	1.00	0.75	1.00	1.00
Satd. Flow (perm)	484	3539	1583	409	3539	1583	1393	3539	1583	1402	1863	1583
Volume (vph)	101	979	56	56	782	75	56	6	9	60	14	27
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	1064	61	61	850	82	61	7	10	65	15	29
RTOR Reduction (vph)	0	0	35	0	0	47	0	0	6	0	0	18
Lane Group Flow (vph)	110	1064	26	61	850	35	61	7	4	65	15	11
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	18.2	18.2	18.2	18.2	18.2	18.2	16.1	16.1	16.1	16.1	16.1	16.1
Effective Green, g (s)	18.2	18.2	18.2	18.2	18.2	18.2	16.1	16.1	16.1	16.1	16.1	16.1
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43	0.43	0.38	0.38	0.38	0.38	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	208	1523	681	176	1523	681	530	1347	603	534	709	603
v/s Ratio Prot		c0.30			0.24			0.00			0.01	
v/s Ratio Perm	0.23		0.02	0.15		0.02	0.04		0.00	c0.05		0.01
v/c Ratio	0.53	0.70	0.04	0.35	0.56	0.05	0.12	0.01	0.01	0.12	0.02	0.02
Uniform Delay, d1	8.9	9.8	7.0	8.1	9.0	7.0	8.5	8.1	8.1	8.5	8.2	8.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	1.4	0.0	1.2	0.4	0.0	0.4	0.0	0.0	0.5	0.1	0.1
Delay (s)	11.3	11.2	7.0	9.3	9.5	7.1	8.9	8.1	8.2	9.0	8.2	8.2
Level of Service	B	B	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		11.0			9.3			8.8			8.7	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	42.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3410		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3410		1770	3539	1583	1770	3539	1583
Volume (vph)	208	859	95	932	343	110	316	1181	103	65	481	1012
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	226	934	103	1013	373	120	343	1284	112	71	523	1100
RTOR Reduction (vph)	0	0	69	0	24	0	0	0	55	0	0	385
Lane Group Flow (vph)	226	934	34	1013	469	0	343	1284	57	71	523	715
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	19.4	23.0	23.0	37.0	40.6		13.0	40.0	40.0	4.0	31.0	31.0
Effective Green, g (s)	19.4	23.0	23.0	37.0	40.6		13.0	40.0	40.0	4.0	31.0	31.0
Actuated g/C Ratio	0.16	0.19	0.19	0.31	0.34		0.11	0.33	0.33	0.03	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	286	678	303	546	1154		192	1180	528	59	914	409
v/s Ratio Prot	0.13	c0.26		c0.57	0.14		c0.19	0.36		0.04	0.15	
v/s Ratio Perm			0.02						0.04			c0.45
v/c Ratio	0.79	1.38	0.11	1.86	0.41		1.79	1.09	0.11	1.20	0.57	1.75
Uniform Delay, d1	48.3	48.5	40.1	41.5	30.5		53.5	40.0	27.7	58.0	38.7	44.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.8	179.1	0.2	391.9	0.2		374.1	53.6	0.1	182.2	0.9	346.7
Delay (s)	62.1	227.6	40.2	433.4	30.7		427.6	93.6	27.8	240.2	39.6	391.2
Level of Service	E	F	D	F	C		F	F	C	F	D	F
Approach Delay (s)		182.7			301.6			155.2			276.3	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	229.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	125.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	1863	2787	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	1770	1863	2787	1770	5085	1583	3433	5085	1583
Volume (vph)	272	141	22	148	212	653	20	1432	98	631	1850	413
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	296	153	24	161	230	710	22	1557	107	686	2011	449
RTOR Reduction (vph)	0	0	20	0	0	52	0	0	50	0	0	99
Lane Group Flow (vph)	296	153	4	161	230	658	22	1557	57	686	2011	350
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.1	15.0	15.0	12.2	14.1	31.2	1.5	27.6	27.6	17.1	43.2	56.3
Effective Green, g (s)	13.1	15.0	15.0	12.2	14.1	31.2	1.5	27.6	27.6	17.1	43.2	56.3
Actuated g/C Ratio	0.15	0.17	0.17	0.14	0.16	0.35	0.02	0.31	0.31	0.19	0.49	0.64
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	512	318	270	246	299	1116	30	1597	497	668	2499	1086
v/s Ratio Prot	0.09	0.08		c0.09	c0.12	c0.11	0.01	c0.31		c0.20	0.40	0.05
v/s Ratio Perm			0.00			0.12			0.04			0.17
v/c Ratio	0.58	0.48	0.02	0.65	0.77	0.59	0.73	0.97	0.11	1.03	0.80	0.32
Uniform Delay, d1	34.8	32.9	30.3	35.9	35.3	23.1	43.0	29.8	21.5	35.4	18.8	7.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	1.1	0.0	6.1	11.3	0.8	63.0	16.8	0.1	41.9	2.0	0.2
Delay (s)	36.4	34.1	30.3	42.0	46.6	23.9	106.0	46.6	21.6	77.3	20.8	7.3
Level of Service	D	C	C	D	D	C	F	D	C	E	C	A
Approach Delay (s)		35.4			31.3			45.8			31.2	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	87.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	4.0
Lane Util. Factor		1.00			1.00			1.00			1.00	1.00
Frt		0.99			1.00			1.00			1.00	0.85
Flt Protected		1.00			1.00			0.97			1.00	1.00
Satd. Flow (prot)		1839			1862			1801			1857	1583
Flt Permitted		0.99			1.00			0.81			0.98	1.00
Satd. Flow (perm)		1826			1862			1505			1835	1583
Volume (vph)	3	147	15	0	322	1	34	16	0	3	44	13
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	160	16	0	350	1	37	17	0	3	48	14
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	0	10
Lane Group Flow (vph)	0	170	0	0	351	0	0	54	0	0	51	4
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		9.9			9.9			8.0			8.0	8.0
Effective Green, g (s)		9.9			9.9			8.0			8.0	8.0
Actuated g/C Ratio		0.38			0.38			0.31			0.31	0.31
Clearance Time (s)		4.0			4.0			4.0			4.0	4.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		698			712			465			567	489
v/s Ratio Prot					c0.19							
v/s Ratio Perm		0.09						c0.04			0.03	0.00
v/c Ratio		0.24			0.49			0.12			0.09	0.01
Uniform Delay, d1		5.4			6.1			6.4			6.4	6.2
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.2			0.5			0.1			0.1	0.0
Delay (s)		5.6			6.6			6.5			6.4	6.2
Level of Service		A			A			A			A	A
Approach Delay (s)		5.6			6.6			6.5			6.4	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	25.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0				4.0		4.0
Lane Util. Factor		0.91	1.00		0.91	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085	1583		5085	1583				1770		1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085	1583		5085	1583				1770		1583
Volume (vph)	0	1542	553	0	2159	149	0	0	0	556	0	466
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1676	601	0	2347	162	0	0	0	604	0	507
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	1676	601	0	2347	162	0	0	0	604	0	506
Turn Type			Free			Free				custom		custom
Protected Phases		4			8							
Permitted Phases			Free			Free				6		6
Actuated Green, G (s)		32.8	65.0		32.8	65.0				24.2		24.2
Effective Green, g (s)		32.8	65.0		32.8	65.0				24.2		24.2
Actuated g/C Ratio		0.50	1.00		0.50	1.00				0.37		0.37
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		2566	1583		2566	1583				659		589
v/s Ratio Prot		0.33			c0.46							
v/s Ratio Perm			0.38			0.10				c0.34		0.32
v/c Ratio		0.65	0.38		0.91	0.10				0.92		0.86
Uniform Delay, d1		11.9	0.0		14.8	0.0				19.4		18.8
Progression Factor		1.00	1.00		1.00	1.00				1.00		1.00
Incremental Delay, d2		0.6	0.7		5.6	0.1				19.7		15.1
Delay (s)		12.5	0.7		20.4	0.1				39.1		33.9
Level of Service		B	A		C	A				D		C
Approach Delay (s)		9.4			19.1			0.0			36.8	
Approach LOS		A			B			A			D	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0		4.0			
Lane Util. Factor		0.91	1.00		0.91	1.00	1.00		1.00			
Frt		1.00	0.85		1.00	0.85	1.00		0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (prot)		5085	1583		5085	1583	1770		1583			
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (perm)		5085	1583		5085	1583	1770		1583			
Volume (vph)	0	1319	99	0	2405	710	967	0	315	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1434	108	0	2614	772	1051	0	342	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	6	0	0	0
Lane Group Flow (vph)	0	1434	108	0	2614	772	1051	0	337	0	0	0
Turn Type			Free			Free	custom		custom			
Protected Phases		4			8							
Permitted Phases			Free			Free	2		2			
Actuated Green, G (s)		47.0	110.0		47.0	110.0	55.0		55.0			
Effective Green, g (s)		47.0	110.0		47.0	110.0	55.0		55.0			
Actuated g/C Ratio		0.43	1.00		0.43	1.00	0.50		0.50			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		2173	1583		2173	1583	885		792			
v/s Ratio Prot		0.28			c0.51							
v/s Ratio Perm			0.07			0.49	c0.59		0.21			
v/c Ratio		0.66	0.07		1.20	0.49	1.19		0.42			
Uniform Delay, d1		25.1	0.0		31.5	0.0	27.5		17.5			
Progression Factor		1.00	1.00		1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.7	0.1		96.0	1.1	95.8		1.7			
Delay (s)		25.9	0.1		127.5	1.1	123.3		19.1			
Level of Service		C	A		F	A	F		B			
Approach Delay (s)		24.1			98.7			97.7			0.0	
Approach LOS		C			F			F			A	

Intersection Summary			
HCM Average Control Delay	80.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	106.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	12	1554	60	577	2259	412	216	301	10	52	761	927
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	1689	65	627	2455	448	235	327	11	57	827	1008
RTOR Reduction (vph)	0	0	25	0	0	110	0	0	7	0	0	186
Lane Group Flow (vph)	13	1689	40	627	2455	338	235	327	4	57	827	822
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	1.6	36.4	36.4	18.0	52.8	52.8	7.0	45.6	45.6	4.0	42.6	42.6
Effective Green, g (s)	1.6	36.4	36.4	18.0	52.8	52.8	7.0	45.6	45.6	4.0	42.6	42.6
Actuated g/C Ratio	0.01	0.30	0.30	0.15	0.44	0.44	0.06	0.38	0.38	0.03	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	46	1542	480	515	2237	697	200	1345	602	114	1256	562
v/s Ratio Prot	0.00	0.33		c0.18	c0.48		c0.07	c0.09		0.02	0.23	
v/s Ratio Perm			0.03			0.21			0.00			c0.52
v/c Ratio	0.28	1.10	0.08	1.22	1.10	0.48	1.18	0.24	0.01	0.50	0.66	1.46
Uniform Delay, d1	58.6	41.8	29.9	51.0	33.6	23.9	56.5	25.4	23.1	57.0	32.6	38.7
Progression Factor	1.00	1.00	1.00	0.82	0.73	0.60	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	53.6	0.1	107.4	48.3	0.3	118.8	0.4	0.0	3.4	2.7	217.5
Delay (s)	62.0	95.4	29.9	149.2	72.9	14.5	175.3	25.8	23.1	60.4	35.3	256.2
Level of Service	E	F	C	F	E	B	F	C	C	E	D	F
Approach Delay (s)		92.8			79.0			87.1			153.8	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM Average Control Delay	101.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	103.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	303	1805	258	155	2094	83	453	707	94	370	448	180
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	329	1962	280	168	2276	90	492	768	102	402	487	196
RTOR Reduction (vph)	0	0	73	0	0	19	0	0	38	0	0	98
Lane Group Flow (vph)	329	1962	207	168	2276	71	492	768	64	402	487	98
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.0	55.0	55.0	8.0	52.0	52.0	18.0	27.0	27.0	14.0	23.0	23.0
Effective Green, g (s)	11.0	55.0	55.0	8.0	52.0	52.0	18.0	27.0	27.0	14.0	23.0	23.0
Actuated g/C Ratio	0.09	0.46	0.46	0.07	0.43	0.43	0.15	0.22	0.22	0.12	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	315	2331	726	229	2204	686	515	796	356	401	678	303
v/s Ratio Prot	c0.10	c0.39		0.05	c0.45		c0.14	c0.22		0.12	0.14	
v/s Ratio Perm			0.13			0.05			0.04			0.06
v/c Ratio	1.04	0.84	0.29	0.73	1.03	0.10	0.96	0.96	0.18	1.00	0.72	0.32
Uniform Delay, d1	54.5	28.7	20.3	55.0	34.0	20.2	50.6	46.0	37.6	53.0	45.5	41.8
Progression Factor	1.20	0.54	0.42	1.01	0.72	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.5	0.3	0.0	1.1	16.7	0.0	28.5	24.4	1.1	45.6	6.4	2.8
Delay (s)	93.8	15.8	8.6	56.7	41.2	18.2	79.1	70.4	38.7	98.6	51.9	44.6
Level of Service	F	B	A	E	D	B	E	E	D	F	D	D
Approach Delay (s)		25.0			41.4			71.2			67.9	
Approach LOS		C			D			E			E	

Intersection Summary			
HCM Average Control Delay	45.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	465	1743	266	415	1547	179	455	614	159	177	333	711
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	505	1895	289	451	1682	195	495	667	173	192	362	773
RTOR Reduction (vph)	0	0	80	0	0	68	0	0	76	0	0	173
Lane Group Flow (vph)	505	1895	209	451	1682	127	495	667	97	192	362	600
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.0	39.0	39.0	14.0	37.0	37.0	15.0	40.6	40.6	10.4	36.0	36.0
Effective Green, g (s)	16.0	39.0	39.0	14.0	37.0	37.0	15.0	40.6	40.6	10.4	36.0	36.0
Actuated g/C Ratio	0.13	0.32	0.32	0.12	0.31	0.31	0.12	0.34	0.34	0.09	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	458	1653	514	401	1568	488	429	1197	536	298	1062	475
v/s Ratio Prot	c0.15	c0.37		0.13	0.33		c0.14	0.19		0.06	0.10	
v/s Ratio Perm			0.13			0.08			0.06			c0.38
v/c Ratio	1.10	1.15	0.41	1.12	1.07	0.26	1.15	0.56	0.18	0.64	0.34	1.26
Uniform Delay, d1	52.0	40.5	31.5	53.0	41.5	31.2	52.5	32.4	28.0	53.0	32.7	42.0
Progression Factor	1.17	0.71	0.46	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	64.6	70.7	0.3	83.4	45.0	0.3	92.7	1.9	0.7	4.7	0.9	134.5
Delay (s)	125.5	99.5	14.7	136.4	86.5	31.5	145.2	34.2	28.7	57.7	33.6	176.5
Level of Service	F	F	B	F	F	C	F	C	C	E	C	F
Approach Delay (s)		95.3			91.6			74.7			120.4	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM Average Control Delay	94.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	308	1432	50	83	1577	224	157	344	111	280	806	86
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	335	1557	54	90	1714	243	171	374	121	304	876	93
RTOR Reduction (vph)	0	0	26	0	0	92	0	0	97	0	0	46
Lane Group Flow (vph)	335	1557	28	90	1714	151	171	374	24	304	876	47
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	39.8	39.8	4.0	33.8	33.8	5.0	18.1	18.1	12.1	25.2	25.2
Effective Green, g (s)	10.0	39.8	39.8	4.0	33.8	33.8	5.0	18.1	18.1	12.1	25.2	25.2
Actuated g/C Ratio	0.11	0.44	0.44	0.04	0.38	0.38	0.06	0.20	0.20	0.13	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	381	2249	700	153	1910	595	191	712	318	462	991	443
v/s Ratio Prot	c0.10	0.31		0.03	c0.34		c0.05	0.11		0.09	c0.25	
v/s Ratio Perm			0.02			0.10			0.02			0.03
v/c Ratio	0.88	0.69	0.04	0.59	0.90	0.25	0.90	0.53	0.08	0.66	0.88	0.11
Uniform Delay, d1	39.4	20.2	14.3	42.2	26.5	19.4	42.2	32.1	29.2	37.0	31.0	24.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.35	0.89	0.93
Incremental Delay, d2	19.9	0.9	0.0	5.7	6.0	0.2	37.1	2.8	0.5	3.3	11.2	0.5
Delay (s)	59.3	21.1	14.3	47.9	32.5	19.6	79.4	34.9	29.6	53.3	38.9	22.7
Level of Service	E	C	B	D	C	B	E	C	C	D	D	C
Approach Delay (s)		27.5			31.6			45.3			41.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	33.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.91	1.00	1.00	0.91		1.00		1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.95	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		5085	1583	1770	5085		1770		1583	3433	3345	
Flt Permitted		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		5085	1583	1770	5085		1770		1583	3433	3345	
Volume (vph)	0	1006	72	326	901	0	56	0	546	264	187	108
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1093	78	354	979	0	61	0	593	287	203	117
RTOR Reduction (vph)	0	0	44	0	0	0	0	0	366	0	85	0
Lane Group Flow (vph)	0	1093	34	354	979	0	61	0	227	287	235	0
Turn Type			Perm	Prot			Prot		custom	Prot		
Protected Phases		4		3	8		5			1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		19.6	19.6	18.1	41.7		4.2		15.1	11.2	22.1	
Effective Green, g (s)		19.6	19.6	18.1	41.7		4.2		15.1	11.2	22.1	
Actuated g/C Ratio		0.25	0.25	0.23	0.52		0.05		0.19	0.14	0.28	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1246	388	400	2651		93		299	481	924	
v/s Ratio Prot		c0.21		c0.20	0.19		0.03			c0.08	0.07	
v/s Ratio Perm			0.02						c0.14			
v/c Ratio		0.88	0.09	0.88	0.37		0.66		0.76	0.60	0.25	
Uniform Delay, d1		29.0	23.3	29.9	11.4		37.2		30.7	32.3	22.5	
Progression Factor		1.00	1.00	0.88	1.72		1.00		1.00	1.00	1.00	
Incremental Delay, d2		7.2	0.1	10.6	0.0		15.4		16.5	2.0	0.7	
Delay (s)		36.3	23.4	37.0	19.5		52.6		47.2	34.3	23.2	
Level of Service		D	C	D	B		D		D	C	C	
Approach Delay (s)		35.4			24.2			47.7			28.4	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.91			0.91	1.00	0.95	0.95	0.88	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3433	5085			5085	1583	1681	1770	2787	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.56		1.00
Satd. Flow (perm)	3433	5085			5085	1583	1681	1770	2787	2016		1583
Volume (vph)	329	1064	0	0	1162	459	259	294	528	215	0	376
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	358	1157	0	0	1263	499	282	320	574	234	0	409
RTOR Reduction (vph)	0	0	0	0	0	213	0	0	136	0	0	227
Lane Group Flow (vph)	358	1157	0	0	1263	286	282	320	438	234	0	182
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	9.0	34.0			21.0	21.0	18.0	18.0	18.0	16.0		16.0
Effective Green, g (s)	9.0	34.0			21.0	21.0	18.0	18.0	18.0	16.0		16.0
Actuated g/C Ratio	0.11	0.42			0.26	0.26	0.22	0.22	0.22	0.20		0.20
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	386	2161			1335	416	378	398	627	403		317
v/s Ratio Prot	c0.10	0.23			c0.25		0.17	c0.18				
v/s Ratio Perm						0.18			0.16	c0.12		0.11
v/c Ratio	0.93	0.54			0.95	0.69	0.75	0.80	0.70	0.58		0.57
Uniform Delay, d1	35.2	17.1			28.9	26.5	28.9	29.3	28.5	29.0		28.9
Progression Factor	0.98	1.50			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	17.1	0.1			13.7	4.7	12.6	15.7	6.3	6.0		7.4
Delay (s)	51.4	25.8			42.6	31.2	41.5	45.1	34.8	35.0		36.3
Level of Service	D	C			D	C	D	D	C	C		D
Approach Delay (s)		31.8			39.4			39.2			35.8	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	36.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

EXISTING PLUS PROJECT PHASES 1-5 TRAFFIC CONDITION

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	98	29	11	465	766	145
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	32	12	505	833	158

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	138	12	505	833	158
Volume Left (vph)	107	0	0	833	0
Volume Right (vph)	0	0	505	0	158
Hadj (s)	0.19	0.03	-0.67	0.53	-0.67
Departure Headway (s)	7.4	6.9	6.2	7.1	5.9
Degree Utilization, x	0.28	0.02	0.87	1.64	0.26
Capacity (veh/h)	477	511	576	514	597
Control Delay (s)	13.2	8.8	35.8	312.0	9.7
Approach Delay (s)	13.2	35.2		263.9	
Approach LOS	B	E		F	

Intersection Summary			
Delay	170.9		
HCM Level of Service	F		
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	10	26	0	565	989	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	28	0	614	1075	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1069	
pX, platoon unblocked	0.63	0.63	0.63			
vC, conflicting volume	1689	1075	1075			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2094	1119	1119			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	70	82	100			
cM capacity (veh/h)	36	159	393			

Direction, Lane #	SE 1	SE 2	NE 1	SW 1
Volume Total	11	28	614	1075
Volume Left	11	0	0	0
Volume Right	0	28	0	0
cSH	36	159	1700	1700
Volume to Capacity	0.30	0.18	0.36	0.63
Queue Length 95th (ft)	25	16	0	0
Control Delay (s)	142.4	32.6	0.0	0.0
Lane LOS	F	D		
Approach Delay (s)	63.1		0.0	0.0
Approach LOS	F			

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	140.4%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	19	1315	511	0	0	974
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	1429	555	0	0	1059
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						573
pX, platoon unblocked	0.65					
vC, conflicting volume	1614	555			555	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1946	555			555	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	55	0			100	
cM capacity (veh/h)	46	531			1015	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	1450	555	1059
Volume Left	21	0	0
Volume Right	1429	0	0
cSH	462	1700	1700
Volume to Capacity	3.14	0.33	0.62
Queue Length 95th (ft)	Err	0	0
Control Delay (s)	Err	0.0	0.0
Lane LOS	F		
Approach Delay (s)	Err	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	4731.7		
Intersection Capacity Utilization	140.4%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3434		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3434		1770	1863	1583
Volume (vph)	331	116	125	160	142	154	33	1425	353	203	706	383
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	360	126	136	174	154	167	36	1549	384	221	767	416
RTOR Reduction (vph)	0	0	110	0	0	18	0	18	0	0	0	72
Lane Group Flow (vph)	360	126	26	174	154	149	36	1915	0	221	767	344
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot			Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases			4			8						6
Actuated Green, G (s)	20.0	17.7	22.9	16.2	13.9	28.1	5.2	55.9		14.2	64.9	84.9
Effective Green, g (s)	20.0	17.7	22.9	16.2	13.9	28.1	5.2	55.9		14.2	64.9	84.9
Actuated g/C Ratio	0.17	0.15	0.19	0.13	0.12	0.23	0.04	0.47		0.12	0.54	0.71
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	295	275	355	239	216	423	77	1600		209	1008	1173
v/s Ratio Prot	c0.20	c0.07	0.00	0.10	c0.08	0.04	0.02	c0.56		c0.12	0.41	0.05
v/s Ratio Perm			0.01			0.05						0.17
v/c Ratio	1.22	0.46	0.07	0.73	0.71	0.35	0.47	1.20		1.06	0.76	0.29
Uniform Delay, d1	50.0	46.8	39.8	49.8	51.1	38.3	56.0	32.0		52.9	21.5	6.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.01	1.02	1.39
Incremental Delay, d2	125.8	1.2	0.1	10.5	10.6	0.5	4.4	94.9		69.3	4.0	0.1
Delay (s)	175.8	48.0	39.9	60.3	61.7	38.9	60.5	127.0		122.8	26.0	9.1
Level of Service	F	D	D	E	E	D	E	F		F	C	A
Approach Delay (s)		120.2			53.5			125.8			36.2	
Approach LOS		F			D			F			D	

Intersection Summary			
HCM Average Control Delay	89.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

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                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Weber/Herndon
********************************************************************************
Average Delay (sec/veh):      0.2       Worst Case Level Of Service: B[ 13.2]
********************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  1    0  0  3  0  1    1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    39     0    0     0     0 1112   274     9 1310     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0    39     0    0     0     0 1112   274     9 1310     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0    39     0    0     0     0 1112   274     9 1310     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    42     0    0     0     0 1209   298    10 1424     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    42     0    0     0     0 1209   298    10 1424     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   403  xxxx xxxx   475  xxxx xxxx xxxxx  1507 xxxx xxxxx
Potent Cap.: xxxx xxxx   603  xxxx xxxx   542  xxxx xxxx xxxxx   450 xxxx xxxxx
Move Cap.:   xxxx xxxx   603  xxxx xxxx   542  xxxx xxxx xxxxx   450 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.07  xxxx xxxx  0.00  xxxx xxxx  xxxx  0.02 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.2  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx  11.4 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  13.2 xxxx xxxxx
LOS by Move:   *    *     B     *    *     *     *    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      11.4           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        B                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Volume (vph)	545	569	203	934	498	238
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	592	618	221	1015	541	259
RTOR Reduction (vph)	0	470	0	0	0	153
Lane Group Flow (vph)	592	148	221	1015	541	106
Turn Type		Perm	Prot			custom
Protected Phases	4		3	8	5	
Permitted Phases		4				2
Actuated Green, G (s)	14.4	14.4	9.0	27.4	24.6	24.6
Effective Green, g (s)	14.4	14.4	9.0	27.4	24.6	24.6
Actuated g/C Ratio	0.24	0.24	0.15	0.46	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	849	380	266	1616	726	649
v/s Ratio Prot	0.17		c0.12	c0.29	c0.31	
v/s Ratio Perm		0.09				0.07
v/c Ratio	0.70	0.39	0.83	0.63	0.75	0.16
Uniform Delay, d1	20.8	19.1	24.8	12.4	15.0	11.2
Progression Factor	1.20	5.45	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	19.3	0.8	6.8	0.5
Delay (s)	25.2	104.3	44.1	13.2	21.9	11.7
Level of Service	C	F	D	B	C	B
Approach Delay (s)	65.6			18.7	18.6	
Approach LOS	E			B	B	

Intersection Summary			
HCM Average Control Delay	36.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1657		3433	1737	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1657		3433	1737	
Volume (vph)	99	710	122	466	900	2	52	51	143	3	166	135
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	772	133	507	978	2	57	55	155	3	180	147
RTOR Reduction (vph)	0	0	100	0	0	1	0	106	0	0	32	0
Lane Group Flow (vph)	108	772	33	507	978	1	57	104	0	3	295	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	8.7	22.4	22.4	27.8	41.5	41.5	3.2	23.0		0.8	20.6	
Effective Green, g (s)	8.7	22.4	22.4	27.8	41.5	41.5	3.2	23.0		0.8	20.6	
Actuated g/C Ratio	0.10	0.25	0.25	0.31	0.46	0.46	0.04	0.26		0.01	0.23	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	171	881	394	547	1632	730	122	423		31	398	
v/s Ratio Prot	0.06	c0.22		c0.29	0.28		c0.02	0.06		0.00	c0.17	
v/s Ratio Perm			0.02			0.00						
v/c Ratio	0.63	0.88	0.08	0.93	0.60	0.00	0.47	0.24		0.10	0.74	
Uniform Delay, d1	39.1	32.5	25.9	30.1	18.1	13.1	42.6	26.6		44.2	32.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.4	9.8	0.1	21.9	0.6	0.0	2.8	1.4		1.4	11.8	
Delay (s)	46.5	42.2	26.0	52.0	18.7	13.1	45.4	28.0		45.6	44.0	
Level of Service	D	D	C	D	B	B	D	C		D	D	
Approach Delay (s)		40.6			30.0			31.7			44.1	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	35.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1614		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1614		3433	1863	1583
Volume (vph)	6	847	56	330	1226	57	90	39	318	127	42	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	921	61	359	1333	62	98	42	346	138	46	26
RTOR Reduction (vph)	0	0	40	0	0	21	0	163	0	0	0	20
Lane Group Flow (vph)	7	921	21	359	1333	41	98	225	0	138	46	6
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	22.7	22.7	9.0	30.9	30.9	3.2	14.1		3.2	14.1	14.1
Effective Green, g (s)	0.8	22.7	22.7	9.0	30.9	30.9	3.2	14.1		3.2	14.1	14.1
Actuated g/C Ratio	0.01	0.35	0.35	0.14	0.48	0.48	0.05	0.22		0.05	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	42	1236	553	475	1682	753	169	350		169	404	343
v/s Ratio Prot	0.00	0.26		c0.10	c0.38		0.03	c0.14		c0.04	0.02	
v/s Ratio Perm			0.01			0.03						0.00
v/c Ratio	0.17	0.75	0.04	0.76	0.79	0.05	0.58	0.64		0.82	0.11	0.02
Uniform Delay, d1	31.8	18.6	14.0	26.9	14.4	9.2	30.2	23.2		30.6	20.4	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.9	2.5	0.0	6.7	2.6	0.0	4.8	8.8		25.3	0.6	0.1
Delay (s)	33.6	21.1	14.0	33.7	17.0	9.2	35.0	32.0		55.9	21.0	20.1
Level of Service	C	C	B	C	B	A	D	C		E	C	C
Approach Delay (s)		20.7			20.1			32.6			43.8	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	202	939	166	70	1146	23	221	200	140	246	316	232
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	220	1021	180	76	1246	25	240	217	152	267	343	252
RTOR Reduction (vph)	0	0	119	0	0	16	0	0	110	0	0	131
Lane Group Flow (vph)	220	1021	61	76	1246	9	240	217	42	267	343	121
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	20.2	20.2	2.4	17.6	22.6	5.0	16.4	16.4	5.0	16.4	16.4
Effective Green, g (s)	5.0	20.2	20.2	2.4	17.6	22.6	5.0	16.4	16.4	5.0	16.4	16.4
Actuated g/C Ratio	0.08	0.34	0.34	0.04	0.29	0.38	0.08	0.27	0.27	0.08	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	286	1712	533	137	1492	702	286	967	433	286	967	433
v/s Ratio Prot	c0.06	c0.20		0.02	c0.25	0.00	0.07	0.06		c0.08	c0.10	
v/s Ratio Perm			0.04			0.00			0.03			0.08
v/c Ratio	0.77	0.60	0.11	0.55	0.84	0.01	0.84	0.22	0.10	0.93	0.35	0.28
Uniform Delay, d1	26.9	16.5	13.7	28.3	19.8	11.7	27.1	16.9	16.3	27.3	17.5	17.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.8	0.6	0.1	4.8	4.2	0.0	18.9	0.5	0.4	35.8	1.0	1.6
Delay (s)	38.7	17.1	13.8	33.1	24.1	11.7	46.0	17.4	16.7	63.1	18.6	18.8
Level of Service	D	B	B	C	C	B	D	B	B	E	B	B
Approach Delay (s)		20.0			24.3			28.5			32.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Volume (vph)	2	1332	1	2	1238	50	0	1	0	50	0	3
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	1448	1	2	1346	54	0	1	0	54	0	3
RTOR Reduction (vph)	0	0	1	0	0	29	0	0	0	0	0	2
Lane Group Flow (vph)	2	1448	0	2	1346	25	0	1	0	54	0	1
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	1.2	32.1	32.1	1.2	32.1	32.1		22.2		3.5		20.2
Effective Green, g (s)	1.2	32.1	32.1	1.2	32.1	32.1		22.2		3.5		20.2
Actuated g/C Ratio	0.02	0.43	0.43	0.02	0.43	0.43		0.30		0.05		0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	55	2176	678	55	2176	678		1048		160		426
v/s Ratio Prot	c0.00	c0.28		0.00	0.26			0.00		c0.02		
v/s Ratio Perm			0.00			0.02						c0.00
v/c Ratio	0.04	0.67	0.00	0.04	0.62	0.04		0.00		0.34		0.00
Uniform Delay, d1	36.3	17.2	12.3	36.3	16.7	12.5		18.6		34.6		20.0
Progression Factor	1.00	1.00	1.00	1.29	0.47	0.21		1.00		1.00		1.00
Incremental Delay, d2	0.3	0.8	0.0	0.2	0.4	0.0		0.0		1.3		0.0
Delay (s)	36.6	17.9	12.3	47.2	8.3	2.6		18.6		35.9		20.0
Level of Service	D	B	B	D	A	A		B		D		C
Approach Delay (s)		18.0			8.1			18.6			35.0	
Approach LOS		B			A			B			D	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3488		1770	3531		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.69	1.00	1.00	0.69	1.00	1.00
Satd. Flow (perm)	1770	3488		1770	3531		1288	1863	1583	1278	1863	1583
Volume (vph)	64	1317	142	152	1197	18	53	101	200	54	93	49
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	1432	154	165	1301	20	58	110	217	59	101	53
RTOR Reduction (vph)	0	10	0	0	1	0	0	0	149	0	0	41
Lane Group Flow (vph)	70	1576	0	165	1320	0	58	110	68	59	101	12
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	4.2	37.8		8.9	42.5		16.3	16.3	16.3	16.3	16.3	16.3
Effective Green, g (s)	4.2	37.8		8.9	42.5		16.3	16.3	16.3	16.3	16.3	16.3
Actuated g/C Ratio	0.06	0.50		0.12	0.57		0.22	0.22	0.22	0.22	0.22	0.22
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	99	1758		210	2001		280	405	344	278	405	344
v/s Ratio Prot	0.04	c0.45		c0.09	0.37			c0.06			0.05	
v/s Ratio Perm							0.05		0.04	0.05		0.01
v/c Ratio	0.71	0.90		0.79	0.66		0.21	0.27	0.20	0.21	0.25	0.03
Uniform Delay, d1	34.8	16.8		32.1	11.2		24.1	24.4	24.0	24.1	24.3	23.1
Progression Factor	0.85	1.44		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.0	5.3		17.4	0.8		1.7	1.6	1.3	1.7	1.5	0.2
Delay (s)	46.8	29.6		49.5	12.0		25.7	26.1	25.3	25.8	25.8	23.3
Level of Service	D	C		D	B		C	C	C	C	C	C
Approach Delay (s)		30.3			16.2			25.6			25.2	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	104	1638	52	220	1168	203	97	143	238	176	171	134
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	1780	57	239	1270	221	105	155	259	191	186	146
RTOR Reduction (vph)	0	0	7	0	0	38	0	0	103	0	0	118
Lane Group Flow (vph)	113	1780	50	239	1270	183	105	155	156	191	186	28
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.8	45.8	45.8	7.0	48.0	48.0	4.0	16.2	16.2	5.0	17.2	17.2
Effective Green, g (s)	4.8	45.8	45.8	7.0	48.0	48.0	4.0	16.2	16.2	5.0	17.2	17.2
Actuated g/C Ratio	0.05	0.51	0.51	0.08	0.53	0.53	0.04	0.18	0.18	0.06	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1801	806	267	1887	844	153	637	285	191	676	303
v/s Ratio Prot	0.03	c0.50		c0.07	0.36		0.03	0.04		c0.06	0.05	
v/s Ratio Perm			0.03			0.12			c0.10			0.02
v/c Ratio	0.62	0.99	0.06	0.90	0.67	0.22	0.69	0.24	0.55	1.00	0.28	0.09
Uniform Delay, d1	41.7	21.8	11.2	41.1	15.3	11.1	42.4	31.6	33.6	42.5	31.1	30.0
Progression Factor	1.00	1.00	1.00	0.53	1.98	2.42	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.1	18.3	0.0	21.5	0.6	0.1	12.0	0.9	7.3	65.1	1.0	0.6
Delay (s)	47.8	40.1	11.2	43.2	31.0	26.9	54.4	32.6	40.9	107.6	32.1	30.6
Level of Service	D	D	B	D	C	C	D	C	D	F	C	C
Approach Delay (s)		39.7			32.1			41.1			59.2	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM Average Control Delay	39.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	59	2027	142	119	1658	146	79	91	271	219	123	48
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	2203	154	129	1802	159	86	99	295	238	134	52
RTOR Reduction (vph)	0	0	68	0	0	61	0	0	85	0	0	37
Lane Group Flow (vph)	64	2203	86	129	1802	98	86	99	210	238	134	15
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	40.8	40.8	4.0	41.6	41.6	4.0	16.2	16.2	13.0	25.2	25.2
Effective Green, g (s)	3.2	40.8	40.8	4.0	41.6	41.6	4.0	16.2	16.2	13.0	25.2	25.2
Actuated g/C Ratio	0.04	0.45	0.45	0.04	0.46	0.46	0.04	0.18	0.18	0.14	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	122	2305	718	153	2350	732	153	637	285	256	1424	443
v/s Ratio Prot	0.02	c0.43		c0.04	0.35		0.03	0.03		c0.13	0.03	
v/s Ratio Perm			0.05			0.06			c0.13			0.01
v/c Ratio	0.52	0.96	0.12	0.84	0.77	0.13	0.56	0.16	0.74	0.93	0.09	0.03
Uniform Delay, d1	42.7	23.7	14.2	42.7	20.2	13.9	42.1	31.1	34.9	38.0	24.0	23.5
Progression Factor	0.76	1.49	2.46	0.81	1.62	2.80	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	5.3	0.0	15.9	0.6	0.0	4.7	0.5	15.6	37.2	0.1	0.1
Delay (s)	34.3	40.6	35.0	50.3	33.2	38.8	46.8	31.6	50.4	75.3	24.1	23.7
Level of Service	C	D	C	D	C	D	D	C	D	E	C	C
Approach Delay (s)		40.1			34.7			45.9			52.8	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	39.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Volume (vph)	690	1751	74	274	1015	323	162	806	169	157	815	691
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	750	1903	80	298	1103	351	176	876	184	171	886	751
RTOR Reduction (vph)	0	0	39	0	0	99	0	0	135	0	0	286
Lane Group Flow (vph)	750	1903	41	298	1103	252	176	876	49	171	886	465
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	20.0	34.0	34.0	8.0	22.0	22.0	5.0	24.2	24.2	7.8	27.0	27.0
Effective Green, g (s)	20.0	34.0	34.0	8.0	22.0	22.0	5.0	24.2	24.2	7.8	27.0	27.0
Actuated g/C Ratio	0.22	0.38	0.38	0.09	0.24	0.24	0.06	0.27	0.27	0.09	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	763	1921	598	305	1243	387	191	1367	426	298	1062	475
v/s Ratio Prot	c0.22	c0.37		0.09	0.22		c0.05	0.17		0.05	0.25	
v/s Ratio Perm			0.03			0.16			0.03			c0.29
v/c Ratio	0.98	0.99	0.07	0.98	0.89	0.65	0.92	0.64	0.12	0.57	0.83	0.98
Uniform Delay, d1	34.8	27.8	17.9	40.9	32.8	30.6	42.3	29.1	24.8	39.5	29.4	31.2
Progression Factor	1.13	1.36	2.27	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.7	9.6	0.0	44.8	8.0	3.9	43.3	2.3	0.6	2.7	7.7	36.3
Delay (s)	54.0	47.4	40.6	85.7	40.8	34.5	85.6	31.4	25.4	42.2	37.1	67.5
Level of Service	D	D	D	F	D	C	F	C	C	D	D	E
Approach Delay (s)		49.0			47.1			38.2			50.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	47.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	242	1534	129	102	1468	179	50	209	186	211	344	148
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	263	1667	140	111	1596	195	54	227	202	229	374	161
RTOR Reduction (vph)	0	0	87	0	0	90	0	0	116	0	0	114
Lane Group Flow (vph)	263	1667	53	111	1596	105	54	227	86	229	374	47
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	24.6	24.6	3.2	21.8	21.8	2.4	16.2	16.2	5.0	18.8	18.8
Effective Green, g (s)	6.0	24.6	24.6	3.2	21.8	21.8	2.4	16.2	16.2	5.0	18.8	18.8
Actuated g/C Ratio	0.09	0.38	0.38	0.05	0.34	0.34	0.04	0.25	0.25	0.08	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	317	1924	599	169	1705	531	127	1267	395	264	1471	458
v/s Ratio Prot	c0.08	c0.33		0.03	0.31		0.02	0.04		c0.07	c0.07	
v/s Ratio Perm			0.03			0.07			0.05			0.03
v/c Ratio	0.83	0.87	0.09	0.66	0.94	0.20	0.43	0.18	0.22	0.87	0.25	0.10
Uniform Delay, d1	29.0	18.7	13.0	30.4	20.9	15.4	30.6	19.2	19.4	29.7	17.7	16.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.2	4.4	0.1	8.9	10.1	0.2	2.3	0.3	1.3	24.5	0.4	0.4
Delay (s)	45.2	23.1	13.1	39.2	31.1	15.6	32.9	19.5	20.6	54.2	18.1	17.4
Level of Service	D	C	B	D	C	B	C	B	C	D	B	B
Approach Delay (s)		25.2			30.0			21.5			28.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	724	161	0	0	519	77
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	787	175	0	0	564	84
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			962		787	787
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			962		787	787
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	79
cM capacity (veh/h)			715		360	392

Direction, Lane #	EB 1	EB 2	NB 1	NB 2
Volume Total	787	175	564	84
Volume Left	0	0	564	0
Volume Right	0	175	0	84
cSH	1700	1700	360	392
Volume to Capacity	0.46	0.10	1.57	0.21
Queue Length 95th (ft)	0	0	801	20
Control Delay (s)	0.0	0.0	294.4	16.7
Lane LOS			F	C
Approach Delay (s)	0.0		258.5	
Approach LOS			F	

Intersection Summary			
Average Delay	104.0		
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1612		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1612		1770	1863	1583
Volume (vph)	68	115	3	301	408	53	282	4	32	4	25	356
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	125	3	327	443	58	307	4	35	4	27	387
RTOR Reduction (vph)	0	0	3	0	0	39	0	23	0	0	0	316
Lane Group Flow (vph)	74	125	0	327	443	19	307	16	0	4	27	71
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6						8
Actuated Green, G (s)	4.4	9.6	9.6	15.2	20.4	20.4	10.4	21.0		1.0	11.6	11.6
Effective Green, g (s)	4.4	9.6	9.6	15.2	20.4	20.4	10.4	21.0		1.0	11.6	11.6
Actuated g/C Ratio	0.07	0.15	0.15	0.24	0.32	0.32	0.17	0.33		0.02	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	124	541	242	428	1150	514	569	539		28	344	292
v/s Ratio Prot	0.04	0.04		c0.18	c0.13		c0.09	0.01		0.00	0.01	
v/s Ratio Perm			0.00			0.01						c0.05
v/c Ratio	0.60	0.23	0.00	0.76	0.39	0.04	0.54	0.03		0.14	0.08	0.24
Uniform Delay, d1	28.3	23.4	22.5	22.1	16.4	14.5	24.0	14.0		30.5	21.2	21.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.5	0.2	0.0	7.9	0.2	0.0	1.0	0.0		2.3	0.1	0.4
Delay (s)	35.8	23.6	22.5	30.0	16.6	14.5	25.0	14.1		32.8	21.3	22.3
Level of Service	D	C	C	C	B	B	C	B		C	C	C
Approach Delay (s)		28.1			21.7			23.8			22.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	458	303	178	125	153	162
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	498	329	193	136	166	176

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	498	329	329	342
Volume Left (vph)	498	0	0	166
Volume Right (vph)	0	329	136	0
Hadj (s)	0.23	-0.57	-0.21	0.13
Departure Headway (s)	6.1	3.2	6.1	6.4
Degree Utilization, x	0.85	0.29	0.56	0.61
Capacity (veh/h)	574	1113	562	537
Control Delay (s)	34.5	7.5	16.4	18.6
Approach Delay (s)	23.8		16.4	18.6
Approach LOS	C		C	C

Intersection Summary			
Delay	21.0		
HCM Level of Service	C		
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Yield			Yield	Stop	
Volume (vph)	0	426	84	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	463	91	0	0	0

Direction, Lane #	SE 1	NE 1
Volume Total (vph)	463	91
Volume Left (vph)	0	91
Volume Right (vph)	463	0
Hadj (s)	-0.57	0.23
Departure Headway (s)	3.6	5.0
Degree Utilization, x	0.46	0.13
Capacity (veh/h)	987	658
Control Delay (s)	9.6	8.7
Approach Delay (s)	9.6	8.7
Approach LOS	A	A

Intersection Summary			
Delay	9.4		
HCM Level of Service	A		
Intersection Capacity Utilization	29.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	32	335	344	9	40	131
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	364	374	10	43	142
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type					None	
Median storage veh)						
Upstream signal (ft)		1001	570			
pX, platoon unblocked						
vC, conflicting volume	384				626	187
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	384				626	187
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				89	83
cM capacity (veh/h)	1171				404	823

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	35	182	182	187	187	10	186
Volume Left	35	0	0	0	0	0	43
Volume Right	0	0	0	0	0	10	142
cSH	1171	1700	1700	1700	1700	1700	1075
Volume to Capacity	0.03	0.11	0.11	0.11	0.11	0.01	0.17
Queue Length 95th (ft)	2	0	0	0	0	0	16
Control Delay (s)	8.2	0.0	0.0	0.0	0.0	0.0	11.4
Lane LOS	A						B
Approach Delay (s)	0.7			0.0			11.4
Approach LOS							B

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEU	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWU	SWL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95
Satd. Flow (prot)		1770	3539	1583	1770	3539	1583	1770	1863	1583		1770
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95
Satd. Flow (perm)		1770	3539	1583	1770	3539	1583	1770	1863	1583		1770
Volume (vph)	25	16	235	99	149	297	4	40	89	189	17	69
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	17	255	108	162	323	4	43	97	205	18	75
RTOR Reduction (vph)	0	0	0	74	0	0	3	0	0	143	0	0
Lane Group Flow (vph)	0	44	255	34	162	323	1	43	97	62	0	93
Turn Type	Prot	Prot		Perm	Prot		custom	Prot		custom	Prot	Prot
Protected Phases	7	7	4!		8!			2!			1	1
Permitted Phases				4		8	8		2	2		
Actuated Green, G (s)		1.1	12.8	12.8	7.7	7.7	7.7	12.1	12.1	12.1		3.4
Effective Green, g (s)		1.1	12.8	12.8	7.7	7.7	7.7	12.1	12.1	12.1		3.4
Actuated g/C Ratio		0.03	0.32	0.32	0.19	0.19	0.19	0.30	0.30	0.30		0.08
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		48	1124	503	338	676	302	531	559	475		149
v/s Ratio Prot		c0.02	0.07		c0.09			0.02				c0.05
v/s Ratio Perm				0.02		0.09	0.00		0.05	0.04		
v/c Ratio		0.92	0.23	0.07	0.48	0.48	0.00	0.08	0.17	0.13		0.62
Uniform Delay, d1		19.6	10.1	9.6	14.5	14.5	13.2	10.1	10.4	10.3		17.8
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2		97.8	0.1	0.1	1.1	0.5	0.0	0.1	0.1	0.1		7.9
Delay (s)		117.4	10.2	9.6	15.6	15.0	13.2	10.2	10.6	10.4		25.7
Level of Service		F	B	A	B	B	B	B	B	B		C
Approach Delay (s)			21.7			15.2			10.4			
Approach LOS			C			B			B			

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	40.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SWT	SWR
Lane Configurations		
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.0	4.0
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1863	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1863	1583
Volume (vph)	159	58
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	173	63
RTOR Reduction (vph)	0	33
Lane Group Flow (vph)	173	30
Turn Type		Perm
Protected Phases	6!	
Permitted Phases		6
Actuated Green, G (s)	19.5	19.5
Effective Green, g (s)	19.5	19.5
Actuated g/C Ratio	0.48	0.48
Clearance Time (s)	4.0	4.0
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	901	766
v/s Ratio Prot	c0.09	
v/s Ratio Perm		0.02
v/c Ratio	0.19	0.04
Uniform Delay, d1	5.9	5.5
Progression Factor	1.00	1.00
Incremental Delay, d2	0.1	0.0
Delay (s)	6.0	5.5
Level of Service	A	A
Approach Delay (s)	11.5	
Approach LOS	B	

Intersection Summary

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #23 Dante/Polk

Cycle (sec):	100	Critical Vol./Cap.(X):	0.772
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	19.9
Optimal Cycle:	0	Level Of Service:	C

Street Name:	Dante						Polk					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0	1 0	1	1 0 0	1 0	1	1 0 0	1 0	1	1 0 0	1 0	1
Volume Module:												
Base Vol:	89	105	17	47	24	342	152	134	89	23	259	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	105	17	47	24	342	152	134	89	23	259	90
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	105	17	47	24	342	152	134	89	23	259	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	97	114	18	51	26	372	165	146	97	25	282	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	97	114	18	51	26	372	165	146	97	25	282	98
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	97	114	18	51	26	372	165	146	97	25	282	98
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.86	0.14	1.00	1.00	1.00	1.00	0.60	0.40	1.00	1.00	1.00
Final Sat.:	400	370	60	407	430	481	428	285	189	399	432	464
Capacity Analysis Module:												
Vol/Sat:	0.24	0.31	0.31	0.13	0.06	0.77	0.39	0.51	0.51	0.06	0.65	0.21
Crit Moves:		****				****		****			****	
Delay/Veh:	13.6	13.7	13.7	12.4	11.2	29.1	15.4	16.8	16.8	11.8	23.6	11.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.6	13.7	13.7	12.4	11.2	29.1	15.4	16.8	16.8	11.8	23.6	11.9
LOS by Move:	B	B	B	B	B	D	C	C	C	B	C	B
ApproachDel:		13.6			26.2			16.2			20.1	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		13.6			26.2			16.2			20.1	
LOS by Appr:		B			D			C			C	
AllWayAvgQ:	0.3	0.4	0.4	0.1	0.1	2.6	0.6	0.9	0.9	0.1	1.5	0.2

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	17	4	6	1	5	204	16	410	0	56	127	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	4	7	1	5	222	17	446	0	61	138	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	747	745	143	749	750	223	148			446		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	747	745	143	749	750	223	148			446		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	99	99	100	98	72	99			95		
cM capacity (veh/h)	202	318	879	280	316	781	1431			1111		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	18	4	7	1	5	222	17	223	223	0	61	148
Volume Left	18	0	0	1	0	0	17	0	0	0	61	0
Volume Right	0	0	7	0	0	222	0	0	0	0	0	10
cSH	202	318	879	280	316	781	1431	1700	1700	1700	1111	1700
Volume to Capacity	0.09	0.01	0.01	0.00	0.02	0.28	0.01	0.13	0.13	0.00	0.05	0.09
Queue Length 95th (ft)	7	1	1	0	1	29	1	0	0	0	4	0
Control Delay (s)	24.6	16.5	9.1	17.9	16.6	11.4	7.5	0.0	0.0	0.0	8.4	0.0
Lane LOS	C	C	A	C	C	B	A				A	
Approach Delay (s)	19.9			11.6			0.3				2.5	
Approach LOS	C			B								

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	37.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	404	416	396	840	682	108
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	439	452	430	913	741	117

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	439	452	430	913	741	117
Volume Left (vph)	439	0	430	0	0	0
Volume Right (vph)	0	0	0	913	0	117
Hadj (s)	0.53	0.03	0.53	-0.67	0.03	-0.67
Departure Headway (s)	8.6	8.1	8.6	7.4	9.0	8.3
Degree Utilization, x	1.05	1.02	1.03	1.88	1.86	0.27
Capacity (veh/h)	412	452	430	492	405	428
Control Delay (s)	86.9	75.7	80.9	421.9	414.7	13.2
Approach Delay (s)	81.2		312.6		359.8	
Approach LOS	F		F		F	

Intersection Summary			
Delay	259.1		
HCM Level of Service	F		
Intersection Capacity Utilization	91.0%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	140	120	63	0	168	591	15	22	1	519	59	232
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	152	130	68	0	183	642	16	24	1	564	64	252

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	217	134	183	642	41	880
Volume Left (vph)	152	0	0	0	16	564
Volume Right (vph)	0	68	0	642	1	252
Hadj (s)	0.38	-0.32	0.03	-0.67	0.10	-0.01
Departure Headway (s)	8.2	7.5	7.3	6.7	8.6	6.7
Degree Utilization, x	0.50	0.28	0.37	1.19	0.10	1.63
Capacity (veh/h)	423	472	483	547	402	529
Control Delay (s)	17.8	12.2	13.4	123.5	12.5	309.8
Approach Delay (s)	15.7		99.1		12.5	309.8
Approach LOS	C		F		B	F

Intersection Summary			
Delay	171.9		
HCM Level of Service	F		
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #30 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	1.397
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	122.4
Optimal Cycle:	0	Level Of Service:	F

Street Name:	Dante						Bullard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	166	11	18	109	13	47	17	578	36	25	1096	63
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	166	11	18	109	13	47	17	578	36	25	1096	63
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	166	11	18	109	13	47	17	578	36	25	1096	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	180	12	20	118	14	51	18	628	39	27	1191	68
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	12	20	118	14	51	18	628	39	27	1191	68
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	180	12	20	118	14	51	18	628	39	27	1191	68
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	324	665	356	318	328	353	372	804	425	381	853	439
Capacity Analysis Module:												
Vol/Sat:	0.56	0.02	0.05	0.37	0.04	0.14	0.05	0.78	0.09	0.07	1.40	0.16
Crit Moves:	****			****				****			****	
Delay/Veh:	25.6	13.2	12.8	19.6	13.6	14.0	12.6	36.3	11.7	12.3	216	11.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.6	13.2	12.8	19.6	13.6	14.0	12.6	36.3	11.7	12.3	216	11.8
LOS by Move:	D	B	B	C	B	B	B	E	B	B	F	B
ApproachDel:	23.7			17.6			34.2			200.6		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	23.7			17.6			34.2			200.6		
LOS by Appr:	C			C			D			F		
AllWayAvgQ:	1.1	0.0	0.1	0.5	0.0	0.2	0.0	2.8	0.1	0.1	24.2	0.2

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3477		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3477		1770	3539	1583	1770	3539	1583
Volume (vph)	178	695	103	104	553	74	42	403	54	60	417	154
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	755	112	113	601	80	46	438	59	65	453	167
RTOR Reduction (vph)	0	0	62	0	13	0	0	0	46	0	0	129
Lane Group Flow (vph)	193	755	50	113	668	0	46	438	13	65	453	38
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	9.9	31.2	31.2	4.9	26.2		2.1	15.0	15.0	2.8	15.7	15.7
Effective Green, g (s)	9.9	31.2	31.2	4.9	26.2		2.1	15.0	15.0	2.8	15.7	15.7
Actuated g/C Ratio	0.14	0.45	0.45	0.07	0.37		0.03	0.21	0.21	0.04	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	251	832	707	124	1303		53	759	340	71	795	356
v/s Ratio Prot	c0.11	c0.41		0.06	0.19		0.03	0.12		c0.04	c0.13	
v/s Ratio Perm			0.03						0.01			0.02
v/c Ratio	0.77	0.91	0.07	0.91	0.51		0.87	0.58	0.04	0.92	0.57	0.11
Uniform Delay, d1	28.9	18.0	11.1	32.3	16.9		33.8	24.6	21.7	33.4	24.1	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.2	13.5	0.0	54.2	0.3		76.0	1.1	0.0	77.4	0.9	0.1
Delay (s)	42.1	31.5	11.1	86.4	17.3		109.8	25.7	21.8	110.9	25.0	21.7
Level of Service	D	C	B	F	B		F	C	C	F	C	C
Approach Delay (s)		31.3			27.1			32.4			32.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	69.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	47	7	4	9	99	5	313	9	15	100	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	51	8	4	10	108	5	340	10	16	109	9

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	80	122	346	10	125	9
Volume Left (vph)	22	4	5	0	16	0
Volume Right (vph)	8	108	0	10	0	9
Hadj (s)	0.03	-0.49	0.04	-0.67	0.10	-0.67
Departure Headway (s)	5.3	4.8	5.2	4.5	5.5	4.7
Degree Utilization, x	0.12	0.16	0.50	0.01	0.19	0.01
Capacity (veh/h)	605	677	670	764	619	714
Control Delay (s)	9.1	8.7	12.1	6.4	8.6	6.6
Approach Delay (s)	9.1	8.7	12.0		8.5	
Approach LOS	A	A	B		A	

Intersection Summary			
Delay	10.4		
HCM Level of Service	B		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Volume (vph)	659	307	468	672	81	285
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	716	334	509	730	88	310
RTOR Reduction (vph)	0	129	0	0	0	274
Lane Group Flow (vph)	716	205	509	730	88	36
Turn Type		Perm	Prot			custom
Protected Phases	4		3	8		
Permitted Phases		4			2	2
Actuated Green, G (s)	35.9	35.9	31.7	71.6	10.4	10.4
Effective Green, g (s)	35.9	35.9	31.7	71.6	10.4	10.4
Actuated g/C Ratio	0.40	0.40	0.35	0.80	0.12	0.12
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	743	631	623	2815	205	183
v/s Ratio Prot	c0.38		c0.29	0.21		
v/s Ratio Perm		0.13			c0.05	0.02
v/c Ratio	0.96	0.33	0.82	0.26	0.43	0.20
Uniform Delay, d1	26.4	18.7	26.5	2.4	37.0	36.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	24.2	0.3	8.2	0.0	6.4	2.4
Delay (s)	50.6	19.0	34.7	2.4	43.5	38.4
Level of Service	D	B	C	A	D	D
Approach Delay (s)	40.6			15.7	39.5	
Approach LOS	D			B	D	

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Volume (vph)	95	912	973	192	109	202
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	991	1058	209	118	220
RTOR Reduction (vph)	0	0	0	117	0	168
Lane Group Flow (vph)	103	991	1058	92	118	52
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	7.5	37.9	26.4	26.4	14.1	14.1
Effective Green, g (s)	7.5	37.9	26.4	26.4	14.1	14.1
Actuated g/C Ratio	0.12	0.63	0.44	0.44	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	221	1177	1557	697	416	372
v/s Ratio Prot	0.06	c0.53	0.30		c0.07	
v/s Ratio Perm				0.06		0.03
v/c Ratio	0.47	0.84	0.68	0.13	0.28	0.14
Uniform Delay, d1	24.4	8.7	13.4	10.0	18.8	18.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	5.6	1.2	0.1	1.7	0.8
Delay (s)	25.9	14.3	14.6	10.1	20.5	18.9
Level of Service	C	B	B	B	C	B
Approach Delay (s)		15.4	13.9		19.5	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	38	888	38	200	879	184	157	377	6	13	442	287
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	965	41	217	955	200	171	410	7	14	480	312
RTOR Reduction (vph)	0	0	28	0	0	114	0	0	5	0	0	204
Lane Group Flow (vph)	41	965	13	217	955	86	171	410	2	14	480	108
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	2.4	23.6	23.6	10.9	32.1	32.1	9.0	23.7	23.7	0.8	15.5	15.5
Effective Green, g (s)	2.4	23.6	23.6	10.9	32.1	32.1	9.0	23.7	23.7	0.8	15.5	15.5
Actuated g/C Ratio	0.03	0.31	0.31	0.15	0.43	0.43	0.12	0.32	0.32	0.01	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	57	1114	498	257	1515	678	212	1118	500	19	731	327
v/s Ratio Prot	0.02	c0.27		c0.12	0.27		c0.10	0.12		0.01	c0.14	
v/s Ratio Perm			0.01			0.05			0.00			0.07
v/c Ratio	0.72	0.87	0.03	0.84	0.63	0.13	0.81	0.37	0.00	0.74	0.66	0.33
Uniform Delay, d1	36.0	24.2	17.8	31.2	16.8	13.0	32.2	19.8	17.6	37.0	27.3	25.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	35.1	7.2	0.0	21.6	0.9	0.1	19.6	0.9	0.0	88.4	4.6	2.7
Delay (s)	71.1	31.5	17.8	52.8	17.7	13.1	51.8	20.8	17.6	125.4	31.9	28.0
Level of Service	E	C	B	D	B	B	D	C	B	F	C	C
Approach Delay (s)		32.5			22.6			29.8			32.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	91	1017	57	34	1132	204	154	218	56	157	633	129
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	1105	62	37	1230	222	167	237	61	171	688	140
RTOR Reduction (vph)	0	0	42	0	0	155	0	0	43	0	0	100
Lane Group Flow (vph)	99	1105	20	37	1230	67	167	237	18	171	688	40
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	19.7	19.7	1.6	18.1	18.1	5.6	17.9	17.9	4.8	17.1	17.1
Effective Green, g (s)	3.2	19.7	19.7	1.6	18.1	18.1	5.6	17.9	17.9	4.8	17.1	17.1
Actuated g/C Ratio	0.05	0.33	0.33	0.03	0.30	0.30	0.09	0.30	0.30	0.08	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1670	520	92	1534	478	320	1056	472	275	1009	451
v/s Ratio Prot	c0.03	0.22		0.01	c0.24		0.05	0.07		c0.05	c0.19	
v/s Ratio Perm			0.01			0.04			0.01			0.03
v/c Ratio	0.54	0.66	0.04	0.40	0.80	0.14	0.52	0.22	0.04	0.62	0.68	0.09
Uniform Delay, d1	27.7	17.3	13.7	28.7	19.3	15.3	25.9	15.8	14.9	26.7	19.0	15.7
Progression Factor	1.00	1.00	1.00	1.28	0.64	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	1.0	0.0	1.9	2.1	0.1	1.5	0.5	0.2	4.3	3.7	0.4
Delay (s)	30.9	18.3	13.7	38.7	14.5	5.1	27.5	16.3	15.1	31.0	22.8	16.1
Level of Service	C	B	B	D	B	A	C	B	B	C	C	B
Approach Delay (s)		19.1			13.7			20.2			23.2	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	126	1213	80	102	951	49	161	361	327	236	380	478
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	1318	87	111	1034	53	175	392	355	257	413	520
RTOR Reduction (vph)	0	0	62	0	0	38	0	0	126	0	0	126
Lane Group Flow (vph)	137	1318	25	111	1034	15	175	392	229	257	413	394
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	17.5	17.5	3.2	17.5	17.5	4.5	17.6	17.6	5.7	18.8	18.8
Effective Green, g (s)	3.2	17.5	17.5	3.2	17.5	17.5	4.5	17.6	17.6	5.7	18.8	18.8
Actuated g/C Ratio	0.05	0.29	0.29	0.05	0.29	0.29	0.08	0.29	0.29	0.10	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1483	462	183	1483	462	257	1038	464	326	1109	496
v/s Ratio Prot	c0.04	c0.26		0.03	0.20		0.05	0.11		c0.07	0.12	
v/s Ratio Perm			0.02			0.01			0.14			c0.25
v/c Ratio	0.75	0.89	0.05	0.61	0.70	0.03	0.68	0.38	0.49	0.79	0.37	0.79
Uniform Delay, d1	28.0	20.3	15.3	27.8	18.9	15.2	27.1	16.8	17.5	26.6	16.0	18.8
Progression Factor	1.37	0.56	0.23	1.52	0.41	0.18	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.4	6.0	0.0	4.1	1.1	0.0	7.2	1.0	3.7	11.9	1.0	12.3
Delay (s)	51.8	17.4	3.5	46.3	8.9	2.8	34.3	17.9	21.2	38.5	17.0	31.2
Level of Service	D	B	A	D	A	A	C	B	C	D	B	C
Approach Delay (s)		19.7			12.1			22.3			27.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	155	1205	135	150	1047	54	189	534	228	129	351	93
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	1310	147	163	1138	59	205	580	248	140	382	101
RTOR Reduction (vph)	0	0	101	0	0	41	0	0	137	0	0	74
Lane Group Flow (vph)	168	1310	46	163	1138	18	205	580	111	140	382	27
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	18.8	18.8	4.0	18.8	18.8	5.0	17.2	17.2	4.0	16.2	16.2
Effective Green, g (s)	4.0	18.8	18.8	4.0	18.8	18.8	5.0	17.2	17.2	4.0	16.2	16.2
Actuated g/C Ratio	0.07	0.31	0.31	0.07	0.31	0.31	0.08	0.29	0.29	0.07	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	229	1593	496	229	1593	496	286	1015	454	229	956	427
v/s Ratio Prot	c0.05	c0.26		0.05	0.22		c0.06	c0.16		0.04	0.11	
v/s Ratio Perm			0.03			0.01			0.07			0.02
v/c Ratio	0.73	0.82	0.09	0.71	0.71	0.04	0.72	0.57	0.24	0.61	0.40	0.06
Uniform Delay, d1	27.5	19.1	14.6	27.4	18.2	14.3	26.8	18.3	16.4	27.2	17.9	16.3
Progression Factor	1.41	0.51	0.24	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	2.0	0.0	10.0	1.5	0.0	8.3	2.3	1.3	4.8	1.2	0.3
Delay (s)	45.2	11.7	3.5	37.4	19.8	14.3	35.1	20.6	17.7	32.0	19.2	16.6
Level of Service	D	B	A	D	B	B	D	C	B	C	B	B
Approach Delay (s)		14.4			21.7			22.8			21.6	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.90	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3182	
Flt Permitted		1.00	1.00	0.95	1.00		0.67		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1257		1583	1770	3182	
Volume (vph)	0	1209	31	109	442	0	19	0	360	107	37	75
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1314	34	118	480	0	21	0	391	116	40	82
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	158	0	52	0
Lane Group Flow (vph)	0	1314	23	118	480	0	21	0	233	116	70	0
Turn Type			Perm	Prot			custom		custom	Prot		
Protected Phases		4		3	8					1	6	
Permitted Phases			4				2		2			
Actuated Green, G (s)		31.6	31.6	7.0	42.6		18.0		18.0	7.0	29.0	
Effective Green, g (s)		31.6	31.6	7.0	42.6		18.0		18.0	7.0	29.0	
Actuated g/C Ratio		0.40	0.40	0.09	0.54		0.23		0.23	0.09	0.36	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1405	628	156	1894		284		358	156	1159	
v/s Ratio Prot		c0.37		c0.07	0.14					c0.07	0.02	
v/s Ratio Perm			0.01				0.02		c0.15			
v/c Ratio		0.94	0.04	0.76	0.25		0.07		0.65	0.74	0.06	
Uniform Delay, d1		23.0	14.7	35.5	9.9		24.2		28.0	35.4	16.4	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		11.7	0.0	18.7	0.1		0.1		4.2	17.3	0.1	
Delay (s)		34.7	14.7	54.1	10.0		24.4		32.2	52.8	16.5	
Level of Service		C	B	D	B		C		C	D	B	
Approach Delay (s)		34.2			18.7			31.8			34.2	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	30.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	79.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.89	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1485	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.59		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1485	1504	2136		1583
Volume (vph)	287	843	0	0	460	335	221	1	391	173	0	296
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	312	916	0	0	500	364	240	1	425	188	0	322
RTOR Reduction (vph)	0	0	0	0	0	278	0	124	124	0	0	256
Lane Group Flow (vph)	312	916	0	0	500	86	180	125	113	188	0	66
Turn Type	Prot					Prot	Split		Perm	custom		custom
Protected Phases	7	4			8	8	2	2				
Permitted Phases									2	6		6
Actuated Green, G (s)	15.5	34.4			14.9	14.9	16.0	16.0	16.0	16.0		16.0
Effective Green, g (s)	15.5	34.4			14.9	14.9	16.0	16.0	16.0	16.0		16.0
Actuated g/C Ratio	0.20	0.44			0.19	0.19	0.20	0.20	0.20	0.20		0.20
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	350	1553			673	301	343	303	307	436		323
v/s Ratio Prot	c0.18	0.26			c0.14	0.05	c0.11	0.08				
v/s Ratio Perm									0.08	c0.09		0.04
v/c Ratio	0.89	0.59			0.74	0.29	0.52	0.41	0.37	0.43		0.20
Uniform Delay, d1	30.6	16.7			29.9	27.2	27.8	27.1	26.8	27.2		25.9
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	23.5	0.6			4.4	0.5	5.6	4.1	3.4	3.1		1.4
Delay (s)	54.1	17.2			34.4	27.7	33.5	31.2	30.2	30.3		27.3
Level of Service	D	B			C	C	C	C	C	C		C
Approach Delay (s)		26.6			31.6			31.5			28.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	78.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	366	31	12	456	2286	639
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	398	34	13	496	2485	695

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	432	13	496	2485	695
Volume Left (vph)	398	0	0	2485	0
Volume Right (vph)	0	0	496	0	695
Hadj (s)	0.22	0.03	-0.67	0.53	-0.67
Departure Headway (s)	7.5	7.8	7.1	8.1	6.9
Degree Utilization, x	0.90	0.03	0.97	5.60	1.33
Capacity (veh/h)	466	456	506	452	534
Control Delay (s)	48.5	9.8	58.8	2089.6	180.1
Approach Delay (s)	48.5	57.5		1672.5	
Approach LOS	E	F		F	

Intersection Summary			
Delay	1303.0		
HCM Level of Service	F		
Intersection Capacity Utilization	161.9%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	7	51	0	819	2940	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	55	0	890	3196	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1069	
pX, platoon unblocked	0.54	0.54	0.54			
vC, conflicting volume	4086	3196	3196			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	6665	5031	5031			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	0	100			
cM capacity (veh/h)	0	0	9			

Direction, Lane #	SE 1	SE 2	NE 1	SW 1
Volume Total	8	55	890	3196
Volume Left	8	0	0	0
Volume Right	0	55	0	0
cSH	0	0	1700	1700
Volume to Capacity	304.09	119.36	0.52	1.88
Queue Length 95th (ft)	Err	Err	0	0
Control Delay (s)	Err	Err	0.0	0.0
Lane LOS	F	F		
Approach Delay (s)	9999.0		0.0	0.0
Approach LOS	F			

Intersection Summary			
Average Delay	151.9		
Intersection Capacity Utilization	165.2%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	20	1641	740	0	0	2948
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	1784	804	0	0	3204
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						573
pX, platoon unblocked	0.54					
vC, conflicting volume	4009	804			804	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	6576	804			804	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	0			100	
cM capacity (veh/h)	0	383			820	

Direction, Lane #	NW 1	NW 2	NE 1	SW 1
Volume Total	22	1784	804	3204
Volume Left	22	0	0	0
Volume Right	0	1784	0	0
cSH	0	383	1700	1700
Volume to Capacity	757.67	4.66	0.47	1.88
Queue Length 95th (ft)	Err	Err	0	0
Control Delay (s)	Err	Err	0.0	0.0
Lane LOS	F	F		
Approach Delay (s)	Err		0.0	0.0
Approach LOS	F			

Intersection Summary			
Average Delay	3104.9		
Intersection Capacity Utilization	165.2%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3345		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3345		1770	1863	1583
Volume (vph)	240	166	58	1002	175	559	67	1441	834	435	1878	312
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	180	63	1089	190	608	73	1566	907	473	2041	339
RTOR Reduction (vph)	0	0	2	0	0	40	0	69	0	0	0	63
Lane Group Flow (vph)	261	180	61	1089	190	568	73	2404	0	473	2041	276
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot			Prot		pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases			4			8						6
Actuated Green, G (s)	20.4	14.8	20.0	28.0	22.4	36.6	5.2	47.0		14.2	56.0	76.4
Effective Green, g (s)	20.4	14.8	20.0	28.0	22.4	36.6	5.2	47.0		14.2	56.0	76.4
Actuated g/C Ratio	0.17	0.12	0.17	0.23	0.19	0.30	0.04	0.39		0.12	0.47	0.64
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	301	230	317	413	348	536	77	1310		209	869	1061
v/s Ratio Prot	0.15	0.10	0.01	c0.62	0.10	c0.13	0.04	0.72		c0.27	c1.10	0.04
v/s Ratio Perm			0.03			0.23						0.13
v/c Ratio	0.87	0.78	0.19	2.64	0.55	1.06	0.95	1.84		2.26	2.35	0.26
Uniform Delay, d1	48.5	51.0	43.1	46.0	44.2	41.7	57.3	36.5		52.9	32.0	9.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.92	1.22	1.34
Incremental Delay, d2	22.1	15.8	0.3	743.5	1.8	55.9	84.0	378.9		579.1	609.4	0.1
Delay (s)	70.6	66.9	43.4	789.5	45.9	97.6	141.2	415.4		627.7	648.5	12.8
Level of Service	E	E	D	F	D	F	F	F		F	F	B
Approach Delay (s)		65.8			491.7			407.5			569.5	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	465.1	HCM Level of Service	F
HCM Volume to Capacity ratio	2.16		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	180.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #1 Weber/Herndon
******************************************************************************
Average Delay (sec/veh):      4.5       Worst Case Level Of Service: F[ 56.9]
******************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  1! 0  0    0  0  2  0  1    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0   303     0    0     0     0 1339   594    45 1769     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0   303     0    0     0     0 1339   594    45 1769     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0   303     0    0     0     0 1339   594    45 1769     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0   329     0    0     0     0 1455   646    49 1923     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0   329     0    0     0     0 1455   646    49 1923     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9   7.5  6.5   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3   3.5  4.0   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   728  2748 4122   961  xxxx xxxx xxxxx  2101 xxxx xxxxx
Potent Cap.: xxxx xxxx   371    10    2   260  xxxx xxxx xxxxx   265 xxxx xxxxx
Move Cap.:   xxxx xxxx   371     1    2   260  xxxx xxxx xxxxx   265 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.89  0.00 0.00  0.00  xxxx xxxx  xxxx  0.18 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   8.8  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.7 xxxx xxxxx
Control Del:xxxxx xxxx  56.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  21.6 xxxx xxxxx
LOS by Move:   *    *     F     *    *     *     *    *     *     C    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      56.9           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        F                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Volume (vph)	1254	319	337	759	1084	219
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1363	347	366	825	1178	238
RTOR Reduction (vph)	0	110	0	0	0	67
Lane Group Flow (vph)	1363	237	366	825	1178	171
Turn Type		Perm	Prot			custom
Protected Phases	4		3	8	5	
Permitted Phases		4				2
Actuated Green, G (s)	34.0	34.0	17.0	55.0	57.0	57.0
Effective Green, g (s)	34.0	34.0	17.0	55.0	57.0	57.0
Actuated g/C Ratio	0.28	0.28	0.14	0.46	0.48	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1003	449	251	1622	841	752
v/s Ratio Prot	c0.39		c0.21	0.23	c0.67	
v/s Ratio Perm		0.15				0.11
v/c Ratio	1.36	0.53	1.46	0.51	1.40	0.23
Uniform Delay, d1	43.0	36.2	51.5	23.0	31.5	18.5
Progression Factor	0.91	0.81	1.00	1.00	1.00	1.00
Incremental Delay, d2	162.1	0.1	226.9	0.3	187.5	0.7
Delay (s)	201.2	29.5	278.4	23.2	219.0	19.2
Level of Service	F	C	F	C	F	B
Approach Delay (s)	166.4			101.6	185.4	
Approach LOS	F			F	F	

Intersection Summary			
HCM Average Control Delay	154.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	123.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1690		3433	1779	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	1690		3433	1779	
Volume (vph)	224	1188	22	250	1039	9	13	135	219	5	100	43
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	243	1291	24	272	1129	10	14	147	238	5	109	47
RTOR Reduction (vph)	0	0	14	0	0	5	0	69	0	0	18	0
Lane Group Flow (vph)	243	1291	10	272	1129	5	14	316	0	5	138	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	12.7	32.4	32.4	8.0	27.7	27.7	0.8	22.8		0.8	22.8	
Effective Green, g (s)	12.7	32.4	32.4	8.0	27.7	27.7	0.8	22.8		0.8	22.8	
Actuated g/C Ratio	0.16	0.40	0.40	0.10	0.35	0.35	0.01	0.29		0.01	0.29	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	281	1433	641	343	1225	548	34	482		34	507	
v/s Ratio Prot	c0.14	c0.36		0.08	0.32		c0.00	c0.19		0.00	0.08	
v/s Ratio Perm			0.01			0.00						
v/c Ratio	0.86	0.90	0.02	0.79	0.92	0.01	0.41	0.66		0.15	0.27	
Uniform Delay, d1	32.8	22.3	14.2	35.2	25.1	17.2	39.4	25.2		39.3	22.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	23.1	8.1	0.0	11.9	11.4	0.0	7.9	6.8		2.0	1.3	
Delay (s)	55.9	30.4	14.3	47.1	36.5	17.2	47.3	32.0		41.3	23.5	
Level of Service	E	C	B	D	D	B	D	C		D	C	
Approach Delay (s)		34.1			38.4			32.5			24.0	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1600		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1600		3433	1863	1583
Volume (vph)	26	1220	69	303	1276	113	80	31	494	358	250	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	1326	75	329	1387	123	87	34	537	389	272	26
RTOR Reduction (vph)	0	0	38	0	0	26	0	106	0	0	0	17
Lane Group Flow (vph)	28	1326	37	329	1387	97	87	465	0	389	272	9
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	2.4	41.6	41.6	11.0	50.2	50.2	4.8	29.4		12.0	36.6	36.6
Effective Green, g (s)	2.4	41.6	41.6	11.0	50.2	50.2	4.8	29.4		12.0	36.6	36.6
Actuated g/C Ratio	0.02	0.38	0.38	0.10	0.46	0.46	0.04	0.27		0.11	0.33	0.33
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	75	1338	599	343	1615	722	150	428		375	620	527
v/s Ratio Prot	0.01	c0.37		c0.10	0.39		0.03	c0.29		c0.11	0.15	
v/s Ratio Perm			0.02			0.06						0.01
v/c Ratio	0.37	0.99	0.06	0.96	0.86	0.13	0.58	1.09		1.04	0.44	0.02
Uniform Delay, d1	53.1	34.0	21.8	49.3	26.7	17.3	51.6	40.3		49.0	28.7	24.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.1	22.4	0.0	37.4	4.8	0.1	5.4	68.6		56.5	2.2	0.1
Delay (s)	56.2	56.4	21.8	86.7	31.5	17.4	57.0	108.9		105.5	30.9	24.7
Level of Service	E	E	C	F	C	B	E	F		F	C	C
Approach Delay (s)		54.6			40.4			102.0			72.9	
Approach LOS		D			D			F			E	

Intersection Summary			
HCM Average Control Delay	58.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	604	1067	407	57	997	228	223	417	39	127	282	475
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	657	1160	442	62	1084	248	242	453	42	138	307	516
RTOR Reduction (vph)	0	0	230	0	0	39	0	0	33	0	0	283
Lane Group Flow (vph)	657	1160	212	62	1084	209	242	453	9	138	307	233
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.9	33.1	33.1	2.4	19.6	26.4	6.1	16.7	16.7	6.8	17.4	17.4
Effective Green, g (s)	15.9	33.1	33.1	2.4	19.6	26.4	6.1	16.7	16.7	6.8	17.4	17.4
Actuated g/C Ratio	0.21	0.44	0.44	0.03	0.26	0.35	0.08	0.22	0.22	0.09	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	728	2244	699	110	1329	642	279	788	352	311	821	367
v/s Ratio Prot	c0.19	0.23		0.02	c0.21	0.03	c0.07	0.13		0.04	0.09	
v/s Ratio Perm			0.13			0.10			0.01			c0.15
v/c Ratio	0.90	0.52	0.30	0.56	0.82	0.33	0.87	0.57	0.03	0.44	0.37	0.64
Uniform Delay, d1	28.8	15.2	13.5	35.8	26.0	17.8	34.1	26.0	22.8	32.3	24.2	25.9
Progression Factor	1.00	1.00	1.00	0.60	1.36	2.46	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.5	0.2	0.2	5.1	3.1	0.2	23.5	3.0	0.1	1.0	1.3	8.2
Delay (s)	43.3	15.4	13.8	26.4	38.5	43.9	57.5	29.0	22.9	33.3	25.5	34.1
Level of Service	D	B	B	C	D	D	E	C	C	C	C	C
Approach Delay (s)		23.2			38.9			38.0			31.3	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Volume (vph)	0	1248	1	4	1293	60	2	0	4	60	1	6
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1357	1	4	1405	65	2	0	4	65	1	7
RTOR Reduction (vph)	0	0	1	0	0	30	0	3	0	0	0	5
Lane Group Flow (vph)	0	1357	0	4	1405	35	2	1	0	65	1	2
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		30.8	30.8	1.2	36.0	36.0	5.6	22.1		4.9	21.4	21.4
Effective Green, g (s)		30.8	30.8	1.2	36.0	36.0	5.6	22.1		4.9	21.4	21.4
Actuated g/C Ratio		0.41	0.41	0.02	0.48	0.48	0.07	0.29		0.07	0.29	0.29
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		2088	650	55	2441	760	256	886		224	532	452
v/s Ratio Prot		c0.27		0.00	c0.28		0.00	0.00		c0.02	0.00	
v/s Ratio Perm			0.00			0.02						c0.00
v/c Ratio		0.65	0.00	0.07	0.58	0.05	0.01	0.00		0.29	0.00	0.00
Uniform Delay, d1		17.8	13.0	36.4	14.0	10.4	32.1	18.7		33.4	19.2	19.2
Progression Factor		0.86	0.83	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.6	0.0	0.6	0.3	0.0	0.0	0.0		0.7	0.0	0.0
Delay (s)		15.9	10.9	36.9	14.3	10.4	32.1	18.7		34.1	19.2	19.2
Level of Service		B	B	D	B	B	C	B		C	B	B
Approach Delay (s)		15.9			14.2			23.2			32.5	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3449		1770	3515		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.66	1.00	1.00	0.70	1.00	1.00
Satd. Flow (perm)	1770	3449		1770	3515		1234	1863	1583	1298	1863	1583
Volume (vph)	59	1315	268	251	1258	60	307	85	86	20	101	54
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	1429	291	273	1367	65	334	92	93	22	110	59
RTOR Reduction (vph)	0	17	0	0	3	0	0	0	70	0	0	44
Lane Group Flow (vph)	64	1703	0	273	1429	0	334	92	23	22	110	15
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	6.9	47.8		15.0	55.9		25.2	25.2	25.2	25.2	25.2	25.2
Effective Green, g (s)	6.9	47.8		15.0	55.9		25.2	25.2	25.2	25.2	25.2	25.2
Actuated g/C Ratio	0.07	0.48		0.15	0.56		0.25	0.25	0.25	0.25	0.25	0.25
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	122	1649		266	1965		311	469	399	327	469	399
v/s Ratio Prot	0.04	c0.49		c0.15	0.41			0.05			0.06	
v/s Ratio Perm							c0.27		0.01	0.02		0.01
v/c Ratio	0.52	1.03		1.03	0.73		1.07	0.20	0.06	0.07	0.23	0.04
Uniform Delay, d1	45.0	26.1		42.5	16.4		37.4	29.4	28.4	28.5	29.7	28.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	31.1		62.1	1.4		72.1	0.9	0.3	0.4	1.2	0.2
Delay (s)	49.0	57.2		104.6	17.8		109.5	30.4	28.7	28.9	30.9	28.4
Level of Service	D	E		F	B		F	C	C	C	C	C
Approach Delay (s)		56.9			31.7			81.0			29.9	
Approach LOS		E			C			F			C	

Intersection Summary			
HCM Average Control Delay	48.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	184	1233	133	534	1504	338	124	278	267	200	265	291
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	200	1340	145	580	1635	367	135	302	290	217	288	316
RTOR Reduction (vph)	0	0	24	0	0	51	0	0	210	0	0	112
Lane Group Flow (vph)	200	1340	121	580	1635	316	135	302	80	217	288	204
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	35.0	35.0	16.0	45.0	45.0	5.0	17.0	17.0	6.0	18.0	18.0
Effective Green, g (s)	6.0	35.0	35.0	16.0	45.0	45.0	5.0	17.0	17.0	6.0	18.0	18.0
Actuated g/C Ratio	0.07	0.39	0.39	0.18	0.50	0.50	0.06	0.19	0.19	0.07	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	229	1376	616	610	1770	792	191	668	299	229	708	317
v/s Ratio Prot	0.06	0.38		c0.17	c0.46		0.04	0.09		c0.06	0.08	
v/s Ratio Perm			0.08			0.20			0.05			c0.13
v/c Ratio	0.87	0.97	0.20	0.95	0.92	0.40	0.71	0.45	0.27	0.95	0.41	0.64
Uniform Delay, d1	41.6	27.0	18.2	36.6	20.9	14.1	41.8	32.4	31.2	41.8	31.4	33.1
Progression Factor	1.00	1.00	1.00	0.60	1.69	2.04	0.95	0.44	0.95	1.00	1.00	1.00
Incremental Delay, d2	28.6	18.2	0.2	14.0	4.2	0.1	7.6	1.5	1.4	44.5	1.7	9.7
Delay (s)	70.2	45.3	18.3	35.8	39.6	28.8	47.4	15.7	30.9	86.3	33.1	42.7
Level of Service	E	D	B	D	D	C	D	B	C	F	C	D
Approach Delay (s)		45.9			37.2			27.6			50.9	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	93	1429	123	373	2192	228	167	192	219	164	196	148
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	1553	134	405	2383	248	182	209	238	178	213	161
RTOR Reduction (vph)	0	0	82	0	0	73	0	0	175	0	0	81
Lane Group Flow (vph)	101	1553	52	405	2383	175	182	209	63	178	213	80
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	35.0	35.0	12.8	44.6	44.6	8.6	16.2	16.2	10.0	17.6	17.6
Effective Green, g (s)	3.2	35.0	35.0	12.8	44.6	44.6	8.6	16.2	16.2	10.0	17.6	17.6
Actuated g/C Ratio	0.04	0.39	0.39	0.14	0.50	0.50	0.10	0.18	0.18	0.11	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	122	1978	616	488	2520	784	328	637	285	197	994	310
v/s Ratio Prot	0.03	0.31		c0.12	c0.47		0.05	c0.06		c0.10	0.04	
v/s Ratio Perm			0.03			0.11			0.04			0.05
v/c Ratio	0.83	0.79	0.08	0.83	0.95	0.22	0.55	0.33	0.22	0.90	0.21	0.26
Uniform Delay, d1	43.1	24.2	17.4	37.5	21.5	12.9	38.9	32.2	31.5	39.5	30.4	30.7
Progression Factor	0.82	1.21	2.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.7	0.9	0.0	11.2	8.4	0.1	2.0	1.4	1.8	38.2	0.5	2.0
Delay (s)	52.2	30.2	50.1	48.7	29.9	13.0	40.9	33.5	33.3	77.8	30.9	32.7
Level of Service	D	C	D	D	C	B	D	C	C	E	C	C
Approach Delay (s)		33.0			31.0			35.6			46.5	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	33.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Volume (vph)	640	1174	93	115	1725	165	221	1143	45	257	984	809
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	696	1276	101	125	1875	179	240	1242	49	279	1070	879
RTOR Reduction (vph)	0	0	55	0	0	53	0	0	35	0	0	194
Lane Group Flow (vph)	696	1276	46	125	1875	126	240	1242	14	279	1070	685
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	20.0	49.2	49.2	7.8	37.0	37.0	7.0	35.1	35.1	11.9	40.0	40.0
Effective Green, g (s)	20.0	49.2	49.2	7.8	37.0	37.0	7.0	35.1	35.1	11.9	40.0	40.0
Actuated g/C Ratio	0.17	0.41	0.41	0.06	0.31	0.31	0.06	0.29	0.29	0.10	0.33	0.33
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	572	2085	649	223	1568	488	200	1487	463	340	1180	528
v/s Ratio Prot	c0.20	0.25		0.04	c0.37		c0.07	0.24		0.08	0.30	
v/s Ratio Perm			0.03			0.08			0.01			c0.43
v/c Ratio	1.22	0.61	0.07	0.56	1.20	0.26	1.20	0.84	0.03	0.82	0.91	1.30
Uniform Delay, d1	50.0	27.9	21.5	54.4	41.5	31.2	56.5	39.7	30.3	53.0	38.2	40.0
Progression Factor	1.00	1.00	1.00	0.82	0.74	0.71	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	112.8	0.5	0.0	2.0	92.3	0.2	128.0	5.7	0.1	14.6	11.6	147.3
Delay (s)	162.8	28.4	21.6	46.9	123.0	22.2	184.5	45.4	30.4	67.6	49.8	187.3
Level of Service	F	C	C	D	F	C	F	D	C	E	D	F
Approach Delay (s)		73.2			110.4			66.8			106.3	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM Average Control Delay	91.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	99.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	73	1295	323	157	1411	241	143	586	104	268	701	265
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	1408	351	171	1534	262	155	637	113	291	762	288
RTOR Reduction (vph)	0	0	140	0	0	135	0	0	82	0	0	126
Lane Group Flow (vph)	79	1408	211	171	1534	127	155	637	31	291	762	162
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	18.8	18.8	4.0	19.6	19.6	4.0	16.2	16.2	5.0	17.2	17.2
Effective Green, g (s)	3.2	18.8	18.8	4.0	19.6	19.6	4.0	16.2	16.2	5.0	17.2	17.2
Actuated g/C Ratio	0.05	0.31	0.31	0.07	0.33	0.33	0.07	0.27	0.27	0.08	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1593	496	229	1661	517	229	1373	427	286	1458	454
v/s Ratio Prot	0.02	0.28		c0.05	c0.30		0.05	0.13		c0.08	c0.15	
v/s Ratio Perm			0.13			0.08			0.02			0.10
v/c Ratio	0.43	0.88	0.43	0.75	0.92	0.25	0.68	0.46	0.07	1.02	0.52	0.36
Uniform Delay, d1	27.5	19.6	16.3	27.5	19.5	14.8	27.4	18.3	16.3	27.5	18.0	17.0
Progression Factor	0.78	1.89	2.46	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	5.3	0.5	12.5	9.0	0.3	7.7	1.1	0.3	57.8	1.3	2.2
Delay (s)	22.8	42.2	40.6	40.0	28.5	15.0	35.1	19.4	16.6	85.3	19.3	19.2
Level of Service	C	D	D	D	C	B	D	B	B	F	B	B
Approach Delay (s)		41.1			27.7			21.7			33.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1776	578	0	0	494	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1930	628	0	0	537	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			2559		1930	1930
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2559		1930	1930
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	86
cM capacity (veh/h)			173		73	83

Direction, Lane #	EB 1	EB 2	NB 1	NB 2
Volume Total	1930	628	537	12
Volume Left	0	0	537	0
Volume Right	0	628	0	12
cSH	1700	1700	73	83
Volume to Capacity	1.14	0.37	7.38	0.14
Queue Length 95th (ft)	0	0	Err	12
Control Delay (s)	0.0	0.0	Err	55.8
Lane LOS			F	F
Approach Delay (s)	0.0		9782.4	
Approach LOS			F	

Intersection Summary			
Average Delay	1727.9		
Intersection Capacity Utilization	127.5%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	0.97	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.91		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583		1770	3539	1583	3433	1697		1770	1863
Flt Permitted	0.95	1.00	1.00		0.46	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583		848	3539	1583	3433	1697		1770	1863
Volume (vph)	287	488	7	11	70	439	140	833	103	150	3	192
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	312	530	8	12	76	477	152	905	112	163	3	209
RTOR Reduction (vph)	0	0	6	0	0	0	125	0	44	0	0	0
Lane Group Flow (vph)	312	530	2	0	88	477	27	905	231	0	3	209
Turn Type	Prot		Perm	custom	Prot		Perm	Prot			Prot	
Protected Phases	5	2			1	6		7	4		3	8
Permitted Phases			2	1			6					
Actuated Green, G (s)	16.7	21.7	21.7		11.2	16.2	16.2	24.1	39.7		1.2	16.8
Effective Green, g (s)	16.7	21.7	21.7		11.2	16.2	16.2	24.1	39.7		1.2	16.8
Actuated g/C Ratio	0.19	0.24	0.24		0.12	0.18	0.18	0.27	0.44		0.01	0.19
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	329	855	383		106	638	286	921	750		24	349
v/s Ratio Prot	c0.18	c0.15				c0.13		c0.26	0.14		0.00	c0.11
v/s Ratio Perm			0.00		0.10		0.02					
v/c Ratio	0.95	0.62	0.01		0.83	0.75	0.10	0.98	0.31		0.12	0.60
Uniform Delay, d1	36.1	30.4	25.9		38.4	34.9	30.7	32.6	16.2		43.8	33.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	35.8	1.3	0.0		39.8	4.8	0.1	25.3	0.2		2.3	2.8
Delay (s)	71.9	31.7	25.9		78.1	39.6	30.8	57.9	16.4		46.1	36.2
Level of Service	E	C	C		E	D	C	E	B		D	D
Approach Delay (s)		46.4				42.5			48.2			34.7
Approach LOS		D				D			D			C

Intersection Summary			
HCM Average Control Delay	45.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	89.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWR
Lane Configurations	
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Volume (vph)	70
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	76
RTOR Reduction (vph)	62
Lane Group Flow (vph)	14
Turn Type	Perm
Protected Phases	
Permitted Phases	8
Actuated Green, G (s)	16.8
Effective Green, g (s)	16.8
Actuated g/C Ratio	0.19
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	296
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.05
Uniform Delay, d1	29.9
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	30.0
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	163	221	67	308	157	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	177	240	73	335	171	79

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	177	240	408	250
Volume Left (vph)	177	0	0	171
Volume Right (vph)	0	240	335	0
Hadj (s)	0.23	-0.57	-0.46	0.17
Departure Headway (s)	5.6	3.2	4.3	5.1
Degree Utilization, x	0.28	0.21	0.49	0.35
Capacity (veh/h)	576	1122	803	679
Control Delay (s)	10.8	7.1	11.3	10.8
Approach Delay (s)	8.6		11.3	10.8
Approach LOS	A		B	B

Intersection Summary			
Delay	10.1		
HCM Level of Service	B		
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Yield			Yield	Stop	
Volume (vph)	0	152	225	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	165	245	0	0	0

Direction, Lane #	SE 1	NE 1
Volume Total (vph)	165	245
Volume Left (vph)	0	245
Volume Right (vph)	165	0
Hadj (s)	-0.57	0.23
Departure Headway (s)	3.9	4.5
Degree Utilization, x	0.18	0.30
Capacity (veh/h)	859	777
Control Delay (s)	7.8	9.4
Approach Delay (s)	7.8	9.4
Approach LOS	A	A

Intersection Summary			
Delay	8.8		
HCM Level of Service	A		
Intersection Capacity Utilization	15.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	150	647	659	84	71	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	163	703	716	91	77	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type					None	
Median storage veh)						
Upstream signal (ft)		1001	570			
pX, platoon unblocked						
vC, conflicting volume	808				1394	358
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	808				1394	358
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	80				27	89
cM capacity (veh/h)	813				106	638

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	163	352	352	358	358	91	146
Volume Left	163	0	0	0	0	0	77
Volume Right	0	0	0	0	0	91	68
cSH	813	1700	1700	1700	1700	1700	200
Volume to Capacity	0.20	0.21	0.21	0.21	0.21	0.05	0.73
Queue Length 95th (ft)	19	0	0	0	0	0	118
Control Delay (s)	10.5	0.0	0.0	0.0	0.0	0.0	58.2
Lane LOS	B						F
Approach Delay (s)	2.0			0.0			58.2
Approach LOS							F

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEU	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWU	SWL
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95
Satd. Flow (prot)		1770	3539	1583	1770	3539	1583	1770	1863	1583		1770
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.95
Satd. Flow (perm)		1770	3539	1583	1770	3539	1583	1770	1863	1583		1770
Volume (vph)	82	229	398	60	110	560	36	127	170	109	106	105
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	249	433	65	120	609	39	138	185	118	115	114
RTOR Reduction (vph)	0	0	0	33	0	0	30	0	0	98	0	0
Lane Group Flow (vph)	0	338	433	32	120	609	9	138	185	20	0	229
Turn Type	Prot	Prot		Perm	Prot		custom	Prot		custom	Prot	Prot
Protected Phases	7	7	4!		8!			2!			1	1
Permitted Phases				4		8	8		2	2		
Actuated Green, G (s)		15.3	34.3	34.3	15.0	15.0	15.0	11.7	11.7	11.7		10.8
Effective Green, g (s)		15.3	34.3	34.3	15.0	15.0	15.0	11.7	11.7	11.7		10.8
Actuated g/C Ratio		0.22	0.50	0.50	0.22	0.22	0.22	0.17	0.17	0.17		0.16
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		394	1764	789	386	772	345	301	317	269		278
v/s Ratio Prot		c0.19	0.12		0.07			0.08				c0.13
v/s Ratio Perm				0.02		c0.17	0.01		c0.10	0.01		
v/c Ratio		0.86	0.25	0.04	0.31	0.79	0.02	0.46	0.58	0.07		0.82
Uniform Delay, d1		25.7	9.9	8.8	22.6	25.4	21.1	25.7	26.3	24.0		28.1
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2		16.6	0.1	0.0	0.5	5.4	0.0	1.1	2.7	0.1		17.6
Delay (s)		42.3	9.9	8.9	23.0	30.8	21.2	26.8	29.0	24.1		45.7
Level of Service		D	A	A	C	C	C	C	C	C		D
Approach Delay (s)			22.9			29.1			27.0			
Approach LOS			C			C			C			

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	68.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SWT	SWR
Lane Configurations		
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.0	4.0
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	1863	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	1863	1583
Volume (vph)	89	189
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	97	205
RTOR Reduction (vph)	0	126
Lane Group Flow (vph)	97	79
Turn Type		Perm
Protected Phases	6!	
Permitted Phases		6
Actuated Green, G (s)	26.5	26.5
Effective Green, g (s)	26.5	26.5
Actuated g/C Ratio	0.39	0.39
Clearance Time (s)	4.0	4.0
Vehicle Extension (s)	3.0	3.0
Lane Grp Cap (vph)	718	610
v/s Ratio Prot	0.05	
v/s Ratio Perm		0.05
v/c Ratio	0.14	0.13
Uniform Delay, d1	13.7	13.7
Progression Factor	1.00	1.00
Incremental Delay, d2	0.1	0.1
Delay (s)	13.8	13.8
Level of Service	B	B
Approach Delay (s)	27.6	
Approach LOS	C	

Intersection Summary

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #23 Dante/Polk

Cycle (sec):	100	Critical Vol./Cap.(X):	2.132
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	228.3
Optimal Cycle:	0	Level Of Service:	F

Street Name:	Dante						Polk					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0	1 0	1	1 0 1	0	1	1 0 0	1	0	1 0 1	0	1
Volume Module:												
Base Vol:	139	160	33	168	281	168	370	686	84	80	437	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	139	160	33	168	281	168	370	686	84	80	437	11
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	139	160	33	168	281	168	370	686	84	80	437	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	151	174	36	183	305	183	402	746	91	87	475	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	151	174	36	183	305	183	402	746	91	87	475	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	151	174	36	183	305	183	402	746	91	87	475	12
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.83	0.17	1.00	1.00	1.00	1.00	0.89	0.11	1.00	1.00	1.00
Final Sat.:	337	298	61	327	344	367	369	350	43	303	324	334
Capacity Analysis Module:												
Vol/Sat:	0.45	0.58	0.58	0.56	0.89	0.50	1.09	2.13	2.13	0.29	1.47	0.04
Crit Moves:	****			****			****			****		
Delay/Veh:	21.3	25.3	25.3	26.4	56.8	21.6	104.5	538	538.2	18.8	254	13.5
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	21.3	25.3	25.3	26.4	56.8	21.6	104.5	538	538.2	18.8	254	13.5
LOS by Move:	C	D	D	D	F	C	F	F	F	C	F	B
ApproachDel:	23.7			38.9			397.4			213.3		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	23.7			38.9			397.4			213.3		
LOS by Appr:	C			E			F			F		
AllWayAvgQ:	0.8	1.3	1.3	1.2	4.2	0.9	9.4	57.4	57.4	0.4	21.6	0.0

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	40	24	24	29	83	26	372	0	73	527	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	43	26	26	32	90	28	404	0	79	573	41
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1117	1213	593	1240	1234	202	614			404		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1117	1213	593	1240	1234	202	614			404		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	73	94	71	80	89	97			93		
cM capacity (veh/h)	113	163	448	91	159	805	961			1151		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	9	43	26	26	32	90	28	202	202	0	79	614
Volume Left	9	0	0	26	0	0	28	0	0	0	79	0
Volume Right	0	0	26	0	0	90	0	0	0	0	0	41
cSH	113	163	448	91	159	805	961	1700	1700	1700	1151	1700
Volume to Capacity	0.08	0.27	0.06	0.29	0.20	0.11	0.03	0.12	0.12	0.00	0.07	0.36
Queue Length 95th (ft)	6	26	5	27	18	9	2	0	0	0	6	0
Control Delay (s)	39.4	34.9	13.5	59.4	33.3	10.0	8.9	0.0	0.0	0.0	8.4	0.0
Lane LOS	E	D	B	F	D	B	A				A	
Approach Delay (s)	28.3			23.7			0.6				1.0	
Approach LOS	D			C								

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	989	718	561	921	622	774
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1075	780	610	1001	676	841

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	1075	780	610	1001	676	841
Volume Left (vph)	1075	0	610	0	0	0
Volume Right (vph)	0	0	0	1001	0	841
Hadj (s)	0.53	0.03	0.53	-0.67	0.03	-0.67
Departure Headway (s)	9.5	9.0	9.5	8.3	9.0	8.3
Degree Utilization, x	2.84	1.95	1.61	2.31	1.69	1.94
Capacity (veh/h)	389	405	382	442	404	439
Control Delay (s)	854.0	457.9	309.5	615.0	343.2	451.1
Approach Delay (s)	687.4		499.4		403.0	
Approach LOS	F		F		F	

Intersection Summary			
Delay	540.0		
HCM Level of Service	F		
Intersection Capacity Utilization	127.6%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	570	343	42	1	384	611	55	157	1	576	107	543
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	620	373	46	1	417	664	60	171	1	626	116	590

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	806	232	418	664	232	1333
Volume Left (vph)	620	0	1	0	60	626
Volume Right (vph)	0	46	0	664	1	590
Hadj (s)	0.42	-0.10	0.04	-0.67	0.08	-0.14
Departure Headway (s)	9.4	8.8	8.9	8.2	9.6	8.4
Degree Utilization, x	2.10	0.57	1.04	1.52	0.62	3.12
Capacity (veh/h)	391	396	406	441	366	440
Control Delay (s)	521.9	21.7	84.2	264.9	27.0	975.8
Approach Delay (s)	410.1		195.0		27.0	975.8
Approach LOS	F		F		D	F

Intersection Summary			
Delay	527.4		
HCM Level of Service	F		
Intersection Capacity Utilization	147.3%	ICU Level of Service	H
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #30 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	2.241
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	421.9
Optimal Cycle:	0	Level Of Service:	F

Street Name:	Dante						Bullard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	68	50	23	8	38	110	152	1668	87	56	1388	127
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	50	23	8	38	110	152	1668	87	56	1388	127
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	50	23	8	38	110	152	1668	87	56	1388	127
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	74	54	25	9	41	120	165	1813	95	61	1509	138
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	74	54	25	9	41	120	165	1813	95	61	1509	138
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	74	54	25	9	41	120	165	1813	95	61	1509	138
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	290	603	320	290	303	322	378	809	432	370	794	423
Capacity Analysis Module:												
Vol/Sat:	0.26	0.09	0.08	0.03	0.14	0.37	0.44	2.24	0.22	0.16	1.90	0.33
Crit Moves:	****					****		****			****	
Delay/Veh:	19.1	15.6	14.7	15.3	16.2	20.0	19.0	586	13.1	14.1	435	15.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.1	15.6	14.7	15.3	16.2	20.0	19.0	586	13.1	14.1	435	15.0
LOS by Move:	C	C	B	C	C	C	C	F	B	B	F	B
ApproachDel:	17.1			18.8			514.4			386.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	17.1			18.8			514.4			386.1		
LOS by Appr:	C			C			F			F		
AllWayAvgQ:	0.3	0.1	0.1	0.0	0.2	0.6	0.7	64.5	0.3	0.2	46.7	0.5

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3492		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3492		1770	3539	1583	1770	3539	1583
Volume (vph)	195	956	99	8	944	91	33	952	144	71	899	87
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	212	1039	108	9	1026	99	36	1035	157	77	977	95
RTOR Reduction (vph)	0	0	33	0	6	0	0	0	94	0	0	60
Lane Group Flow (vph)	212	1039	75	9	1119	0	36	1035	63	77	977	35
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	16.7	64.3	64.3	0.8	48.4		3.2	33.9	33.9	5.0	35.7	35.7
Effective Green, g (s)	16.7	64.3	64.3	0.8	48.4		3.2	33.9	33.9	5.0	35.7	35.7
Actuated g/C Ratio	0.14	0.54	0.54	0.01	0.40		0.03	0.28	0.28	0.04	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	246	998	848	12	1408		47	1000	447	74	1053	471
v/s Ratio Prot	c0.12	c0.56		0.01	0.32		0.02	c0.29		c0.04	0.28	
v/s Ratio Perm			0.05						0.04			0.02
v/c Ratio	0.86	1.04	0.09	0.75	0.79		0.77	1.03	0.14	1.04	0.93	0.07
Uniform Delay, d1	50.5	27.9	13.6	59.5	31.4		58.0	43.1	32.2	57.5	40.9	30.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.2	39.7	0.0	128.3	3.2		52.3	37.9	0.1	116.2	13.5	0.1
Delay (s)	75.7	67.6	13.6	187.8	34.6		110.3	80.9	32.3	173.7	54.4	30.4
Level of Service	E	E	B	F	C		F	F	C	F	D	C
Approach Delay (s)		64.6			35.8			75.6			60.4	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM Average Control Delay	59.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	4	154	3	16	61	142	21	259	6	153	347	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	167	3	17	66	154	23	282	7	166	377	4

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	175	238	304	7	543	4
Volume Left (vph)	4	17	23	0	166	0
Volume Right (vph)	3	154	0	7	0	4
Hadj (s)	0.03	-0.34	0.07	-0.67	0.19	-0.67
Departure Headway (s)	7.4	6.8	7.1	6.3	6.9	6.0
Degree Utilization, x	0.36	0.45	0.60	0.01	1.04	0.01
Capacity (veh/h)	450	499	486	541	517	585
Control Delay (s)	14.4	15.3	18.9	8.2	74.0	7.8
Approach Delay (s)	14.4	15.3	18.7		73.4	
Approach LOS	B	C	C		F	

Intersection Summary			
Delay	41.0		
HCM Level of Service	E		
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Volume (vph)	873	86	410	917	143	482
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	949	93	446	997	155	524
RTOR Reduction (vph)	0	20	0	0	0	368
Lane Group Flow (vph)	949	73	446	997	155	156
Turn Type		Perm	Prot			custom
Protected Phases	4		3	8		
Permitted Phases		4			2	2
Actuated Green, G (s)	60.2	60.2	32.4	96.6	15.4	15.4
Effective Green, g (s)	60.2	60.2	32.4	96.6	15.4	15.4
Actuated g/C Ratio	0.50	0.50	0.27	0.80	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	935	794	478	2849	227	203
v/s Ratio Prot	c0.51		c0.25	0.28		
v/s Ratio Perm		0.05			0.09	c0.10
v/c Ratio	1.01	0.09	0.93	0.35	0.68	0.77
Uniform Delay, d1	29.9	15.6	42.7	3.2	50.0	50.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	33.2	0.1	25.3	0.1	15.4	24.0
Delay (s)	63.1	15.7	68.1	3.3	65.4	74.6
Level of Service	E	B	E	A	E	E
Approach Delay (s)	58.9			23.3	72.5	
Approach LOS	E			C	E	

Intersection Summary			
HCM Average Control Delay	45.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Volume (vph)	41	990	1412	302	237	214
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	1076	1535	328	258	233
RTOR Reduction (vph)	0	0	0	149	0	102
Lane Group Flow (vph)	45	1076	1535	179	258	131
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	2.8	41.5	34.7	34.7	15.5	15.5
Effective Green, g (s)	2.8	41.5	34.7	34.7	15.5	15.5
Actuated g/C Ratio	0.04	0.64	0.53	0.53	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	76	1189	1889	845	422	377
v/s Ratio Prot	0.03	c0.58	0.43		c0.15	
v/s Ratio Perm				0.11		0.08
v/c Ratio	0.59	0.90	0.81	0.21	0.61	0.35
Uniform Delay, d1	30.5	10.1	12.5	8.0	22.1	20.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.8	9.8	2.8	0.1	6.5	2.5
Delay (s)	42.3	19.9	15.3	8.1	28.5	23.1
Level of Service	D	B	B	A	C	C
Approach Delay (s)		20.8	14.0		25.9	
Approach LOS		C	B		C	

Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	9	1253	45	166	1582	365	297	458	44	45	626	548
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	1362	49	180	1720	397	323	498	48	49	680	596
RTOR Reduction (vph)	0	0	16	0	0	103	0	0	32	0	0	118
Lane Group Flow (vph)	10	1362	33	180	1720	294	323	498	16	49	680	478
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	0.8	46.2	46.2	12.0	57.4	57.4	19.0	39.5	39.5	6.3	26.8	26.8
Effective Green, g (s)	0.8	46.2	46.2	12.0	57.4	57.4	19.0	39.5	39.5	6.3	26.8	26.8
Actuated g/C Ratio	0.01	0.38	0.38	0.10	0.48	0.48	0.16	0.33	0.33	0.05	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	12	1363	609	177	1693	757	280	1165	521	93	790	354
v/s Ratio Prot	0.01	0.38		c0.10	c0.49		c0.18	0.14		0.03	0.19	
v/s Ratio Perm			0.02			0.19			0.01			c0.30
v/c Ratio	0.83	1.00	0.05	1.02	1.02	0.39	1.15	0.43	0.03	0.53	0.86	1.35
Uniform Delay, d1	59.5	36.9	23.2	54.0	31.3	20.1	50.5	31.4	27.3	55.4	44.8	46.6
Progression Factor	1.00	1.00	1.00	1.16	0.34	0.16	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	168.3	24.0	0.0	43.8	16.9	0.1	101.9	1.1	0.1	5.3	11.8	175.2
Delay (s)	227.8	60.9	23.2	106.4	27.6	3.3	152.4	32.6	27.4	60.7	56.7	221.8
Level of Service	F	E	C	F	C	A	F	C	C	E	E	F
Approach Delay (s)		60.8			29.6			76.8			131.1	
Approach LOS		E			C			E			F	

Intersection Summary			
HCM Average Control Delay	66.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	261	1871	157	237	1807	139	304	755	91	579	353	149
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	284	2034	171	258	1964	151	330	821	99	629	384	162
RTOR Reduction (vph)	0	0	43	0	0	36	0	0	35	0	0	109
Lane Group Flow (vph)	284	2034	128	258	1964	115	330	821	65	629	384	53
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	46.0	46.0	9.0	45.0	45.0	15.9	28.0	28.0	21.0	33.1	33.1
Effective Green, g (s)	10.0	46.0	46.0	9.0	45.0	45.0	15.9	28.0	28.0	21.0	33.1	33.1
Actuated g/C Ratio	0.08	0.38	0.38	0.08	0.38	0.38	0.13	0.23	0.23	0.18	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	286	1949	607	257	1907	594	455	826	369	601	976	437
v/s Ratio Prot	c0.08	c0.40		0.08	0.39		0.10	c0.23		c0.18	0.11	
v/s Ratio Perm			0.08			0.07			0.04			0.03
v/c Ratio	0.99	1.04	0.21	1.00	1.03	0.19	0.73	0.99	0.17	1.05	0.39	0.12
Uniform Delay, d1	55.0	37.0	24.8	55.5	37.5	25.3	50.0	45.9	36.8	49.5	35.3	32.5
Progression Factor	1.19	0.76	0.53	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.3	21.4	0.0	57.1	28.7	0.2	5.7	29.9	1.0	49.5	1.2	0.6
Delay (s)	79.9	49.5	13.1	112.6	66.2	25.4	55.6	75.8	37.8	99.0	36.5	33.1
Level of Service	E	D	B	F	E	C	E	E	D	F	D	C
Approach Delay (s)		50.5			68.6			67.5			69.5	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	62.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	471	1880	205	160	1487	137	388	584	164	192	429	437
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	512	2043	223	174	1616	149	422	635	178	209	466	475
RTOR Reduction (vph)	0	0	76	0	0	73	0	0	91	0	0	185
Lane Group Flow (vph)	512	2043	147	174	1616	76	422	635	87	209	466	290
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.0	38.0	38.0	5.0	29.0	29.0	12.0	24.0	24.0	7.0	19.0	19.0
Effective Green, g (s)	14.0	38.0	38.0	5.0	29.0	29.0	12.0	24.0	24.0	7.0	19.0	19.0
Actuated g/C Ratio	0.16	0.42	0.42	0.06	0.32	0.32	0.13	0.27	0.27	0.08	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	534	2147	668	191	1639	510	458	944	422	267	747	334
v/s Ratio Prot	c0.15	c0.40		0.05	0.32		c0.12	0.18		0.06	0.13	
v/s Ratio Perm			0.09			0.05			0.05			c0.18
v/c Ratio	0.96	0.95	0.22	0.91	0.99	0.15	0.92	0.67	0.21	0.78	0.62	0.87
Uniform Delay, d1	37.7	25.1	16.6	42.3	30.3	21.7	38.5	29.5	25.6	40.8	32.3	34.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.34	1.76
Incremental Delay, d2	28.5	10.3	0.2	40.9	18.8	0.1	24.0	3.8	1.1	11.3	3.1	20.7
Delay (s)	66.2	35.4	16.7	83.1	49.1	21.9	62.5	33.3	26.7	62.4	46.5	80.9
Level of Service	E	D	B	F	D	C	E	C	C	E	D	F
Approach Delay (s)		39.6			50.1			42.3			63.6	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM Average Control Delay	46.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	218	1609	112	139	1362	131	224	340	101	215	556	182
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	237	1749	122	151	1480	142	243	370	110	234	604	198
RTOR Reduction (vph)	0	0	70	0	0	81	0	0	82	0	0	103
Lane Group Flow (vph)	237	1749	52	151	1480	61	243	370	28	234	604	95
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	26.0	26.0	4.0	23.0	23.0	6.0	18.0	18.0	6.0	18.0	18.0
Effective Green, g (s)	7.0	26.0	26.0	4.0	23.0	23.0	6.0	18.0	18.0	6.0	18.0	18.0
Actuated g/C Ratio	0.10	0.37	0.37	0.06	0.33	0.33	0.09	0.26	0.26	0.09	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1889	588	196	1671	520	294	910	407	294	910	407
v/s Ratio Prot	c0.07	c0.34		0.04	0.29		c0.07	0.10		0.07	c0.17	
v/s Ratio Perm			0.03			0.04			0.02			0.06
v/c Ratio	0.69	0.93	0.09	0.77	0.89	0.12	0.83	0.41	0.07	0.80	0.66	0.23
Uniform Delay, d1	30.5	21.1	14.3	32.5	22.3	16.4	31.5	21.6	19.7	31.4	23.3	20.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	8.3	0.1	16.9	6.0	0.1	17.0	1.3	0.3	13.8	3.8	1.4
Delay (s)	36.4	29.4	14.4	49.4	28.3	16.5	48.5	22.9	20.0	45.2	27.1	21.9
Level of Service	D	C	B	D	C	B	D	C	B	D	C	C
Approach Delay (s)		29.3			29.1			31.1			30.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.93	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3300	
Flt Permitted		1.00	1.00	0.95	1.00		0.63		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1179		1583	1770	3300	
Volume (vph)	0	959	63	289	1000	0	46	0	388	192	96	78
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1042	68	314	1087	0	50	0	422	209	104	85
RTOR Reduction (vph)	0	0	25	0	0	0	0	0	305	0	52	0
Lane Group Flow (vph)	0	1042	43	314	1087	0	50	0	117	209	137	0
Turn Type			Perm	Prot			custom		custom	Prot		
Protected Phases		4		3	8					1	6	
Permitted Phases			4				2		2			
Actuated Green, G (s)		27.8	27.8	17.5	49.3		16.0		16.0	12.0	32.0	
Effective Green, g (s)		27.8	27.8	17.5	49.3		16.0		16.0	12.0	32.0	
Actuated g/C Ratio		0.31	0.31	0.20	0.55		0.18		0.18	0.13	0.36	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1102	493	347	1954		211		284	238	1183	
v/s Ratio Prot		c0.29		c0.18	0.31					c0.12	0.04	
v/s Ratio Perm			0.03				0.04		c0.07			
v/c Ratio		0.95	0.09	0.90	0.56		0.24		0.41	0.88	0.12	
Uniform Delay, d1		30.0	21.8	35.1	12.9		31.4		32.5	37.9	19.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		15.6	0.1	25.8	0.3		0.6		1.0	28.4	0.2	
Delay (s)		45.7	21.8	60.9	13.3		32.0		33.4	66.4	19.4	
Level of Service		D	C	E	B		C		C	E	B	
Approach Delay (s)		44.2			24.0			33.3			44.1	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1498	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.47		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1498	1504	1700		1583
Volume (vph)	214	973	0	0	774	673	513	10	694	319	0	329
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	233	1058	0	0	841	732	558	11	754	347	0	358
RTOR Reduction (vph)	0	0	0	0	0	262	0	41	41	0	0	190
Lane Group Flow (vph)	233	1058	0	0	841	470	422	434	385	347	0	168
Turn Type	Prot					Prot	Split		Perm	custom		custom
Protected Phases	7	4			8	8	2	2				
Permitted Phases									2	6		6
Actuated Green, G (s)	12.0	42.0			26.0	26.0	27.0	27.0	27.0	19.0		19.0
Effective Green, g (s)	12.0	42.0			26.0	26.0	27.0	27.0	27.0	19.0		19.0
Actuated g/C Ratio	0.12	0.42			0.26	0.26	0.27	0.27	0.27	0.19		0.19
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	212	1486			920	412	454	404	406	323		301
v/s Ratio Prot	c0.13	0.30			0.24	c0.30	0.25	c0.29				
v/s Ratio Perm									0.26	c0.20		0.11
v/c Ratio	1.10	0.71			0.91	1.14	0.93	1.07	0.95	1.07		0.56
Uniform Delay, d1	44.0	24.0			35.9	37.0	35.6	36.5	35.8	40.5		36.7
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	90.8	1.6			13.3	88.7	27.8	66.1	33.4	71.2		7.3
Delay (s)	134.8	25.6			49.2	125.7	63.4	102.6	69.3	111.7		43.9
Level of Service	F	C			D	F	E	F	E	F		D
Approach Delay (s)		45.3			84.8			79.4			77.3	
Approach LOS		D			F			E			E	

Intersection Summary			
HCM Average Control Delay	71.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

EXISTING PLUS PROJECT PHASES 1-5 WITH MITIGATION TRAFFIC CONDITION

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	3433	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	3433	1583
Volume (vph)	98	29	11	465	766	145
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	32	12	505	833	158
RTOR Reduction (vph)	0	0	0	338	0	105
Lane Group Flow (vph)	107	32	12	167	833	53
Turn Type	Prot			Perm		custom
Protected Phases	1	6	2			
Permitted Phases				2	8	8
Actuated Green, G (s)	6.3	28.5	18.2	18.2	18.5	18.5
Effective Green, g (s)	6.3	28.5	18.2	18.2	18.5	18.5
Actuated g/C Ratio	0.11	0.52	0.33	0.33	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	203	1834	1171	524	1155	532
v/s Ratio Prot	c0.06	0.01	0.00			
v/s Ratio Perm				c0.11	c0.24	0.03
v/c Ratio	0.53	0.02	0.01	0.32	0.72	0.10
Uniform Delay, d1	22.9	6.4	12.4	13.8	16.0	12.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.0	0.0	1.6	2.2	0.1
Delay (s)	25.4	6.5	12.4	15.4	18.2	12.6
Level of Service	C	A	B	B	B	B
Approach Delay (s)		21.0	15.3		17.3	
Approach LOS		C	B		B	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Volume (vph)	19	1315	511	0	0	974
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	1429	555	0	0	1059
RTOR Reduction (vph)	0	353	0	0	0	0
Lane Group Flow (vph)	21	1076	555	0	0	1059
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	31.0	31.0	51.0			51.0
Effective Green, g (s)	31.0	31.0	51.0			51.0
Actuated g/C Ratio	0.34	0.34	0.57			0.57
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	610	960	1056			1056
v/s Ratio Prot	0.01		0.30			c0.57
v/s Ratio Perm		c0.39				
v/c Ratio	0.03	1.12	0.53			1.00
Uniform Delay, d1	19.6	29.5	12.0			19.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	68.1	0.5			28.4
Delay (s)	19.7	97.6	12.5			47.9
Level of Service	B	F	B			D
Approach Delay (s)	96.5		12.5			47.9
Approach LOS	F		B			D

Intersection Summary			
HCM Average Control Delay	64.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	1.00	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	1863	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	1863	1583	3433	5085	1583	1770	3539	1583
Volume (vph)	341	116	151	160	142	154	33	1425	353	203	706	383
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	371	126	164	174	154	167	36	1549	384	221	767	416
RTOR Reduction (vph)	0	0	138	0	0	4	0	0	199	0	0	159
Lane Group Flow (vph)	371	126	26	174	154	163	36	1549	185	221	767	257
Turn Type	Prot		Perm	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	12.7	12.7	8.9	11.6	25.2	3.4	28.8	37.7	13.6	39.0	49.0
Effective Green, g (s)	10.0	12.7	12.7	8.9	11.6	25.2	3.4	28.8	37.7	13.6	39.0	49.0
Actuated g/C Ratio	0.12	0.16	0.16	0.11	0.14	0.32	0.04	0.36	0.47	0.17	0.49	0.61
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	429	562	251	382	270	578	146	1831	825	301	1725	1049
v/s Ratio Prot	c0.11	0.04		0.05	c0.08	0.05	0.01	c0.30	0.02	c0.12	0.22	0.03
v/s Ratio Perm			0.02			0.05			0.09			0.13
v/c Ratio	0.86	0.22	0.10	0.46	0.57	0.28	0.25	0.85	0.22	0.73	0.44	0.25
Uniform Delay, d1	34.3	29.4	28.8	33.3	31.9	20.6	37.1	23.6	12.5	31.5	13.4	7.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.4	0.2	0.2	0.9	2.9	0.3	0.9	5.0	0.1	8.9	0.8	0.1
Delay (s)	50.7	29.6	29.0	34.1	34.8	20.9	37.9	28.6	12.6	40.4	14.2	7.2
Level of Service	D	C	C	C	C	C	D	C	B	D	B	A
Approach Delay (s)		41.3			29.9			25.7			16.3	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #1 Weber/Herndon
******************************************************************************
Average Delay (sec/veh):      0.2       Worst Case Level Of Service: B[ 13.2]
******************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  1    0  0  3  0  1    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    39     0    0     0     0 1112   274     9 1310     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0    39     0    0     0     0 1112   274     9 1310     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0    39     0    0     0     0 1112   274     9 1310     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    42     0    0     0     0 1209   298    10 1424     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    42     0    0     0     0 1209   298    10 1424     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   403  xxxx xxxx   712  xxxx xxxx xxxxx  1507 xxxx xxxxx
Potent Cap.: xxxx xxxx   603  xxxx xxxx   379  xxxx xxxx xxxxx   450 xxxx xxxxx
Move Cap.:   xxxx xxxx   603  xxxx xxxx   379  xxxx xxxx xxxxx   450 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.07  xxxx xxxx  0.00  xxxx xxxx  xxxx  0.02 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.2  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx  11.4 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  13.2 xxxx xxxxx
LOS by Move:   *    *     B     *    *     *     *    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      11.4           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        B                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Volume (vph)	545	569	203	934	498	238
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	592	618	221	1015	541	259
RTOR Reduction (vph)	0	435	0	0	0	162
Lane Group Flow (vph)	592	183	221	1015	541	97
Turn Type		Perm	Prot			custom
Protected Phases	4		3	8	5	
Permitted Phases		4				2
Actuated Green, G (s)	16.3	16.3	6.0	26.3	20.7	20.7
Effective Green, g (s)	16.3	16.3	6.0	26.3	20.7	20.7
Actuated g/C Ratio	0.30	0.30	0.11	0.48	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1049	469	375	1692	1292	596
v/s Ratio Prot	0.17		0.06	c0.29	c0.16	
v/s Ratio Perm		0.12				0.06
v/c Ratio	0.56	0.39	0.59	0.60	0.42	0.16
Uniform Delay, d1	16.3	15.4	23.3	10.5	12.7	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.5	2.4	0.6	1.0	0.6
Delay (s)	17.0	15.9	25.7	11.1	13.7	12.0
Level of Service	B	B	C	B	B	B
Approach Delay (s)	16.5			13.7	13.1	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	6	847	56	330	1226	57	90	39	318	127	42	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	921	61	359	1333	62	98	42	346	138	46	26
RTOR Reduction (vph)	0	0	40	0	0	21	0	0	163	0	0	20
Lane Group Flow (vph)	7	921	21	359	1333	41	98	42	183	138	46	6
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	22.7	22.7	9.0	30.9	30.9	3.2	14.1	14.1	3.2	14.1	14.1
Effective Green, g (s)	0.8	22.7	22.7	9.0	30.9	30.9	3.2	14.1	14.1	3.2	14.1	14.1
Actuated g/C Ratio	0.01	0.35	0.35	0.14	0.48	0.48	0.05	0.22	0.22	0.05	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	42	1236	553	475	1682	753	169	404	343	169	404	343
v/s Ratio Prot	0.00	0.26		c0.10	c0.38		0.03	0.02		c0.04	0.02	
v/s Ratio Perm			0.01			0.03			c0.12			0.00
v/c Ratio	0.17	0.75	0.04	0.76	0.79	0.05	0.58	0.10	0.53	0.82	0.11	0.02
Uniform Delay, d1	31.8	18.6	14.0	26.9	14.4	9.2	30.2	20.4	22.5	30.6	20.4	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	2.5	0.0	6.7	2.6	0.0	4.8	0.5	5.8	25.3	0.6	0.1
Delay (s)	33.6	21.1	14.0	33.7	17.0	9.2	35.0	20.9	28.4	55.9	21.0	20.1
Level of Service	C	C	B	C	B	A	D	C	C	E	C	C
Approach Delay (s)		20.7			20.1			29.1			43.8	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	690	1751	74	274	1015	323	162	806	169	157	815	691
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	750	1903	80	298	1103	351	176	876	184	171	886	751
RTOR Reduction (vph)	0	0	45	0	0	111	0	0	143	0	0	3
Lane Group Flow (vph)	750	1903	35	298	1103	240	176	876	41	171	886	748
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.5	33.0	33.0	8.0	19.5	19.5	5.0	18.0	18.0	5.0	18.0	39.5
Effective Green, g (s)	21.5	33.0	33.0	8.0	19.5	19.5	5.0	18.0	18.0	5.0	18.0	39.5
Actuated g/C Ratio	0.27	0.41	0.41	0.10	0.24	0.24	0.06	0.22	0.22	0.06	0.22	0.49
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	923	2098	653	343	1239	386	215	1144	356	215	1144	861
v/s Ratio Prot	0.22	c0.37		0.09	0.22		c0.05	0.17		0.05	0.17	c0.23
v/s Ratio Perm			0.02			0.15			0.03			0.24
v/c Ratio	0.81	0.91	0.05	0.87	0.89	0.62	0.82	0.77	0.12	0.80	0.77	0.87
Uniform Delay, d1	27.4	22.1	14.1	35.5	29.2	27.0	37.1	29.0	24.7	37.0	29.1	18.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	6.1	0.0	20.1	8.3	3.1	20.9	4.9	0.7	18.1	5.1	9.3
Delay (s)	32.9	28.2	14.2	55.6	37.5	30.1	58.0	33.9	25.3	55.1	34.2	27.2
Level of Service	C	C	B	E	D	C	E	C	C	E	C	C
Approach Delay (s)		29.1			39.1			36.1			33.3	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			3433	1583
Volume (vph)	724	161	0	0	519	77
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	787	175	0	0	564	84
RTOR Reduction (vph)	0	113	0	0	0	44
Lane Group Flow (vph)	787	62	0	0	564	40
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	14.2	14.2			17.8	17.8
Effective Green, g (s)	14.2	14.2			17.8	17.8
Actuated g/C Ratio	0.36	0.36			0.44	0.44
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1256	562			1528	704
v/s Ratio Prot	c0.22				c0.16	
v/s Ratio Perm		0.04				0.03
v/c Ratio	0.63	0.11			0.37	0.06
Uniform Delay, d1	10.7	8.7			7.4	6.3
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	1.0	0.1			0.7	0.2
Delay (s)	11.7	8.7			8.1	6.5
Level of Service	B	A			A	A
Approach Delay (s)	11.2			0.0	7.9	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Volume (vph)	32	335	344	9	40	131
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	364	374	10	43	142
RTOR Reduction (vph)	0	0	0	8	0	100
Lane Group Flow (vph)	35	364	374	2	43	42
Turn Type	Prot			Perm		custom
Protected Phases	7	4	8		1	
Permitted Phases				8		6
Actuated Green, G (s)	0.5	10.8	6.3	6.3	8.0	8.0
Effective Green, g (s)	0.5	10.8	6.3	6.3	8.0	8.0
Actuated g/C Ratio	0.02	0.40	0.24	0.24	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	33	1426	832	372	528	473
v/s Ratio Prot	c0.02	0.10	c0.11		0.02	
v/s Ratio Perm				0.00		c0.03
v/c Ratio	1.06	0.26	0.45	0.01	0.08	0.09
Uniform Delay, d1	13.2	5.3	8.8	7.9	6.8	6.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	175.6	0.1	0.4	0.0	0.1	0.1
Delay (s)	188.7	5.4	9.2	7.9	6.8	6.9
Level of Service	F	A	A	A	A	A
Approach Delay (s)		21.5	9.1		6.9	
Approach LOS		C	A		A	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	26.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1751		1770	1863	1583	1770	1825		1770	1863	1583
Flt Permitted	0.59	1.00		0.61	1.00	1.00	0.74	1.00		0.67	1.00	1.00
Satd. Flow (perm)	1093	1751		1132	1863	1583	1379	1825		1253	1863	1583
Volume (vph)	152	134	89	23	259	90	89	105	17	47	24	342
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	165	146	97	25	282	98	97	114	18	51	26	372
RTOR Reduction (vph)	0	68	0	0	0	69	0	11	0	0	0	222
Lane Group Flow (vph)	165	175	0	25	282	29	97	121	0	51	26	150
Turn Type	Perm			Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)	8.1	8.1		8.1	8.1	8.1	10.9	10.9		10.9	10.9	10.9
Effective Green, g (s)	8.1	8.1		8.1	8.1	8.1	10.9	10.9		10.9	10.9	10.9
Actuated g/C Ratio	0.30	0.30		0.30	0.30	0.30	0.40	0.40		0.40	0.40	0.40
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	328	525		340	559	475	557	737		506	752	639
v/s Ratio Prot		0.10			c0.15			0.07			0.01	
v/s Ratio Perm	0.15			0.02		0.02	0.07			0.04		c0.09
v/c Ratio	0.50	0.33		0.07	0.50	0.06	0.17	0.16		0.10	0.03	0.24
Uniform Delay, d1	7.8	7.4		6.8	7.8	6.7	5.2	5.1		5.0	4.9	5.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	0.4		0.1	0.7	0.1	0.1	0.1		0.1	0.0	0.2
Delay (s)	9.0	7.7		6.9	8.5	6.8	5.3	5.2		5.1	4.9	5.5
Level of Service	A	A		A	A	A	A	A		A	A	A
Approach Delay (s)		8.2			8.0			5.3			5.4	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	27.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	1.00	0.97	0.91
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	1863	3433	1441
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	1863	3433	1441
Volume (vph)	404	416	396	840	682	108
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	439	452	430	913	741	117
RTOR Reduction (vph)	0	296	0	0	0	86
Lane Group Flow (vph)	439	156	430	913	741	31
Turn Type		Perm	Prot			Perm
Protected Phases	6		5	2	4	
Permitted Phases		6				4
Actuated Green, G (s)	20.7	20.7	11.2	35.9	16.1	16.1
Effective Green, g (s)	20.7	20.7	11.2	35.9	16.1	16.1
Actuated g/C Ratio	0.34	0.34	0.19	0.60	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1221	546	641	1115	921	387
v/s Ratio Prot	0.12		0.13	c0.49	c0.22	
v/s Ratio Perm		0.10				0.02
v/c Ratio	0.36	0.29	0.67	0.82	0.80	0.08
Uniform Delay, d1	14.7	14.3	22.7	9.5	20.5	16.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	1.3	2.8	6.7	5.2	0.1
Delay (s)	15.5	15.6	25.5	16.2	25.6	16.5
Level of Service	B	B	C	B	C	B
Approach Delay (s)	15.6			19.2	24.4	
Approach LOS	B			B	C	

Intersection Summary			
HCM Average Control Delay	19.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95			1.00	1.00		1.00		0.95	0.95	1.00
Frt	1.00	0.95			1.00	0.85		1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98		0.95	0.96	1.00
Satd. Flow (prot)	3433	3357			1863	1583		1821		1681	1701	1583
Flt Permitted	0.95	1.00			1.00	1.00		0.98		0.95	0.96	1.00
Satd. Flow (perm)	3433	3357			1863	1583		1821		1681	1701	1583
Volume (vph)	140	120	63	0	168	591	15	22	1	519	59	232
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	130	68	0	183	642	16	24	1	564	64	252
RTOR Reduction (vph)	0	36	0	0	0	237	0	1	0	0	0	172
Lane Group Flow (vph)	152	162	0	0	183	405	0	40	0	306	322	80
Turn Type	Prot			Perm		pm+ov	Split			Split		Perm
Protected Phases	1	6			2	8	4	4		8	8	
Permitted Phases				2		2						8
Actuated Green, G (s)	6.5	32.6			22.1	44.2		3.3		22.1	22.1	22.1
Effective Green, g (s)	6.5	32.6			22.1	44.2		3.3		22.1	22.1	22.1
Actuated g/C Ratio	0.09	0.47			0.32	0.63		0.05		0.32	0.32	0.32
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	319	1563			588	1000		86		531	537	500
v/s Ratio Prot	c0.04	0.05			0.10	c0.13		c0.02		0.18	c0.19	
v/s Ratio Perm						0.13						0.05
v/c Ratio	0.48	0.10			0.31	0.41		0.47		0.58	0.60	0.16
Uniform Delay, d1	30.1	10.5			18.2	6.4		32.5		20.0	20.2	17.3
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1			1.4	0.3		3.9		1.5	1.8	0.1
Delay (s)	31.3	10.6			19.6	6.7		36.4		21.6	22.0	17.4
Level of Service	C	B			B	A		D		C	C	B
Approach Delay (s)		19.6			9.5			36.4			20.5	
Approach LOS		B			A			D			C	

Intersection Summary			
HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	1863	1583
Flt Permitted	0.23	1.00	1.00	0.41	1.00	1.00	0.75	1.00	1.00	0.75	1.00	1.00
Satd. Flow (perm)	421	3539	1583	768	3539	1583	1394	3539	1583	1396	1863	1583
Volume (vph)	17	578	36	25	1096	63	166	11	18	109	13	47
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	628	39	27	1191	68	180	12	20	118	14	51
RTOR Reduction (vph)	0	0	20	0	0	34	0	0	14	0	0	25
Lane Group Flow (vph)	18	628	19	27	1191	34	180	12	6	118	14	26
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	17.7	17.7	17.7	17.7	17.7	17.7	10.0	10.0	10.0	10.0	10.0	10.0
Effective Green, g (s)	17.7	17.7	17.7	17.7	17.7	17.7	10.0	10.0	10.0	10.0	10.0	10.0
Actuated g/C Ratio	0.50	0.50	0.50	0.50	0.50	0.50	0.28	0.28	0.28	0.28	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	209	1755	785	381	1755	785	390	991	443	391	522	443
v/s Ratio Prot		0.18			c0.34			0.00			0.01	
v/s Ratio Perm	0.04		0.01	0.04		0.02	c0.13		0.00	0.08		0.02
v/c Ratio	0.09	0.36	0.02	0.07	0.68	0.04	0.46	0.01	0.01	0.30	0.03	0.06
Uniform Delay, d1	4.7	5.5	4.6	4.7	6.8	4.6	10.6	9.3	9.3	10.1	9.3	9.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.0	0.1	1.1	0.0	0.9	0.0	0.0	0.4	0.0	0.1
Delay (s)	4.9	5.6	4.6	4.8	7.9	4.7	11.5	9.3	9.3	10.5	9.3	9.5
Level of Service	A	A	A	A	A	A	B	A	A	B	A	A
Approach Delay (s)		5.6			7.7			11.2			10.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	35.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3471		1770	3477		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3471		1770	3477		1770	3539	1583	1770	3539	1583
Volume (vph)	178	695	103	104	553	74	42	403	54	60	417	154
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	755	112	113	601	80	46	438	59	65	453	167
RTOR Reduction (vph)	0	18	0	0	17	0	0	0	46	0	0	130
Lane Group Flow (vph)	193	849	0	113	664	0	46	438	13	65	453	37
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	8.1	18.5		4.6	15.0		2.1	11.9	11.9	2.1	11.9	11.9
Effective Green, g (s)	8.1	18.5		4.6	15.0		2.1	11.9	11.9	2.1	11.9	11.9
Actuated g/C Ratio	0.15	0.35		0.09	0.28		0.04	0.22	0.22	0.04	0.22	0.22
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	270	1209		153	982		70	793	355	70	793	355
v/s Ratio Prot	c0.11	c0.24		0.06	0.19		0.03	0.12		c0.04	c0.13	
v/s Ratio Perm									0.01			0.02
v/c Ratio	0.71	0.70		0.74	0.68		0.66	0.55	0.04	0.93	0.57	0.11
Uniform Delay, d1	21.4	14.9		23.7	16.9		25.1	18.2	16.1	25.4	18.3	16.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	1.9		16.9	1.9		20.1	0.8	0.0	82.1	1.0	0.1
Delay (s)	30.1	16.8		40.6	18.8		45.2	19.1	16.2	107.5	19.3	16.5
Level of Service	C	B		D	B		D	B	B	F	B	B
Approach Delay (s)		19.2			21.9			21.0			27.0	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	53.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	47	7	4	9	99	5	313	9	15	100	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	51	8	4	10	108	5	340	10	16	109	9

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	80	122	346	10	125	9
Volume Left (vph)	22	4	5	0	16	0
Volume Right (vph)	8	108	0	10	0	9
Hadj (s)	0.03	-0.49	0.04	-0.67	0.10	-0.67
Departure Headway (s)	5.3	4.8	5.2	4.5	5.5	4.7
Degree Utilization, x	0.12	0.16	0.50	0.01	0.19	0.01
Capacity (veh/h)	605	677	670	764	619	714
Control Delay (s)	9.1	8.7	12.1	6.4	8.6	6.6
Approach Delay (s)	9.1	8.7	12.0		8.5	
Approach LOS	A	A	B		A	

Intersection Summary			
Delay	10.4		
HCM Level of Service	B		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.10	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	180	3539	1770	1583
Volume (vph)	659	307	468	672	81	285
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	716	334	509	730	88	310
RTOR Reduction (vph)	0	130	0	0	0	260
Lane Group Flow (vph)	716	204	509	730	88	50
Turn Type		Perm	pm+pt			custom
Protected Phases	4		3	8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	37.4	37.4	67.4	67.4	14.6	14.6
Effective Green, g (s)	37.4	37.4	67.4	67.4	14.6	14.6
Actuated g/C Ratio	0.42	0.42	0.75	0.75	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	774	658	594	2650	287	257
v/s Ratio Prot	c0.38		c0.25	0.21		
v/s Ratio Perm		0.13	0.39		c0.05	0.03
v/c Ratio	0.93	0.31	0.86	0.28	0.31	0.20
Uniform Delay, d1	25.0	17.6	24.0	3.6	33.2	32.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.7	0.3	11.7	0.1	2.7	1.7
Delay (s)	41.7	17.9	35.7	3.6	36.0	34.3
Level of Service	D	B	D	A	D	C
Approach Delay (s)	34.1			16.8	34.7	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	26.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	
Frt	1.00	1.00	1.00	0.85	0.97	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	3539	3539	1583	3364	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1770	3539	3539	1583	3364	
Volume (vph)	366	31	12	456	2286	639
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	398	34	13	496	2485	695
RTOR Reduction (vph)	0	0	0	450	19	0
Lane Group Flow (vph)	398	34	13	46	3161	0
Turn Type	Prot			Perm		
Protected Phases	1	6	2			
Permitted Phases				2	8	
Actuated Green, G (s)	18.0	33.1	11.1	11.1	78.9	
Effective Green, g (s)	18.0	33.1	11.1	11.1	78.9	
Actuated g/C Ratio	0.15	0.28	0.09	0.09	0.66	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	266	976	327	146	2212	
v/s Ratio Prot	c0.22	0.01	0.00			
v/s Ratio Perm				c0.03	c0.94	
v/c Ratio	1.50	0.03	0.04	0.31	1.43	
Uniform Delay, d1	51.0	31.8	49.6	50.9	20.5	
Progression Factor	1.00	1.00	1.41	5.92	1.15	
Incremental Delay, d2	242.1	0.1	0.2	4.0	193.3	
Delay (s)	293.1	31.8	70.2	305.3	216.9	
Level of Service	F	C	E	F	F	
Approach Delay (s)		272.6	299.3		216.9	
Approach LOS		F	F		F	

Intersection Summary			
HCM Average Control Delay	232.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	118.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Volume (vph)	20	1641	740	0	0	2948
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	1784	804	0	0	3204
RTOR Reduction (vph)	0	264	0	0	0	0
Lane Group Flow (vph)	22	1520	804	0	0	3204
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	35.0	35.0	77.0			77.0
Effective Green, g (s)	35.0	35.0	77.0			77.0
Actuated g/C Ratio	0.29	0.29	0.64			0.64
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	516	813	1195			1195
v/s Ratio Prot	0.01		0.43			c1.72
v/s Ratio Perm		c0.55				
v/c Ratio	0.04	1.87	0.67			2.68
Uniform Delay, d1	30.5	42.5	13.6			21.5
Progression Factor	1.00	1.00	2.51			1.52
Incremental Delay, d2	0.2	395.9	0.1			756.7
Delay (s)	30.6	438.4	34.2			789.4
Level of Service	C	F	C			F
Approach Delay (s)	433.4		34.2			789.4
Approach LOS	F		C			F

Intersection Summary			
HCM Average Control Delay	574.4	HCM Level of Service	F
HCM Volume to Capacity ratio	2.43		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	165.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	1.00	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	1863	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	1863	1583	3433	5085	1583	1770	3539	1583
Volume (vph)	247	166	109	1002	175	559	67	1441	834	435	1878	312
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	180	118	1089	190	608	73	1566	907	473	2041	339
RTOR Reduction (vph)	0	0	51	0	0	10	0	0	362	0	0	109
Lane Group Flow (vph)	268	180	67	1089	190	598	73	1566	545	473	2041	230
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.7	11.6	11.6	29.0	26.9	55.3	5.4	35.0	35.0	28.4	58.0	71.7
Effective Green, g (s)	13.7	11.6	11.6	29.0	26.9	55.3	5.4	35.0	35.0	28.4	58.0	71.7
Actuated g/C Ratio	0.11	0.10	0.10	0.24	0.22	0.46	0.05	0.29	0.29	0.24	0.48	0.60
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	392	342	153	830	418	782	154	1483	462	419	1711	999
v/s Ratio Prot	0.08	0.05		c0.32	0.10	c0.18	0.02	0.31		c0.27	c0.58	0.03
v/s Ratio Perm			0.04			0.20			0.34			0.12
v/c Ratio	0.68	0.53	0.43	1.31	0.45	0.76	0.47	1.06	1.18	1.13	1.19	0.23
Uniform Delay, d1	51.1	51.6	51.1	45.5	40.2	26.9	55.9	42.5	42.5	45.8	31.0	11.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.99	0.99	1.00	1.00	1.00
Incremental Delay, d2	4.9	1.5	2.0	149.0	0.8	4.5	0.2	27.1	83.1	84.0	92.9	0.1
Delay (s)	55.9	53.0	53.1	194.5	41.0	31.4	52.3	69.2	125.2	129.8	123.9	11.4
Level of Service	E	D	D	F	D	C	D	E	F	F	F	B
Approach Delay (s)		54.4			126.5			88.7			111.5	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	103.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

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                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #1 Weber/Herndon
******************************************************************************
Average Delay (sec/veh):      1.9       Worst Case Level Of Service: C[ 22.0]
******************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  1! 0  0    0  0  3  0  1    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0   303     0    0     0     0 1339   594    45 1769     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0   303     0    0     0     0 1339   594    45 1769     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0   303     0    0     0     0 1339   594    45 1769     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0   329     0    0     0     0 1455   646    49 1923     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0   329     0    0     0     0 1455   646    49 1923     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9   7.5  6.5   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3   3.5  4.0   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   485  2506 4122   961  xxxx xxxx xxxxx  2101 xxxx xxxxx
Potent Cap.: xxxx xxxx   533    15    2   260  xxxx xxxx xxxxx   265 xxxx xxxxx
Move Cap.:   xxxx xxxx   533     5    2   260  xxxx xxxx xxxxx   265 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.62  0.00 0.00  0.00  xxxx xxxx  xxxx  0.18 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   4.2  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.7 xxxx xxxxx
Control Del:xxxxx xxxx  22.0 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  21.6 xxxx xxxxx
LOS by Move:   *    *     C     *    *     *     *    *     *     C    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      22.0           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        C                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Volume (vph)	1254	319	337	759	1084	219
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1363	347	366	825	1178	238
RTOR Reduction (vph)	0	147	0	0	0	151
Lane Group Flow (vph)	1363	200	366	825	1178	87
Turn Type		Perm	Prot			custom
Protected Phases	4		3	8	5	
Permitted Phases		4				2
Actuated Green, G (s)	35.0	35.0	10.0	49.0	33.0	33.0
Effective Green, g (s)	35.0	35.0	10.0	49.0	33.0	33.0
Actuated g/C Ratio	0.39	0.39	0.11	0.54	0.37	0.37
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1376	616	381	1927	1259	580
v/s Ratio Prot	c0.39		c0.11	0.23	c0.34	
v/s Ratio Perm		0.13				0.06
v/c Ratio	0.99	0.32	0.96	0.43	0.94	0.15
Uniform Delay, d1	27.3	19.2	39.8	12.2	27.5	19.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.9	0.3	35.8	0.2	14.0	0.5
Delay (s)	49.3	19.5	75.6	12.3	41.5	19.7
Level of Service	D	B	E	B	D	B
Approach Delay (s)	43.2			31.8	37.8	
Approach LOS	D			C	D	

Intersection Summary			
HCM Average Control Delay	38.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	26	1220	69	303	1276	113	80	31	494	358	250	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	1326	75	329	1387	123	87	34	537	389	272	26
RTOR Reduction (vph)	0	0	42	0	0	29	0	0	104	0	0	18
Lane Group Flow (vph)	28	1326	33	329	1387	94	87	34	433	389	272	8
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	2.4	38.6	38.6	10.0	46.2	46.2	4.0	24.4	24.4	11.0	31.4	31.4
Effective Green, g (s)	2.4	38.6	38.6	10.0	46.2	46.2	4.0	24.4	24.4	11.0	31.4	31.4
Actuated g/C Ratio	0.02	0.39	0.39	0.10	0.46	0.46	0.04	0.24	0.24	0.11	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	82	1366	611	343	1635	731	137	455	386	378	585	497
v/s Ratio Prot	0.01	c0.37		c0.10	0.39		0.03	0.02		c0.11	0.15	
v/s Ratio Perm			0.02			0.06			c0.27			0.01
v/c Ratio	0.34	0.97	0.05	0.96	0.85	0.13	0.64	0.07	1.12	1.03	0.46	0.02
Uniform Delay, d1	48.0	30.1	19.3	44.8	23.8	15.4	47.3	29.1	37.8	44.5	27.6	23.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	17.7	0.0	37.4	4.3	0.1	9.3	0.3	82.8	54.0	2.6	0.1
Delay (s)	50.5	47.9	19.3	82.2	28.1	15.5	56.5	29.4	120.6	98.5	30.2	23.7
Level of Service	D	D	B	F	C	B	E	C	F	F	C	C
Approach Delay (s)		46.4			36.9			107.4			68.6	
Approach LOS		D			D			F			E	

Intersection Summary			
HCM Average Control Delay	54.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	640	1174	93	115	1725	165	221	1143	45	257	984	809
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	696	1276	101	125	1875	179	240	1242	49	279	1070	879
RTOR Reduction (vph)	0	0	54	0	0	64	0	0	37	0	0	1
Lane Group Flow (vph)	696	1276	47	125	1875	115	240	1242	12	279	1070	878
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.0	46.1	46.1	6.9	32.0	32.0	7.0	24.0	24.0	7.0	24.0	45.0
Effective Green, g (s)	21.0	46.1	46.1	6.9	32.0	32.0	7.0	24.0	24.0	7.0	24.0	45.0
Actuated g/C Ratio	0.21	0.46	0.46	0.07	0.32	0.32	0.07	0.24	0.24	0.07	0.24	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	721	2344	730	237	1627	507	240	1220	380	240	1220	712
v/s Ratio Prot	0.20	0.25		0.04	c0.37		0.07	c0.24		0.08	0.21	c0.26
v/s Ratio Perm			0.03			0.07			0.01			0.30
v/c Ratio	0.97	0.54	0.06	0.53	1.15	0.23	1.00	1.02	0.03	1.16	0.88	1.23
Uniform Delay, d1	39.1	19.4	15.0	45.0	34.0	24.9	46.5	38.0	29.1	46.5	36.6	27.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.0	0.3	0.0	2.1	76.1	0.2	58.1	30.4	0.2	109.1	9.0	116.9
Delay (s)	64.1	19.7	15.0	47.1	110.1	25.2	104.6	68.4	29.2	155.6	45.6	144.4
Level of Service	E	B	B	D	F	C	F	E	C	F	D	F
Approach Delay (s)		34.4			99.5			72.8			98.3	
Approach LOS		C			F			E			F	

Intersection Summary			
HCM Average Control Delay	77.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			3433	1583
Volume (vph)	1776	578	0	0	494	11
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1930	628	0	0	537	12
RTOR Reduction (vph)	0	227	0	0	0	9
Lane Group Flow (vph)	1930	401	0	0	537	3
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	38.3	38.3			13.7	13.7
Effective Green, g (s)	38.3	38.3			13.7	13.7
Actuated g/C Ratio	0.64	0.64			0.23	0.23
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	2259	1010			784	361
v/s Ratio Prot	c0.55				c0.16	
v/s Ratio Perm		0.25				0.00
v/c Ratio	0.85	0.40			0.68	0.01
Uniform Delay, d1	8.6	5.3			21.2	17.9
Progression Factor	1.56	5.52			1.00	1.00
Incremental Delay, d2	0.3	0.0			4.8	0.0
Delay (s)	13.8	29.0			26.0	17.9
Level of Service	B	C			C	B
Approach Delay (s)	17.5			0.0	25.8	
Approach LOS	B			A	C	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	3539	1583	1770	1583
Volume (vph)	150	647	659	84	71	63
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	703	716	91	77	68
RTOR Reduction (vph)	0	0	0	59	0	54
Lane Group Flow (vph)	163	703	716	32	77	14
Turn Type	Prot			Perm		custom
Protected Phases	7	4	8		1	
Permitted Phases				8		6
Actuated Green, G (s)	4.4	21.2	12.8	12.8	7.3	7.3
Effective Green, g (s)	4.4	21.2	12.8	12.8	7.3	7.3
Actuated g/C Ratio	0.12	0.58	0.35	0.35	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	213	2056	1241	555	354	317
v/s Ratio Prot	c0.09	0.20	c0.20		c0.04	
v/s Ratio Perm				0.02		0.01
v/c Ratio	0.77	0.34	0.58	0.06	0.22	0.04
Uniform Delay, d1	15.5	4.0	9.6	7.9	12.2	11.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.0	0.1	0.7	0.0	0.3	0.1
Delay (s)	30.6	4.1	10.3	7.9	12.5	11.8
Level of Service	C	A	B	A	B	B
Approach Delay (s)		9.1	10.0		12.2	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	36.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1832		1770	1863	1583	1770	1815		1770	1863	1583
Flt Permitted	0.43	1.00		0.18	1.00	1.00	0.41	1.00		0.56	1.00	1.00
Satd. Flow (perm)	795	1832		335	1863	1583	758	1815		1052	1863	1583
Volume (vph)	370	686	84	80	437	11	139	160	33	105	281	168
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	402	746	91	87	475	12	151	174	36	114	305	183
RTOR Reduction (vph)	0	7	0	0	0	5	0	11	0	0	0	133
Lane Group Flow (vph)	402	830	0	87	475	7	151	199	0	114	305	50
Turn Type	Perm			Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)	33.9	33.9		33.9	33.9	33.9	15.6	15.6		15.6	15.6	15.6
Effective Green, g (s)	33.9	33.9		33.9	33.9	33.9	15.6	15.6		15.6	15.6	15.6
Actuated g/C Ratio	0.59	0.59		0.59	0.59	0.59	0.27	0.27		0.27	0.27	0.27
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	469	1080		198	1098	933	206	492		285	505	429
v/s Ratio Prot		0.45			0.26			0.11			0.16	
v/s Ratio Perm	c0.51			0.26		0.00	c0.20			0.11		0.03
v/c Ratio	0.86	0.77		0.44	0.43	0.01	0.73	0.40		0.40	0.60	0.12
Uniform Delay, d1	9.8	8.9		6.5	6.5	4.9	19.1	17.1		17.1	18.3	15.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	14.3	3.4		1.6	0.3	0.0	12.6	0.5		0.9	2.0	0.1
Delay (s)	24.1	12.2		8.1	6.8	4.9	31.7	17.7		18.0	20.3	15.9
Level of Service	C	B		A	A	A	C	B		B	C	B
Approach Delay (s)		16.1			6.9			23.5			18.5	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95			1.00	1.00		1.00		0.95	0.95	1.00
Frt	1.00	0.98			1.00	0.85		1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.99		0.95	0.97	1.00
Satd. Flow (prot)	3433	3481			1863	1583		1838		1681	1710	1583
Flt Permitted	0.95	1.00			1.00	1.00		0.99		0.95	0.97	1.00
Satd. Flow (perm)	3433	3481			1861	1583		1838		1681	1710	1583
Volume (vph)	570	343	42	1	384	611	55	157	1	576	107	543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	620	373	46	1	417	664	60	171	1	626	116	590
RTOR Reduction (vph)	0	11	0	0	0	83	0	0	0	0	0	440
Lane Group Flow (vph)	620	408	0	0	418	581	0	232	0	362	380	150
Turn Type	Prot			Perm		pm+ov	Split			Split		Perm
Protected Phases	1	6			2	8	4	4		8	8	
Permitted Phases				2		2						8
Actuated Green, G (s)	16.0	41.6			21.6	43.4		14.6		21.8	21.8	21.8
Effective Green, g (s)	16.0	41.6			21.6	43.4		14.6		21.8	21.8	21.8
Actuated g/C Ratio	0.18	0.46			0.24	0.48		0.16		0.24	0.24	0.24
Clearance Time (s)	4.0	4.0			4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	610	1609			447	763		298		407	414	383
v/s Ratio Prot	c0.18	0.12				0.18		c0.13		0.22	c0.22	
v/s Ratio Perm					c0.22	0.18						0.10
v/c Ratio	1.02	0.25			0.94	0.76		0.78		0.89	0.92	0.39
Uniform Delay, d1	37.0	14.7			33.5	19.1		36.1		32.9	33.2	28.6
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.25	1.25	4.48
Incremental Delay, d2	40.6	0.4			29.1	4.5		12.1		13.0	16.4	0.4
Delay (s)	77.6	15.1			62.6	23.6		48.2		54.2	58.0	128.3
Level of Service	E	B			E	C		D		D	E	F
Approach Delay (s)		52.4			38.6			48.2			88.1	
Approach LOS		D			D			D			F	

Intersection Summary			
HCM Average Control Delay	61.0	HCM Level of Service	E
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	1863	1583
Flt Permitted	0.14	1.00	1.00	0.09	1.00	1.00	0.73	1.00	1.00	0.72	1.00	1.00
Satd. Flow (perm)	264	3539	1583	169	3539	1583	1360	3539	1583	1341	1863	1583
Volume (vph)	152	1668	87	56	1388	127	68	50	23	8	38	110
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	165	1813	95	61	1509	138	74	54	25	9	41	120
RTOR Reduction (vph)	0	0	22	0	0	32	0	0	22	0	0	61
Lane Group Flow (vph)	165	1813	73	61	1509	106	74	54	3	9	41	59
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	58.3	58.3	58.3	58.3	58.3	58.3	9.9	9.9	9.9	9.9	9.9	9.9
Effective Green, g (s)	58.3	58.3	58.3	58.3	58.3	58.3	9.9	9.9	9.9	9.9	9.9	9.9
Actuated g/C Ratio	0.77	0.77	0.77	0.77	0.77	0.77	0.13	0.13	0.13	0.13	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	202	2708	1211	129	2708	1211	177	460	206	174	242	206
v/s Ratio Prot		0.51			0.43			0.02			0.02	
v/s Ratio Perm	c0.62		0.05	0.36		0.07	c0.05		0.00	0.01		0.04
v/c Ratio	0.82	0.67	0.06	0.47	0.56	0.09	0.42	0.12	0.02	0.05	0.17	0.29
Uniform Delay, d1	5.6	4.3	2.2	3.3	3.7	2.3	30.5	29.3	28.9	29.0	29.5	30.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.9	0.6	0.0	2.7	0.3	0.0	1.6	0.1	0.0	0.1	0.3	0.8
Delay (s)	27.5	4.9	2.2	6.0	3.9	2.3	32.1	29.4	28.9	29.2	29.8	30.7
Level of Service	C	A	A	A	A	A	C	C	C	C	C	C
Approach Delay (s)		6.6			3.9			30.6			30.4	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	76.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	1.00	0.97	0.91
Frt	1.00	0.85	1.00	1.00	0.98	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (prot)	3539	1583	3433	1863	3401	1441
Flt Permitted	1.00	1.00	0.95	1.00	0.96	1.00
Satd. Flow (perm)	3539	1583	3433	1863	3401	1441
Volume (vph)	989	718	561	921	622	774
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1075	780	610	1001	676	841
RTOR Reduction (vph)	0	289	0	0	12	443
Lane Group Flow (vph)	1075	491	610	1001	752	310
Turn Type		Perm	Prot			Perm
Protected Phases	6		5	2	4	
Permitted Phases		6				4
Actuated Green, G (s)	37.3	37.3	20.7	62.0	20.0	20.0
Effective Green, g (s)	37.3	37.3	20.7	62.0	20.0	20.0
Actuated g/C Ratio	0.41	0.41	0.23	0.69	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1467	656	790	1283	756	320
v/s Ratio Prot	0.30		0.18	c0.54	c0.22	
v/s Ratio Perm		0.31				0.22
v/c Ratio	0.73	0.75	0.77	0.78	1.00	0.97
Uniform Delay, d1	22.2	22.4	32.4	9.4	35.0	34.7
Progression Factor	1.00	1.00	1.00	1.00	0.97	1.48
Incremental Delay, d2	3.3	7.6	4.7	4.8	21.9	28.2
Delay (s)	25.4	30.0	37.2	14.2	55.8	79.7
Level of Service	C	C	D	B	E	E
Approach Delay (s)	27.4			22.9	67.6	
Approach LOS	C			C	E	

Intersection Summary			
HCM Average Control Delay	38.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3489		1770	3492		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3489		1770	3492		1770	3539	1583	1770	3539	1583
Volume (vph)	195	956	99	8	944	91	33	952	144	71	899	87
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	212	1039	108	9	1026	99	36	1035	157	77	977	95
RTOR Reduction (vph)	0	8	0	0	8	0	0	0	100	0	0	63
Lane Group Flow (vph)	212	1139	0	9	1117	0	36	1035	57	77	977	32
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	11.0	43.4		0.8	33.2		2.4	30.0	30.0	4.0	31.6	31.6
Effective Green, g (s)	11.0	43.4		0.8	33.2		2.4	30.0	30.0	4.0	31.6	31.6
Actuated g/C Ratio	0.12	0.46		0.01	0.35		0.03	0.32	0.32	0.04	0.34	0.34
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	1607		15	1231		45	1127	504	75	1187	531
v/s Ratio Prot	c0.12	0.33		0.01	c0.32		0.02	c0.29		c0.04	0.28	
v/s Ratio Perm									0.04			0.02
v/c Ratio	1.02	0.71		0.60	0.91		0.80	0.92	0.11	1.03	0.82	0.06
Uniform Delay, d1	41.6	20.3		46.5	29.0		45.7	30.9	22.7	45.1	28.7	21.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	69.0	1.5		52.9	9.8		63.7	11.7	0.1	111.5	4.7	0.0
Delay (s)	110.6	21.8		99.4	38.8		109.4	42.6	22.8	156.6	33.5	21.3
Level of Service	F	C		F	D		F	D	C	F	C	C
Approach Delay (s)		35.6			39.3			42.0			40.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	39.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	94.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	4	154	3	16	61	142	21	259	6	153	347	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	167	3	17	66	154	23	282	7	166	377	4

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	175	238	304	7	166	382
Volume Left (vph)	4	17	23	0	166	0
Volume Right (vph)	3	154	0	7	0	4
Hadj (s)	0.03	-0.34	0.07	-0.67	0.53	0.03
Departure Headway (s)	7.0	6.4	7.0	6.2	7.1	6.6
Degree Utilization, x	0.34	0.43	0.59	0.01	0.33	0.70
Capacity (veh/h)	454	507	487	539	487	526
Control Delay (s)	13.5	14.1	18.3	8.1	12.3	22.2
Approach Delay (s)	13.5	14.1	18.1		19.2	
Approach LOS	B	B	C		C	

Intersection Summary			
Delay	17.2		
HCM Level of Service	C		
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.07	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	136	3539	1770	1583
Volume (vph)	873	86	410	917	143	482
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	949	93	446	997	155	524
RTOR Reduction (vph)	0	24	0	0	0	328
Lane Group Flow (vph)	949	69	446	997	155	196
Turn Type		Perm	pm+pt			custom
Protected Phases	4		3	8		
Permitted Phases		4	8		2	2
Actuated Green, G (s)	50.7	50.7	77.3	77.3	14.7	14.7
Effective Green, g (s)	50.7	50.7	77.3	77.3	14.7	14.7
Actuated g/C Ratio	0.51	0.51	0.77	0.77	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	945	803	474	2736	260	233
v/s Ratio Prot	c0.51		c0.21	0.28		
v/s Ratio Perm		0.04	0.51		0.09	c0.12
v/c Ratio	1.00	0.09	0.94	0.36	0.60	0.84
Uniform Delay, d1	24.6	12.7	32.4	3.6	39.9	41.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	30.3	0.0	27.1	0.1	9.7	29.3
Delay (s)	55.0	12.8	59.5	3.7	49.6	70.9
Level of Service	D	B	E	A	D	E
Approach Delay (s)	51.2			20.9	66.0	
Approach LOS	D			C	E	

Intersection Summary			
HCM Average Control Delay	40.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

2010 BASELINE PLUS PROJECT PHASE 1 TRAFFIC CONDITION

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	105	32	12	546	1198	155
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	114	35	13	593	1302	168

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	149	13	593	1302	168
Volume Left (vph)	114	0	0	1302	0
Volume Right (vph)	0	0	593	0	168
Hadj (s)	0.19	0.03	-0.67	0.53	-0.67
Departure Headway (s)	7.5	6.9	6.2	7.3	6.1
Degree Utilization, x	0.31	0.03	1.03	2.63	0.28
Capacity (veh/h)	474	508	580	508	586
Control Delay (s)	13.9	8.9	68.3	753.4	10.3
Approach Delay (s)	13.9	67.0		668.3	
Approach LOS	B	F		F	

Intersection Summary			
Delay	460.7		
HCM Level of Service	F		
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	28	39	0	654	1430	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	42	0	711	1554	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1086	
pX, platoon unblocked	0.56	0.56	0.56			
vC, conflicting volume	2265	1554	1554			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3277	1998	1998			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	0	100			
cM capacity (veh/h)	5	42	159			

Direction, Lane #	SE 1	SE 2	NE 1	SW 1
Volume Total	30	42	711	1554
Volume Left	30	0	0	0
Volume Right	0	42	0	0
cSH	5	42	1700	1700
Volume to Capacity	5.54	1.01	0.42	0.91
Queue Length 95th (ft)	Err	101	0	0
Control Delay (s)	Err	292.4	0.0	0.0
Lane LOS	F	F		
Approach Delay (s)	4348.9		0.0	0.0
Approach LOS	F			

Intersection Summary			
Average Delay	135.5		
Intersection Capacity Utilization	134.1%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	55	838	675	0	0	1379
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	911	734	0	0	1499
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						587
pX, platoon unblocked	0.59					
vC, conflicting volume	2233	734			734	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3100	734			734	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	0			100	
cM capacity (veh/h)	8	420			871	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	971	734	1499
Volume Left	60	0	0
Volume Right	911	0	0
cSH	97	1700	1700
Volume to Capacity	10.04	0.43	0.88
Queue Length 95th (ft)	Err	0	0
Control Delay (s)	Err	0.0	0.0
Lane LOS	F		
Approach Delay (s)	Err	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	3029.9		
Intersection Capacity Utilization	134.1%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Volume (vph)	382	114	246	62	200	111	190	1240	66	146	1090	627
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	415	124	267	67	217	121	207	1348	72	159	1185	682
RTOR Reduction (vph)	0	0	161	0	0	105	0	0	45	0	0	248
Lane Group Flow (vph)	415	124	106	67	217	16	207	1348	27	159	1185	434
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.2	18.8	18.8	3.2	10.8	10.8	9.8	29.9	29.9	12.1	32.2	32.2
Effective Green, g (s)	11.2	18.8	18.8	3.2	10.8	10.8	9.8	29.9	29.9	12.1	32.2	32.2
Actuated g/C Ratio	0.14	0.24	0.24	0.04	0.14	0.14	0.12	0.37	0.37	0.15	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	481	832	372	137	478	214	421	1901	592	268	1424	637
v/s Ratio Prot	c0.12	0.04		0.02	c0.06		0.06	0.27		c0.09	c0.33	
v/s Ratio Perm			0.07			0.01			0.02			0.27
v/c Ratio	0.86	0.15	0.29	0.49	0.45	0.08	0.49	0.71	0.05	0.59	0.83	0.68
Uniform Delay, d1	33.6	24.3	25.1	37.6	31.9	30.2	32.8	21.3	16.0	31.7	21.5	19.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.7	0.1	0.4	2.7	0.7	0.2	0.9	2.3	0.1	3.5	5.8	5.8
Delay (s)	48.4	24.3	25.5	40.3	32.6	30.4	33.7	23.6	16.1	35.2	27.3	25.5
Level of Service	D	C	C	D	C	C	C	C	B	D	C	C
Approach Delay (s)		37.1			33.2			24.6			27.3	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

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                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Weber/Herndon
********************************************************************************
Average Delay (sec/veh):      0.4       Worst Case Level Of Service: C[ 19.8]
********************************************************************************
Street Name:              Weber                             Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  1    0  0  3  0  1    1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    60     0    0     0     0 1775   104    34 2152     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0    60     0    0     0     0 1775   104    34 2152     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0    60     0    0     0     0 1775   104    34 2152     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    65     0    0     0     0 1929   113    37 2339     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    65     0    0     0     0 1929   113    37 2339     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   643  xxxx xxxx   780  xxxx xxxx xxxxx  2042 xxxx xxxxx
Potent Cap.: xxxx xxxx   421  xxxx xxxx   343  xxxx xxxx xxxxx   280 xxxx xxxxx
Move Cap.:   xxxx xxxx   421  xxxx xxxx   343  xxxx xxxx xxxxx   280 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.15  xxxx xxxx  0.00  xxxx xxxx  xxxx  0.13 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.5  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.4 xxxx xxxxx
Control Del:xxxxx xxxx  15.1 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  19.8 xxxx xxxxx
LOS by Move:   *    *     C     *    *     *     *    *     *     C    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      15.1           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        C                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	346	988	501	207	1387	223	487	39	204	206	48	312
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	376	1074	545	225	1508	242	529	42	222	224	52	339
RTOR Reduction (vph)	0	0	220	0	0	69	0	0	173	0	0	201
Lane Group Flow (vph)	376	1074	325	225	1508	173	529	42	49	224	52	138
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	18.0	42.0	42.0	16.0	40.0	40.0	29.0	26.6	26.6	19.4	17.0	17.0
Effective Green, g (s)	18.0	42.0	42.0	16.0	40.0	40.0	29.0	26.6	26.6	19.4	17.0	17.0
Actuated g/C Ratio	0.15	0.35	0.35	0.13	0.33	0.33	0.24	0.22	0.22	0.16	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	266	1239	554	236	1180	528	428	413	351	286	264	224
v/s Ratio Prot	c0.21	0.30		0.13	c0.43		c0.30	0.02		0.13	0.03	
v/s Ratio Perm			0.21			0.11			0.03			c0.09
v/c Ratio	1.41	0.87	0.59	0.95	1.28	0.33	1.24	0.10	0.14	0.78	0.20	0.62
Uniform Delay, d1	51.0	36.4	31.9	51.6	40.0	29.9	45.5	37.2	37.5	48.3	45.5	48.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	206.9	6.6	1.6	45.4	131.7	0.4	124.9	0.5	0.8	13.1	0.4	5.0
Delay (s)	257.9	43.0	33.5	97.0	171.7	30.3	170.4	37.7	38.3	61.4	45.8	53.4
Level of Service	F	D	C	F	F	C	F	D	D	E	D	D
Approach Delay (s)		80.9			145.9			126.4			55.7	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM Average Control Delay	108.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	101.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1618		3433	1715	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	1618		3433	1715	
Volume (vph)	68	1069	9	162	1431	12	68	36	252	21	129	145
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	1162	10	176	1555	13	74	39	274	23	140	158
RTOR Reduction (vph)	0	0	6	0	0	4	0	150	0	0	49	0
Lane Group Flow (vph)	74	1162	4	176	1555	9	74	163	0	23	249	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	4.0	33.8	33.8	7.7	37.5	37.5	3.2	20.9		1.6	19.3	
Effective Green, g (s)	4.0	33.8	33.8	7.7	37.5	37.5	3.2	20.9		1.6	19.3	
Actuated g/C Ratio	0.05	0.42	0.42	0.10	0.47	0.47	0.04	0.26		0.02	0.24	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	89	1495	669	330	1659	742	137	423		69	414	
v/s Ratio Prot	c0.04	0.33		0.05	c0.44		c0.02	0.10		0.01	c0.15	
v/s Ratio Perm			0.00			0.01						
v/c Ratio	0.83	0.78	0.01	0.53	0.94	0.01	0.54	0.39		0.33	0.60	
Uniform Delay, d1	37.7	19.9	13.4	34.4	20.1	11.4	37.7	24.3		38.7	26.9	
Progression Factor	1.00	1.00	1.00	1.37	0.52	0.24	1.00	1.00		1.00	1.00	
Incremental Delay, d2	45.4	2.6	0.0	1.0	7.0	0.0	4.3	2.6		2.8	6.4	
Delay (s)	83.1	22.5	13.4	48.1	17.6	2.7	42.0	26.9		41.5	33.3	
Level of Service	F	C	B	D	B	A	D	C		D	C	
Approach Delay (s)		26.0			20.5			29.8			33.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1610		3433	1783	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1610		3433	1783	
Volume (vph)	7	1264	135	110	1408	99	151	32	308	171	67	27
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	1374	147	120	1530	108	164	35	335	186	73	29
RTOR Reduction (vph)	0	0	75	0	0	26	0	91	0	0	19	0
Lane Group Flow (vph)	8	1374	72	120	1530	82	164	279	0	186	83	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	0.8	39.3	39.3	4.0	42.5	42.5	6.2	15.1		5.6	14.5	
Effective Green, g (s)	0.8	39.3	39.3	4.0	42.5	42.5	6.2	15.1		5.6	14.5	
Actuated g/C Ratio	0.01	0.49	0.49	0.05	0.53	0.53	0.08	0.19		0.07	0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	34	1739	778	172	1880	841	266	304		240	323	
v/s Ratio Prot	0.00	0.39		c0.03	c0.43		0.05	c0.17		c0.05	0.05	
v/s Ratio Perm			0.05			0.05						
v/c Ratio	0.24	0.79	0.09	0.70	0.81	0.10	0.62	0.92		0.78	0.26	
Uniform Delay, d1	39.3	16.9	10.8	37.4	15.5	9.3	35.7	31.8		36.6	28.1	
Progression Factor	1.27	0.32	0.03	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.5	1.8	0.0	11.7	2.8	0.1	4.2	34.4		14.4	1.9	
Delay (s)	52.2	7.2	0.4	49.1	18.3	9.3	40.0	66.2		51.0	30.0	
Level of Service	D	A	A	D	B	A	D	E		D	C	
Approach Delay (s)		6.8			19.8			58.2			43.6	
Approach LOS		A			B			E			D	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	261	1322	178	90	1155	268	159	286	147	487	397	281
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	284	1437	193	98	1255	291	173	311	160	529	432	305
RTOR Reduction (vph)	0	0	117	0	0	209	0	0	114	0	0	122
Lane Group Flow (vph)	284	1437	76	98	1255	82	173	311	46	529	432	183
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	23.6	23.6	3.2	19.8	19.8	6.9	15.2	15.2	12.0	20.3	20.3
Effective Green, g (s)	7.0	23.6	23.6	3.2	19.8	19.8	6.9	15.2	15.2	12.0	20.3	20.3
Actuated g/C Ratio	0.10	0.34	0.34	0.05	0.28	0.28	0.10	0.22	0.22	0.17	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1714	534	157	1438	448	338	768	344	589	1026	459
v/s Ratio Prot	c0.08	c0.28		0.03	0.25		0.05	0.09		c0.15	c0.12	
v/s Ratio Perm			0.05			0.05			0.03			0.12
v/c Ratio	0.83	0.84	0.14	0.62	0.87	0.18	0.51	0.40	0.13	0.90	0.42	0.40
Uniform Delay, d1	30.9	21.4	16.2	32.8	23.9	19.0	30.0	23.5	22.1	28.4	20.1	19.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.1	3.8	0.1	7.5	6.1	0.2	1.3	1.6	0.8	16.4	1.3	2.6
Delay (s)	46.0	25.2	16.3	40.3	30.0	19.2	31.3	25.1	22.9	44.8	21.4	22.5
Level of Service	D	C	B	D	C	B	C	C	C	D	C	C
Approach Delay (s)		27.4			28.7			26.2			31.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Volume (vph)	1	1962	1	2	1515	56	0	1	0	56	0	1
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	2133	1	2	1647	61	0	1	0	61	0	1
RTOR Reduction (vph)	0	0	0	0	0	19	0	0	0	0	0	1
Lane Group Flow (vph)	1	2133	1	2	1647	42	0	1	0	61	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	1.1	53.6	53.6	1.2	53.7	53.7		15.2		4.0		13.7
Effective Green, g (s)	1.1	53.6	53.6	1.2	53.7	53.7		15.2		4.0		13.7
Actuated g/C Ratio	0.01	0.60	0.60	0.01	0.60	0.60		0.17		0.04		0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	42	3028	943	46	3034	945		598		153		241
v/s Ratio Prot	0.00	c0.42		c0.00	0.32			c0.00		c0.02		
v/s Ratio Perm			0.00			0.03						0.00
v/c Ratio	0.02	0.70	0.00	0.04	0.54	0.04		0.00		0.40		0.00
Uniform Delay, d1	43.9	12.7	7.4	43.8	10.8	7.5		31.1		41.8		32.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2	0.2	0.8	0.0	0.4	0.2	0.0		0.0		1.7		0.0
Delay (s)	44.1	13.4	7.4	44.2	11.0	7.5		31.1		43.5		32.3
Level of Service	D	B	A	D	B	A		C		D		C
Approach Delay (s)		13.5			10.9			31.1			43.4	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3477		1770	3529		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.62	1.00	1.00	0.60	1.00	1.00
Satd. Flow (perm)	1770	3477		1770	3529		1150	1863	1583	1123	1863	1583
Volume (vph)	77	1732	228	370	1300	25	183	98	421	66	94	48
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	1883	248	402	1413	27	199	107	458	72	102	52
RTOR Reduction (vph)	0	8	0	0	1	0	0	0	223	0	0	44
Lane Group Flow (vph)	84	2123	0	402	1439	0	199	107	235	72	102	8
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	8.8	64.8		24.0	80.0		19.2	19.2	19.2	19.2	19.2	19.2
Effective Green, g (s)	8.8	64.8		24.0	80.0		19.2	19.2	19.2	19.2	19.2	19.2
Actuated g/C Ratio	0.07	0.54		0.20	0.67		0.16	0.16	0.16	0.16	0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	130	1878		354	2353		184	298	253	180	298	253
v/s Ratio Prot	0.05	c0.61		c0.23	0.41			0.06			0.05	
v/s Ratio Perm							c0.17		0.15	0.06		0.01
v/c Ratio	0.65	1.13		1.14	0.61		1.08	0.36	0.93	0.40	0.34	0.03
Uniform Delay, d1	54.1	27.6		48.0	11.3		50.4	44.9	49.7	45.2	44.8	42.6
Progression Factor	1.00	1.00		1.09	0.33		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.5	66.0		81.0	0.3		89.7	3.3	40.5	6.5	3.1	0.2
Delay (s)	64.6	93.6		133.6	4.0		140.1	48.3	90.2	51.7	47.9	42.8
Level of Service	E	F		F	A		F	D	F	D	D	D
Approach Delay (s)		92.5			32.3			97.3			48.0	
Approach LOS		F			C			F			D	

Intersection Summary			
HCM Average Control Delay	69.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	122	2256	103	228	1472	248	153	137	263	222	159	154
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	2452	112	248	1600	270	166	149	286	241	173	167
RTOR Reduction (vph)	0	0	8	0	0	82	0	0	81	0	0	97
Lane Group Flow (vph)	133	2452	104	248	1600	188	166	149	205	241	173	70
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.6	72.0	72.0	7.0	70.4	70.4	6.0	18.0	18.0	7.0	19.0	19.0
Effective Green, g (s)	8.6	72.0	72.0	7.0	70.4	70.4	6.0	18.0	18.0	7.0	19.0	19.0
Actuated g/C Ratio	0.07	0.60	0.60	0.06	0.59	0.59	0.05	0.15	0.15	0.06	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	246	2123	950	200	2076	929	172	531	237	200	560	251
v/s Ratio Prot	0.04	c0.69		c0.07	0.45		0.05	0.04		c0.07	0.05	
v/s Ratio Perm			0.07			0.12			c0.13			0.04
v/c Ratio	0.54	1.15	0.11	1.24	0.77	0.20	0.97	0.28	0.87	1.20	0.31	0.28
Uniform Delay, d1	53.8	24.0	10.3	56.5	18.7	11.6	56.9	45.3	49.8	56.5	44.7	44.5
Progression Factor	1.26	0.58	0.24	0.93	0.86	1.75	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	71.5	0.0	132.4	1.2	0.1	57.8	1.3	32.1	129.8	1.4	2.8
Delay (s)	68.7	85.5	2.4	185.1	17.2	20.4	114.7	46.6	81.9	186.3	46.1	47.2
Level of Service	E	F	A	F	B	C	F	D	F	F	D	D
Approach Delay (s)		81.2			37.3			82.2			104.6	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	68.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	63	2692	182	335	2015	130	95	77	306	250	103	50
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	2926	198	364	2190	141	103	84	333	272	112	54
RTOR Reduction (vph)	0	0	49	0	0	34	0	0	93	0	0	42
Lane Group Flow (vph)	68	2926	149	364	2190	107	103	84	240	272	112	12
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	59.8	59.8	11.0	66.8	66.8	6.9	17.2	17.2	16.0	26.3	26.3
Effective Green, g (s)	4.0	59.8	59.8	11.0	66.8	66.8	6.9	17.2	17.2	16.0	26.3	26.3
Actuated g/C Ratio	0.03	0.50	0.50	0.09	0.56	0.56	0.06	0.14	0.14	0.13	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2534	789	315	2831	881	197	507	227	236	1114	347
v/s Ratio Prot	0.02	c0.58		c0.11	0.43		0.03	0.02		c0.15	0.02	
v/s Ratio Perm			0.09			0.07			c0.15			0.01
v/c Ratio	0.60	1.15	0.19	1.16	0.77	0.12	0.52	0.17	1.06	1.15	0.10	0.03
Uniform Delay, d1	57.2	30.1	16.7	54.5	20.7	12.7	55.0	45.1	51.4	52.0	37.4	36.9
Progression Factor	1.01	0.84	0.99	1.08	0.50	0.39	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	70.1	0.0	82.2	0.5	0.0	2.5	0.7	75.1	106.0	0.2	0.2
Delay (s)	58.3	95.3	16.5	141.0	10.9	4.9	57.4	45.8	126.5	158.0	37.6	37.0
Level of Service	E	F	B	F	B	A	E	D	F	F	D	D
Approach Delay (s)		89.6			28.1			99.8			112.3	
Approach LOS		F			C			F			F	

Intersection Summary			
HCM Average Control Delay	67.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Volume (vph)	953	2201	110	247	1384	375	156	806	219	173	733	797
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1036	2392	120	268	1504	408	170	876	238	188	797	866
RTOR Reduction (vph)	0	0	35	0	0	79	0	0	123	0	0	1
Lane Group Flow (vph)	1036	2392	85	268	1504	329	170	876	115	188	797	865
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	36.0	61.0	61.0	10.0	35.0	35.0	6.0	24.0	24.0	9.0	27.0	63.0
Effective Green, g (s)	36.0	61.0	61.0	10.0	35.0	35.0	6.0	24.0	24.0	9.0	27.0	63.0
Actuated g/C Ratio	0.30	0.51	0.51	0.08	0.29	0.29	0.05	0.20	0.20	0.08	0.22	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1030	2585	805	286	1483	462	172	1017	317	257	796	884
v/s Ratio Prot	c0.30	0.47		0.08	c0.30		c0.05	0.17		0.05	c0.23	c0.29
v/s Ratio Perm			0.05			0.21			0.07			0.25
v/c Ratio	1.01	0.93	0.11	0.94	1.01	0.71	0.99	0.86	0.36	0.73	1.00	0.98
Uniform Delay, d1	42.0	27.4	15.3	54.7	42.5	38.0	57.0	46.4	41.4	54.3	46.5	27.8
Progression Factor	1.20	0.31	0.06	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.8	0.7	0.0	36.4	26.9	5.2	64.6	9.5	3.2	10.2	32.2	24.8
Delay (s)	60.3	9.1	0.9	91.1	69.4	43.2	121.5	55.9	44.6	64.6	78.7	52.6
Level of Service	E	A	A	F	E	D	F	E	D	E	E	D
Approach Delay (s)		23.8			67.2			62.5			65.1	
Approach LOS		C			E			E			E	

Intersection Summary			
HCM Average Control Delay	48.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	236	1994	140	109	1651	238	131	257	126	219	385	241
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	257	2167	152	118	1795	259	142	279	137	238	418	262
RTOR Reduction (vph)	0	0	64	0	0	89	0	0	84	0	0	87
Lane Group Flow (vph)	257	2167	88	118	1795	170	142	279	53	238	418	175
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	37.0	37.0	4.0	33.0	33.0	5.0	17.0	17.0	6.0	18.0	18.0
Effective Green, g (s)	8.0	37.0	37.0	4.0	33.0	33.0	5.0	17.0	17.0	6.0	18.0	18.0
Actuated g/C Ratio	0.10	0.46	0.46	0.05	0.41	0.41	0.06	0.21	0.21	0.08	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	2352	732	172	2098	653	215	1081	336	257	1144	356
v/s Ratio Prot	c0.07	c0.43		0.03	0.35		0.04	0.05		c0.07	0.08	
v/s Ratio Perm			0.06			0.11			0.03			c0.11
v/c Ratio	0.75	0.92	0.12	0.69	0.86	0.26	0.66	0.26	0.16	0.93	0.37	0.49
Uniform Delay, d1	35.0	20.1	12.2	37.4	21.3	15.5	36.7	26.2	25.7	36.8	26.2	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	6.6	0.1	10.8	3.7	0.2	7.4	0.6	1.0	36.5	0.9	4.8
Delay (s)	43.7	26.7	12.3	48.2	25.0	15.7	44.1	26.8	26.7	73.3	27.1	31.8
Level of Service	D	C	B	D	C	B	D	C	C	E	C	C
Approach Delay (s)		27.6			25.1			31.2			40.4	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	918	413	0	0	608	183
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	998	449	0	0	661	199
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1447		998	998
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1447		998	998
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	33
cM capacity (veh/h)			468		270	296

Direction, Lane #	EB 1	EB 2	NB 1
Volume Total	998	449	860
Volume Left	0	0	661
Volume Right	0	449	199
cSH	1700	1700	278
Volume to Capacity	0.59	0.26	3.09
Queue Length 95th (ft)	0	0	Err
Control Delay (s)	0.0	0.0	Err
Lane LOS			F
Approach Delay (s)	0.0		Err
Approach LOS			F

Intersection Summary			
Average Delay	3727.2		
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	0.97	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583		1770	3539	1583	3433	1820		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583		1770	3539	1583	3433	1820		1770	1863
Volume (vph)	2	199	8	10	333	171	131	149	62	11	2	57
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	216	9	11	362	186	142	162	67	12	2	62
RTOR Reduction (vph)	0	0	7	0	0	0	78	0	7	0	0	0
Lane Group Flow (vph)	2	216	2	0	373	186	64	162	72	0	2	62
Turn Type	Prot		Perm	Prot	Prot		Perm	Prot			Prot	
Protected Phases	5	2		1	1	6		7	4		3	8
Permitted Phases			2				6					
Actuated Green, G (s)	0.6	12.3	12.3		16.6	28.3	28.3	6.5	16.7		0.9	11.1
Effective Green, g (s)	0.6	12.3	12.3		16.6	28.3	28.3	6.5	16.7		0.9	11.1
Actuated g/C Ratio	0.01	0.20	0.20		0.27	0.45	0.45	0.10	0.27		0.01	0.18
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	17	696	312		470	1602	717	357	486		25	331
v/s Ratio Prot	0.00	c0.06			c0.21	0.05		c0.05	0.04		0.00	0.03
v/s Ratio Perm			0.00				0.04					
v/c Ratio	0.12	0.31	0.01		0.79	0.12	0.09	0.45	0.15		0.08	0.19
Uniform Delay, d1	30.7	21.5	20.2		21.4	9.9	9.8	26.3	17.5		30.4	21.9
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.1	0.3	0.0		8.9	0.0	0.1	0.9	0.1		1.4	0.3
Delay (s)	33.8	21.7	20.2		30.3	9.9	9.8	27.2	17.6		31.8	22.1
Level of Service	C	C	C		C	A	A	C	B		C	C
Approach Delay (s)		21.8				20.7			24.1			22.7
Approach LOS		C				C			C			C

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	62.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWR
Lane Configurations	
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Volume (vph)	397
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	432
RTOR Reduction (vph)	355
Lane Group Flow (vph)	77
Turn Type	Perm
Protected Phases	
Permitted Phases	8
Actuated Green, G (s)	11.1
Effective Green, g (s)	11.1
Actuated g/C Ratio	0.18
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	281
v/s Ratio Prot	
v/s Ratio Perm	c0.05
v/c Ratio	0.27
Uniform Delay, d1	22.2
Progression Factor	1.00
Incremental Delay, d2	0.5
Delay (s)	22.7
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	11	286	193	41	331	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	311	210	45	360	165

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	12	311	254	525
Volume Left (vph)	12	0	0	360
Volume Right (vph)	0	311	45	0
Hadj (s)	0.53	-0.67	-0.07	0.17
Departure Headway (s)	7.1	5.9	5.7	5.5
Degree Utilization, x	0.02	0.51	0.40	0.80
Capacity (veh/h)	474	560	596	642
Control Delay (s)	9.1	13.8	12.4	26.8
Approach Delay (s)	13.6		12.4	26.8
Approach LOS	B		B	D

Intersection Summary			
Delay	19.6		
HCM Level of Service	C		
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #23 Dante/Polk

Cycle (sec):	100	Critical Vol./Cap.(X):	0.527
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	12.9
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Polk					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0 1 0			1 0 1 0 1			1 0 0 1 0			1 0 1 0 1		
Volume Module:												
Base Vol:	52	243	23	66	198	28	54	104	70	40	65	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	52	243	23	66	198	28	54	104	70	40	65	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	52	243	23	66	198	28	54	104	70	40	65	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	57	264	25	72	215	30	59	113	76	43	71	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	264	25	72	215	30	59	113	76	43	71	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	57	264	25	72	215	30	59	113	76	43	71	85
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.91	0.09	1.00	1.00	1.00	1.00	0.60	0.40	1.00	1.00	1.00
Final Sat.:	501	502	47	467	504	551	469	314	211	433	462	508
Capacity Analysis Module:												
Vol/Sat:	0.11	0.53	0.53	0.15	0.43	0.06	0.13	0.36	0.36	0.10	0.15	0.17
Crit Moves:		****			****				****			****
Delay/Veh:	10.4	15.3	15.3	11.3	14.3	9.2	10.9	12.5	12.5	11.2	11.1	10.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.4	15.3	15.3	11.3	14.3	9.2	10.9	12.5	12.5	11.2	11.1	10.4
LOS by Move:	B	C	C	B	B	A	B	B	B	B	B	B
ApproachDel:		14.5			13.1			12.1			10.9	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		14.5			13.1			12.1			10.9	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.1	1.0	1.0	0.2	0.7	0.1	0.1	0.5	0.5	0.1	0.2	0.2

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	70	4	7	10	4	190	8	508	0	62	260	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	4	8	11	4	207	9	552	0	67	283	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			4			4						
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	828	999	295	993	1011	276	307			552		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	828	999	295	993	1011	276	307			552		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	56	98	99	94	98	71	99			93		
cM capacity (veh/h)	175	224	702	184	221	721	1251			1014		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	76	12	11	211	9	276	276	0	67	307
Volume Left	76	0	11	0	9	0	0	0	67	0
Volume Right	0	8	0	207	0	0	0	0	0	24
cSH	175	617	184	737	1251	1700	1700	1700	1014	1700
Volume to Capacity	0.44	0.02	0.06	0.29	0.01	0.16	0.16	0.00	0.07	0.18
Queue Length 95th (ft)	50	1	5	30	1	0	0	0	5	0
Control Delay (s)	40.6	14.2	25.8	12.2	7.9	0.0	0.0	0.0	8.8	0.0
Lane LOS	E	B	D	B	A				A	
Approach Delay (s)	37.0		12.8		0.1				1.6	
Approach LOS	E		B							

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	44	145	553	120	103	210
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	158	601	130	112	228

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	205	601	130	112	228
Volume Left (vph)	0	601	0	112	0
Volume Right (vph)	158	0	0	0	228
Hadj (s)	-0.43	0.53	0.03	0.53	-0.67
Departure Headway (s)	5.9	6.4	5.9	7.4	6.2
Degree Utilization, x	0.33	1.07	0.21	0.23	0.39
Capacity (veh/h)	593	553	593	475	566
Control Delay (s)	11.8	83.1	9.3	11.4	12.0
Approach Delay (s)	11.8	69.9		11.8	
Approach LOS	B	F		B	

Intersection Summary			
Delay	45.1		
HCM Level of Service	E		
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	69	207	14	4	138	229	6	1	4	509	6	194
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	75	225	15	4	150	249	7	1	4	553	7	211

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	188	128	154	249	12	771
Volume Left (vph)	75	0	4	0	7	553
Volume Right (vph)	0	15	0	249	4	211
Hadj (s)	0.23	-0.05	0.05	-0.67	-0.08	0.01
Departure Headway (s)	7.4	7.1	7.1	6.4	7.3	5.9
Degree Utilization, x	0.38	0.25	0.30	0.44	0.02	1.25
Capacity (veh/h)	479	497	496	554	459	609
Control Delay (s)	13.7	11.3	12.0	13.2	10.4	147.3
Approach Delay (s)	12.7		12.7		10.4	147.3
Approach LOS	B		B		B	F

Intersection Summary			
Delay	81.8		
HCM Level of Service	F		
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #30 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.437
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	12.1
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Bullard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	185	12	20	105	14	52	19	177	40	28	292	33
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	185	12	20	105	14	52	19	177	40	28	292	33
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	185	12	20	105	14	52	19	177	40	28	292	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	201	13	22	114	15	57	21	192	43	30	317	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	201	13	22	114	15	57	21	192	43	30	317	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	201	13	22	114	15	57	21	192	43	30	317	36
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	460	967	534	444	469	518	455	978	537	477	1031	568
Capacity Analysis Module:												
Vol/Sat:	0.44	0.01	0.04	0.26	0.03	0.11	0.05	0.20	0.08	0.06	0.31	0.06
Crit Moves:	****			****				****			****	
Delay/Veh:	15.4	9.8	9.2	12.7	10.0	9.8	10.5	11.2	9.4	10.3	12.1	9.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.4	9.8	9.2	12.7	10.0	9.8	10.5	11.2	9.4	10.3	12.1	9.1
LOS by Move:	C	A	A	B	B	A	B	B	A	B	B	A
ApproachDel:	14.5			11.6			10.9			11.7		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	14.5			11.6			10.9			11.7		
LOS by Appr:	B			B			B			B		
AllWayAvgQ:	0.7	0.0	0.0	0.3	0.0	0.1	0.0	0.2	0.1	0.1	0.4	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Volume (vph)	170	894	81	104	545	95	49	432	82	86	461	69
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	972	88	113	592	103	53	470	89	93	501	75
RTOR Reduction (vph)	0	0	40	0	15	0	0	0	46	0	0	43
Lane Group Flow (vph)	185	972	48	113	680	0	53	470	43	93	501	32
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.7	47.0	47.0	6.0	39.3		3.2	16.0	16.0	5.0	17.8	17.8
Effective Green, g (s)	13.7	47.0	47.0	6.0	39.3		3.2	16.0	16.0	5.0	17.8	17.8
Actuated g/C Ratio	0.15	0.52	0.52	0.07	0.44		0.04	0.18	0.18	0.06	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	269	973	827	118	1511		63	629	281	98	700	313
v/s Ratio Prot	0.10	c0.52		c0.06	0.20		0.03	0.13		c0.05	c0.14	
v/s Ratio Perm			0.03						0.03			0.02
v/c Ratio	0.69	1.00	0.06	0.96	0.45		0.84	0.75	0.15	0.95	0.72	0.10
Uniform Delay, d1	36.1	21.5	10.6	41.9	17.8		43.1	35.1	31.3	42.4	33.7	29.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.1	28.4	0.0	68.8	0.2		60.8	4.8	0.3	73.5	3.5	0.1
Delay (s)	43.2	49.9	10.6	110.7	18.0		104.0	39.9	31.5	115.9	37.2	29.7
Level of Service	D	D	B	F	B		F	D	C	F	D	C
Approach Delay (s)		46.1			31.0			44.2			47.3	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	42.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	61	29	11	4	18	71	8	347	6	49	186	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	66	32	12	4	20	77	9	377	7	53	202	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	790	710	202	731	732	377	230			384		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	790	710	202	731	732	377	230			384		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	91	99	99	94	88	99			95		
cM capacity (veh/h)	250	340	839	297	331	669	1337			1175		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	110	101	386	7	255	28
Volume Left	66	4	9	0	53	0
Volume Right	12	77	0	7	0	28
cSH	295	535	1337	1700	1175	1700
Volume to Capacity	0.37	0.19	0.01	0.00	0.05	0.02
Queue Length 95th (ft)	42	17	0	0	4	0
Control Delay (s)	24.3	13.3	0.2	0.0	2.0	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	24.3	13.3	0.2		1.8	
Approach LOS	C	B				

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Volume (vph)	903	487	571	846	76	268
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	982	529	621	920	83	291
RTOR Reduction (vph)	0	178	0	0	0	250
Lane Group Flow (vph)	982	351	621	920	83	41
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	55.0	55.0	36.0	95.0	17.0	17.0
Effective Green, g (s)	55.0	55.0	36.0	95.0	17.0	17.0
Actuated g/C Ratio	0.46	0.46	0.30	0.79	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	854	726	531	2802	251	224
v/s Ratio Prot	c0.53		c0.35	0.26	c0.05	
v/s Ratio Perm		0.22				0.03
v/c Ratio	1.15	0.48	1.17	0.33	0.33	0.18
Uniform Delay, d1	32.5	22.6	42.0	3.5	46.4	45.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	80.9	0.5	95.0	0.1	3.5	1.8
Delay (s)	113.4	23.1	137.0	3.6	49.9	47.2
Level of Service	F	C	F	A	D	D
Approach Delay (s)	81.8			57.4	47.8	
Approach LOS	F			E	D	

Intersection Summary			
HCM Average Control Delay	67.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Volume (vph)	119	1034	1157	270	145	254
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	1124	1258	293	158	276
RTOR Reduction (vph)	0	0	0	149	0	177
Lane Group Flow (vph)	129	1124	1258	144	158	99
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	6.4	44.8	34.4	34.4	17.2	17.2
Effective Green, g (s)	6.4	44.8	34.4	34.4	17.2	17.2
Actuated g/C Ratio	0.09	0.64	0.49	0.49	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	162	1192	1739	778	435	389
v/s Ratio Prot	0.07	c0.60	0.36		c0.09	
v/s Ratio Perm				0.09		0.06
v/c Ratio	0.80	0.94	0.72	0.19	0.36	0.25
Uniform Delay, d1	31.2	11.4	14.0	10.0	21.9	21.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.1	14.4	1.5	0.1	2.3	1.6
Delay (s)	54.3	25.9	15.6	10.1	24.2	22.8
Level of Service	D	C	B	B	C	C
Approach Delay (s)		28.8	14.5		23.3	
Approach LOS		C	B		C	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	36	1004	38	370	1135	172	229	380	31	17	301	526
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1091	41	402	1234	187	249	413	34	18	327	572
RTOR Reduction (vph)	0	0	21	0	0	83	0	0	24	0	0	301
Lane Group Flow (vph)	39	1091	20	402	1234	105	249	413	10	18	327	271
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	3.6	31.6	31.6	22.0	50.0	50.0	14.0	28.4	28.4	2.0	16.4	16.4
Effective Green, g (s)	3.6	31.6	31.6	22.0	50.0	50.0	14.0	28.4	28.4	2.0	16.4	16.4
Actuated g/C Ratio	0.04	0.32	0.32	0.22	0.50	0.50	0.14	0.28	0.28	0.02	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	64	1118	500	389	1770	792	248	1005	450	35	580	260
v/s Ratio Prot	0.02	c0.31		c0.23	0.35		c0.14	0.12		0.01	0.09	
v/s Ratio Perm			0.01			0.07			0.01			c0.17
v/c Ratio	0.61	0.98	0.04	1.03	0.70	0.13	1.00	0.41	0.02	0.51	0.56	1.04
Uniform Delay, d1	47.5	33.8	23.7	39.0	19.2	13.4	43.0	29.0	25.8	48.5	38.5	41.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.3	21.1	0.0	54.5	1.2	0.1	58.2	1.2	0.1	12.2	3.9	67.3
Delay (s)	62.8	54.9	23.7	93.5	20.4	13.5	101.2	30.3	25.9	60.7	42.4	109.1
Level of Service	E	D	C	F	C	B	F	C	C	E	D	F
Approach Delay (s)		54.1			35.8			55.4			84.4	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM Average Control Delay	53.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	103	1198	74	121	1142	94	171	230	64	236	689	145
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	1302	80	132	1241	102	186	250	70	257	749	158
RTOR Reduction (vph)	0	0	56	0	0	71	0	0	51	0	0	112
Lane Group Flow (vph)	112	1302	24	132	1241	31	186	250	19	257	749	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	18.0	18.0	3.2	18.0	18.0	5.3	16.5	16.5	6.3	17.5	17.5
Effective Green, g (s)	3.2	18.0	18.0	3.2	18.0	18.0	5.3	16.5	16.5	6.3	17.5	17.5
Actuated g/C Ratio	0.05	0.30	0.30	0.05	0.30	0.30	0.09	0.28	0.28	0.10	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1526	475	183	1526	475	303	973	435	360	1032	462
v/s Ratio Prot	0.03	c0.26		c0.04	0.24		0.05	0.07		c0.07	c0.21	
v/s Ratio Perm			0.02			0.02			0.01			0.03
v/c Ratio	0.61	0.85	0.05	0.72	0.81	0.06	0.61	0.26	0.04	0.71	0.73	0.10
Uniform Delay, d1	27.8	19.8	14.9	28.0	19.4	15.0	26.4	17.0	16.0	26.0	19.1	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	4.9	0.0	13.1	3.4	0.1	3.7	0.6	0.2	6.6	4.5	0.4
Delay (s)	33.7	24.6	15.0	41.1	22.9	15.0	30.0	17.6	16.2	32.6	23.5	15.9
Level of Service	C	C	B	D	C	B	C	B	B	C	C	B
Approach Delay (s)		24.8			24.0			22.0			24.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	247	1433	101	144	951	59	181	408	384	279	509	403
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	1558	110	157	1034	64	197	443	417	303	553	438
RTOR Reduction (vph)	0	0	63	0	0	46	0	0	110	0	0	110
Lane Group Flow (vph)	268	1558	47	157	1034	18	197	443	307	303	553	328
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	23.0	23.0	4.0	20.0	20.0	5.0	20.0	20.0	7.0	22.0	22.0
Effective Green, g (s)	7.0	23.0	23.0	4.0	20.0	20.0	5.0	20.0	20.0	7.0	22.0	22.0
Actuated g/C Ratio	0.10	0.33	0.33	0.06	0.29	0.29	0.07	0.29	0.29	0.10	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1671	520	196	1453	452	245	1011	452	343	1112	498
v/s Ratio Prot	c0.08	c0.31		0.05	0.20		0.06	0.13		c0.09	0.16	
v/s Ratio Perm			0.03			0.01			0.19			c0.21
v/c Ratio	0.78	0.93	0.09	0.80	0.71	0.04	0.80	0.44	0.68	0.88	0.50	0.66
Uniform Delay, d1	30.8	22.7	16.3	32.6	22.4	18.1	32.0	20.4	22.2	31.1	19.5	20.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.0	9.9	0.1	20.5	1.7	0.0	17.2	1.4	8.0	22.5	1.6	6.7
Delay (s)	41.8	32.7	16.3	53.1	24.1	18.1	49.2	21.8	30.1	53.6	21.1	27.5
Level of Service	D	C	B	D	C	B	D	C	C	D	C	C
Approach Delay (s)		33.0			27.4			30.2			30.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	122	1583	146	155	1070	67	201	538	266	148	419	158
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	1721	159	168	1163	73	218	585	289	161	455	172
RTOR Reduction (vph)	0	0	100	0	0	47	0	0	113	0	0	112
Lane Group Flow (vph)	133	1721	59	168	1163	26	218	585	176	161	455	60
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	23.8	23.8	4.0	23.8	23.8	5.0	17.0	17.0	5.0	17.0	17.0
Effective Green, g (s)	4.0	23.8	23.8	4.0	23.8	23.8	5.0	17.0	17.0	5.0	17.0	17.0
Actuated g/C Ratio	0.06	0.36	0.36	0.06	0.36	0.36	0.08	0.26	0.26	0.08	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	209	1839	573	209	1839	573	261	914	409	261	914	409
v/s Ratio Prot	0.04	c0.34		c0.05	0.23		c0.06	c0.17		0.05	0.13	
v/s Ratio Perm			0.04			0.02			0.11			0.04
v/c Ratio	0.64	0.94	0.10	0.80	0.63	0.05	0.84	0.64	0.43	0.62	0.50	0.15
Uniform Delay, d1	30.2	20.3	13.9	30.5	17.4	13.6	30.0	21.7	20.4	29.5	20.8	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	9.5	0.1	19.6	0.7	0.0	20.0	3.4	3.3	4.3	1.9	0.8
Delay (s)	36.4	29.8	14.0	50.1	18.1	13.7	50.0	25.1	23.7	33.8	22.7	19.6
Level of Service	D	C	B	D	B	B	D	C	C	C	C	B
Approach Delay (s)		29.0			21.7			29.7			24.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.89	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3166	
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1262		1583	1770	3166	
Volume (vph)	0	1472	35	137	501	0	20	0	414	168	32	76
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1600	38	149	545	0	22	0	450	183	35	83
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	148	0	63	0
Lane Group Flow (vph)	0	1600	26	149	545	0	22	0	302	183	55	0
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		33.8	33.8	7.0	44.8		17.0		17.0	17.0	17.0	
Effective Green, g (s)		33.8	33.8	7.0	44.8		17.0		17.0	17.0	17.0	
Actuated g/C Ratio		0.48	0.48	0.10	0.64		0.24		0.24	0.24	0.24	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1714	767	178	2271		307		386	431	771	
v/s Ratio Prot		c0.45		c0.08	0.15						0.02	
v/s Ratio Perm			0.02				0.02		c0.19	0.10		
v/c Ratio		0.93	0.03	0.84	0.24		0.07		0.78	0.42	0.07	
Uniform Delay, d1		16.9	9.4	30.8	5.3		20.3		24.7	22.3	20.3	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		9.8	0.0	27.5	0.1		0.1		9.9	3.0	0.2	
Delay (s)		26.8	9.5	58.3	5.3		20.4		34.6	25.3	20.5	
Level of Service		C	A	E	A		C		C	C	C	
Approach Delay (s)		26.4			16.7			33.9			23.4	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	69.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1479	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.56		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1479	1504	2013		1583
Volume (vph)	344	1103	0	0	537	295	262	15	487	179	0	210
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	374	1199	0	0	584	321	285	16	529	195	0	228
RTOR Reduction (vph)	0	0	0	0	0	184	0	80	80	0	0	187
Lane Group Flow (vph)	374	1199	0	0	584	137	243	228	199	195	0	41
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	20.9	41.5			16.6	16.6	19.0	19.0	19.0	16.0		16.0
Effective Green, g (s)	20.9	41.5			16.6	16.6	19.0	19.0	19.0	16.0		16.0
Actuated g/C Ratio	0.24	0.47			0.19	0.19	0.21	0.21	0.21	0.18		0.18
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	418	1660			664	297	361	318	323	364		286
v/s Ratio Prot	c0.21	0.34			c0.17		0.14	c0.15				
v/s Ratio Perm						0.09			0.13	c0.10		0.03
v/c Ratio	0.89	0.72			0.88	0.46	0.67	0.72	0.62	0.54		0.14
Uniform Delay, d1	32.7	18.9			35.0	32.0	31.9	32.3	31.4	32.9		30.5
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	20.9	1.6			12.7	1.1	9.6	13.0	8.5	5.6		1.1
Delay (s)	53.7	20.5			47.7	33.1	41.5	45.2	40.0	38.4		31.5
Level of Service	D	C			D	C	D	D	D	D		C
Approach Delay (s)		28.3			42.5			42.4			34.7	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	35.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	88.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	98	35	14	613	1526	146
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	38	15	666	1659	159

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	145	15	666	1659	159
Volume Left (vph)	107	0	0	1659	0
Volume Right (vph)	0	0	666	0	159
Hadj (s)	0.18	0.03	-0.67	0.53	-0.67
Departure Headway (s)	7.5	6.9	6.2	7.3	6.1
Degree Utilization, x	0.30	0.03	1.15	3.34	0.27
Capacity (veh/h)	474	510	584	500	586
Control Delay (s)	13.7	8.9	107.9	1074.4	10.1
Approach Delay (s)	13.7	105.7		981.5	
Approach LOS	B	F		F	

Intersection Summary			
Delay	702.7		
HCM Level of Service	F		
Intersection Capacity Utilization	105.1%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	49	74	0	709	1669	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	80	0	771	1814	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)					1086	
pX, platoon unblocked	0.49	0.49	0.49			
vC, conflicting volume	2585	1814	1814			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4222	2655	2655			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	0	100			
cM capacity (veh/h)	1	15	78			

Direction, Lane #	SE 1	SE 2	NE 1	SW 1
Volume Total	53	80	771	1814
Volume Left	53	0	0	0
Volume Right	0	80	0	0
cSH	1	15	1700	1700
Volume to Capacity	46.95	5.53	0.45	1.07
Queue Length 95th (ft)	Err	Err	0	0
Control Delay (s)	Err	Err	0.0	0.0
Lane LOS	F	F		
Approach Delay (s)	9999.0		0.0	0.0
Approach LOS	F			

Intersection Summary			
Average Delay	491.8		
Intersection Capacity Utilization	167.5%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	85	1171	765	0	0	1591
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	92	1273	832	0	0	1729
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						587
pX, platoon unblocked	0.53					
vC, conflicting volume	2561	832			832	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3935	832			832	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	0			100	
cM capacity (veh/h)	2	369			801	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	1365	832	1729
Volume Left	92	0	0
Volume Right	1273	0	0
cSH	26	1700	1700
Volume to Capacity	51.70	0.49	1.02
Queue Length 95th (ft)	Err	0	0
Control Delay (s)	Err	0.0	0.0
Lane LOS	F		
Approach Delay (s)	Err	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	3477.0		
Intersection Capacity Utilization	167.5%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Volume (vph)	582	200	127	82	193	278	153	1648	75	202	1371	494
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	633	217	138	89	210	302	166	1791	82	220	1490	537
RTOR Reduction (vph)	0	0	98	0	0	131	0	0	46	0	0	245
Lane Group Flow (vph)	633	217	40	89	210	171	166	1791	36	220	1490	292
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.0	25.9	25.9	4.0	13.9	13.9	6.8	30.6	30.6	13.5	37.3	37.3
Effective Green, g (s)	16.0	25.9	25.9	4.0	13.9	13.9	6.8	30.6	30.6	13.5	37.3	37.3
Actuated g/C Ratio	0.18	0.29	0.29	0.04	0.15	0.15	0.08	0.34	0.34	0.15	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	610	1018	456	153	547	244	259	1729	538	266	1467	656
v/s Ratio Prot	c0.18	0.06		0.03	0.06		0.05	0.35		c0.12	c0.42	
v/s Ratio Perm			0.03			c0.11			0.02			0.18
v/c Ratio	1.04	0.21	0.09	0.58	0.38	0.70	0.64	1.04	0.07	0.83	1.02	0.44
Uniform Delay, d1	37.0	24.3	23.4	42.2	34.2	36.1	40.4	29.7	20.1	37.1	26.4	18.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	46.6	0.1	0.1	5.5	0.5	8.8	5.3	31.5	0.2	18.6	27.5	2.2
Delay (s)	83.6	24.4	23.5	47.7	34.7	44.8	45.7	61.2	20.3	55.7	53.8	21.1
Level of Service	F	C	C	D	C	D	D	E	C	E	D	C
Approach Delay (s)		62.2			41.7			58.3			46.2	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM Average Control Delay	52.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #1 Weber/Herndon

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Average Delay (sec/veh): 8.9 Worst Case Level Of Service: F[142.0]

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Street Name:	Weber									Herndon							
Approach:	North Bound					South Bound				East Bound					West Bound		
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	1	0	0	0	0	1	0	0	3	0	1	1	0	2	1	0
Volume Module:																				
Base Vol:	0	0	315			0	0	0			0	2046	362			162	2122	0		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	0	0	315			0	0	0			0	2046	362			162	2122	0		
Added Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	0	0	315			0	0	0			0	2046	362			162	2122	0		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	0	0	342			0	0	0			0	2224	393			176	2307	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
FinalVolume:	0	0	342			0	0	0			0	2224	393			176	2307	0		
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	6.9			xxxxx	xxxx	6.9			xxxxx	xxxx	xxxxx			4.1	xxxx	xxxxx		
FollowUpTim:	xxxxx	xxxx	3.3			xxxxx	xxxx	3.3			xxxxx	xxxx	xxxxx			2.2	xxxx	xxxxx		
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	741			xxxx	xxxx	769			xxxx	xxxx	xxxxx			2617	xxxx	xxxxx		
Potent Cap.:	xxxx	xxxx	363			xxxx	xxxx	348			xxxx	xxxx	xxxxx			166	xxxx	xxxxx		
Move Cap.:	xxxx	xxxx	363			xxxx	xxxx	348			xxxx	xxxx	xxxxx			166	xxxx	xxxxx		
Volume/Cap:	xxxx	xxxx	0.94			xxxx	xxxx	0.00			xxxx	xxxx	xxxx			1.06	xxxx	xxxx		
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	10.1			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			8.8	xxxx	xxxxx		
Control Del:	xxxxx	xxxx	68.2			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			142.0	xxxx	xxxxx		
LOS by Move:	*	*	F			*	*	*			*	*	*			F	*	*		
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*			*	*	*			*	*	*			*	*	*		
ApproachDel:	68.2					xxxxxx					xxxxxx					xxxxxx				
ApproachLOS:	F					*					*					*				

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Note: Queue reported is the number of cars per lane.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	398	1689	274	306	1385	188	501	135	391	224	140	398
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	433	1836	298	333	1505	204	545	147	425	243	152	433
RTOR Reduction (vph)	0	0	70	0	0	59	0	0	204	0	0	191
Lane Group Flow (vph)	433	1836	228	333	1505	145	545	147	221	243	152	242
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	19.0	44.0	44.0	15.0	40.0	40.0	28.0	26.0	26.0	19.0	17.0	17.0
Effective Green, g (s)	19.0	44.0	44.0	15.0	40.0	40.0	28.0	26.0	26.0	19.0	17.0	17.0
Actuated g/C Ratio	0.16	0.37	0.37	0.12	0.33	0.33	0.23	0.22	0.22	0.16	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	280	1298	580	221	1180	528	413	404	343	280	264	224
v/s Ratio Prot	c0.24	c0.52		0.19	0.43		c0.31	0.08		0.14	0.08	
v/s Ratio Perm			0.14			0.09			0.14			c0.15
v/c Ratio	1.55	1.41	0.39	1.51	1.28	0.28	1.32	0.36	0.64	0.87	0.58	1.08
Uniform Delay, d1	50.5	38.0	28.1	52.5	40.0	29.4	46.0	40.0	42.8	49.3	48.1	51.5
Progression Factor	1.00	1.00	1.00	0.70	1.34	1.73	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	262.9	191.1	0.4	241.8	128.1	0.2	160.0	2.5	9.0	23.5	3.0	82.6
Delay (s)	313.4	229.1	28.6	278.7	181.6	50.8	206.0	42.5	51.7	72.8	51.2	134.1
Level of Service	F	F	C	F	F	D	F	D	D	E	D	F
Approach Delay (s)		220.1			184.4			125.8			100.9	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	177.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	112.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1718		3433	1770	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	1718		3433	1770	
Volume (vph)	135	1786	37	346	1466	27	169	203	217	18	113	56
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	1941	40	376	1593	29	184	221	236	20	123	61
RTOR Reduction (vph)	0	0	13	0	0	6	0	31	0	0	15	0
Lane Group Flow (vph)	147	1941	27	376	1593	23	184	426	0	20	169	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	12.4	60.0	60.0	12.0	59.6	59.6	10.4	30.4		1.6	21.6	
Effective Green, g (s)	12.4	60.0	60.0	12.0	59.6	59.6	10.4	30.4		1.6	21.6	
Actuated g/C Ratio	0.10	0.50	0.50	0.10	0.50	0.50	0.09	0.25		0.01	0.18	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	183	1770	792	343	1758	786	298	435		46	319	
v/s Ratio Prot	0.08	c0.55		c0.11	0.45		c0.05	c0.25		0.01	0.10	
v/s Ratio Perm			0.02			0.01						
v/c Ratio	0.80	1.10	0.03	1.10	0.91	0.03	0.62	0.98		0.43	0.53	
Uniform Delay, d1	52.6	30.0	15.3	54.0	27.6	15.4	52.9	44.5		58.8	44.6	
Progression Factor	0.63	1.60	2.16	0.83	1.40	1.23	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	44.5	0.0	64.5	4.0	0.0	3.8	38.1		6.5	6.2	
Delay (s)	35.6	92.6	32.9	109.3	42.7	19.0	56.7	82.6		65.2	50.8	
Level of Service	D	F	C	F	D	B	E	F		E	D	
Approach Delay (s)		87.6			54.9			75.1			52.2	
Approach LOS		F			D			E			D	

Intersection Summary			
HCM Average Control Delay	71.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1687		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1687		3433	1863	1583
Volume (vph)	9	1778	226	377	1615	202	212	154	262	262	210	27
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	1933	246	410	1755	220	230	167	285	285	228	29
RTOR Reduction (vph)	0	0	76	0	0	32	0	53	0	0	0	23
Lane Group Flow (vph)	10	1933	170	410	1755	188	230	399	0	285	228	6
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	59.2	59.2	12.0	70.4	70.4	10.0	23.8		9.0	22.8	22.8
Effective Green, g (s)	0.8	59.2	59.2	12.0	70.4	70.4	10.0	23.8		9.0	22.8	22.8
Actuated g/C Ratio	0.01	0.49	0.49	0.10	0.59	0.59	0.08	0.20		0.08	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	23	1746	781	343	2076	929	286	335		257	354	301
v/s Ratio Prot	0.00	c0.55		c0.12	0.50		0.07	c0.24		c0.08	0.12	
v/s Ratio Perm			0.11			0.12						0.00
v/c Ratio	0.43	1.11	0.22	1.20	0.85	0.20	0.80	1.19		1.11	0.64	0.02
Uniform Delay, d1	59.4	30.4	17.3	54.0	20.3	11.6	54.0	48.1		55.5	44.9	39.5
Progression Factor	0.99	1.16	1.66	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	49.1	0.0	112.9	3.4	0.1	15.0	111.8		88.5	8.7	0.1
Delay (s)	59.8	84.5	28.7	166.9	23.7	11.7	69.1	159.9		144.0	53.6	39.6
Level of Service	E	F	C	F	C	B	E	F		F	D	D
Approach Delay (s)		78.1			47.2			129.3			100.4	
Approach LOS		E			D			F			F	

Intersection Summary			
HCM Average Control Delay	73.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	480	1616	211	103	1629	523	201	550	65	571	496	348
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	522	1757	229	112	1771	568	218	598	71	621	539	378
RTOR Reduction (vph)	0	0	82	0	0	208	0	0	41	0	0	169
Lane Group Flow (vph)	522	1757	147	112	1771	360	218	598	30	621	539	209
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.0	44.0	44.0	5.0	34.0	34.0	8.0	17.0	17.0	18.0	27.0	27.0
Effective Green, g (s)	15.0	44.0	44.0	5.0	34.0	34.0	8.0	17.0	17.0	18.0	27.0	27.0
Actuated g/C Ratio	0.15	0.44	0.44	0.05	0.34	0.34	0.08	0.17	0.17	0.18	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	515	2237	697	172	1729	538	275	602	269	618	956	427
v/s Ratio Prot	c0.15	0.35		0.03	c0.35		0.06	c0.17		c0.18	0.15	
v/s Ratio Perm			0.09			0.23			0.02			0.13
v/c Ratio	1.01	0.79	0.21	0.65	1.02	0.67	0.79	0.99	0.11	1.00	0.56	0.49
Uniform Delay, d1	42.5	24.0	17.3	46.6	33.0	28.2	45.2	41.4	35.1	41.0	31.4	30.7
Progression Factor	1.00	1.00	1.00	0.77	1.62	2.51	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	43.1	1.9	0.2	5.6	23.8	2.0	14.4	35.1	0.8	37.4	2.4	4.0
Delay (s)	85.6	25.8	17.4	41.5	77.3	72.9	59.6	76.5	36.0	78.4	33.8	34.7
Level of Service	F	C	B	D	E	E	E	E	D	E	C	C
Approach Delay (s)		37.5			74.6			69.1			52.0	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM Average Control Delay	56.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Volume (vph)	4	2242	1	4	2259	66	2	0	4	66	1	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	2437	1	4	2455	72	2	0	4	72	1	16
RTOR Reduction (vph)	0	0	0	0	0	13	0	3	0	0	0	14
Lane Group Flow (vph)	4	2437	1	4	2455	59	2	1	0	72	1	2
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	1.2	64.0	64.0	1.2	64.0	64.0	5.6	14.8		4.0	13.2	13.2
Effective Green, g (s)	1.2	64.0	64.0	1.2	64.0	64.0	5.6	14.8		4.0	13.2	13.2
Actuated g/C Ratio	0.01	0.64	0.64	0.01	0.64	0.64	0.06	0.15		0.04	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	41	3254	1013	41	3254	1013	192	445		137	246	209
v/s Ratio Prot	c0.00	0.48		0.00	c0.48		0.00	0.00		c0.02	0.00	
v/s Ratio Perm			0.00			0.04						c0.00
v/c Ratio	0.10	0.75	0.00	0.10	0.75	0.06	0.01	0.00		0.53	0.00	0.01
Uniform Delay, d1	48.9	12.4	6.5	48.9	12.5	6.7	44.6	36.3		47.1	37.7	37.7
Progression Factor	0.80	2.16	1.94	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.5	0.0	1.0	1.0	0.0	0.0	0.0		3.6	0.0	0.0
Delay (s)	39.7	27.4	12.6	49.9	13.6	6.8	44.6	36.3		50.7	37.7	37.7
Level of Service	D	C	B	D	B	A	D	D		D	D	D
Approach Delay (s)		27.4			13.4			39.1			48.2	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3431		1770	3523		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.68	1.00	1.00	0.66	1.00	1.00
Satd. Flow (perm)	1770	3431		1770	3523		1266	1863	1583	1225	1863	1583
Volume (vph)	66	1810	465	484	1930	63	403	96	410	28	85	69
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	1967	505	526	2098	68	438	104	446	30	92	75
RTOR Reduction (vph)	0	19	0	0	2	0	0	0	201	0	0	56
Lane Group Flow (vph)	72	2453	0	526	2164	0	438	104	245	30	92	19
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	5.0	55.0		22.0	72.0		31.0	31.0	31.0	31.0	31.0	31.0
Effective Green, g (s)	5.0	55.0		22.0	72.0		31.0	31.0	31.0	31.0	31.0	31.0
Actuated g/C Ratio	0.04	0.46		0.18	0.60		0.26	0.26	0.26	0.26	0.26	0.26
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	74	1573		325	2114		327	481	409	316	481	409
v/s Ratio Prot	0.04	c0.72		c0.30	0.61			0.06			0.05	
v/s Ratio Perm							c0.35		0.15	0.02		0.01
v/c Ratio	0.97	1.56		1.62	1.02		1.34	0.22	0.60	0.09	0.19	0.05
Uniform Delay, d1	57.4	32.5		49.0	24.0		44.5	35.0	39.0	33.8	34.7	33.4
Progression Factor	1.00	1.00		1.09	0.69		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	94.8	254.9		279.6	13.3		172.0	1.0	6.4	0.6	0.9	0.2
Delay (s)	152.2	287.4		333.2	29.8		216.5	36.0	45.4	34.4	35.6	33.6
Level of Service	F	F		F	C		F	D	D	C	D	C
Approach Delay (s)		283.6			89.1			120.3			34.7	
Approach LOS		F			F			F			C	

Intersection Summary			
HCM Average Control Delay	169.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	130.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	231	2041	161	332	2233	390	220	248	254	278	233	351
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	251	2218	175	361	2427	424	239	270	276	302	253	382
RTOR Reduction (vph)	0	0	13	0	0	86	0	0	85	0	0	82
Lane Group Flow (vph)	251	2218	162	361	2427	338	239	270	191	302	253	300
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	65.0	65.0	11.0	69.0	69.0	7.0	18.0	18.0	10.0	21.0	21.0
Effective Green, g (s)	7.0	65.0	65.0	11.0	69.0	69.0	7.0	18.0	18.0	10.0	21.0	21.0
Actuated g/C Ratio	0.06	0.54	0.54	0.09	0.57	0.57	0.06	0.15	0.15	0.08	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	200	1917	857	315	2035	910	200	531	237	286	619	277
v/s Ratio Prot	0.07	0.63		c0.11	c0.69		0.07	0.08		c0.09	0.07	
v/s Ratio Perm			0.10			0.21			0.12			c0.19
v/c Ratio	1.25	1.16	0.19	1.15	1.19	0.37	1.20	0.51	0.81	1.06	0.41	1.08
Uniform Delay, d1	56.5	27.5	14.0	54.5	25.5	13.8	56.5	46.9	49.3	55.0	44.0	49.5
Progression Factor	1.40	0.55	0.20	0.98	0.74	1.25	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	118.6	71.3	0.0	69.5	87.2	0.0	126.1	3.5	24.6	68.7	2.0	78.4
Delay (s)	197.7	86.4	2.8	123.1	106.1	17.3	182.6	50.4	73.9	123.7	46.0	127.9
Level of Service	F	F	A	F	F	B	F	D	E	F	D	F
Approach Delay (s)		91.4			96.3			98.9			104.4	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	95.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	99.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	103	2313	183	305	2867	308	178	144	461	214	152	164
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	2514	199	332	3116	335	193	157	501	233	165	178
RTOR Reduction (vph)	0	0	59	0	0	58	0	0	94	0	0	54
Lane Group Flow (vph)	112	2514	141	332	3116	277	193	157	407	233	165	124
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	55.0	55.0	11.0	62.0	62.0	10.5	24.0	24.0	14.0	27.5	27.5
Effective Green, g (s)	4.0	55.0	55.0	11.0	62.0	62.0	10.5	24.0	24.0	14.0	27.5	27.5
Actuated g/C Ratio	0.03	0.46	0.46	0.09	0.52	0.52	0.09	0.20	0.20	0.12	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2331	726	315	2627	818	300	708	317	207	1165	363
v/s Ratio Prot	0.03	0.49		c0.10	c0.61		0.06	0.04		c0.13	0.03	
v/s Ratio Perm			0.09			0.17			c0.26			c0.08
v/c Ratio	0.98	1.08	0.19	1.05	1.19	0.34	0.64	0.22	1.29	1.13	0.14	0.34
Uniform Delay, d1	58.0	32.5	19.3	54.5	29.0	17.0	52.9	40.2	48.0	53.0	36.8	38.7
Progression Factor	0.98	0.86	1.10	1.16	0.40	0.32	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.0	36.3	0.0	31.9	84.2	0.0	4.7	0.7	150.2	100.4	0.3	2.6
Delay (s)	77.9	64.4	21.2	95.1	95.8	5.5	57.6	40.9	198.2	153.4	37.1	41.2
Level of Service	E	E	C	F	F	A	E	D	F	F	D	D
Approach Delay (s)		61.9			87.7			137.3			85.4	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	83.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Volume (vph)	978	1872	77	276	2241	217	180	896	180	309	838	1074
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1063	2035	84	300	2436	236	196	974	196	336	911	1167
RTOR Reduction (vph)	0	0	29	0	0	54	0	0	157	0	0	1
Lane Group Flow (vph)	1063	2035	55	300	2436	182	196	974	39	336	911	1166
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	30.0	59.2	59.2	12.8	42.0	42.0	6.0	23.0	23.0	9.0	26.0	56.0
Effective Green, g (s)	30.0	59.2	59.2	12.8	42.0	42.0	6.0	23.0	23.0	9.0	26.0	56.0
Actuated g/C Ratio	0.25	0.49	0.49	0.11	0.35	0.35	0.05	0.19	0.19	0.08	0.22	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	858	2509	781	366	1780	554	172	975	303	257	767	792
v/s Ratio Prot	0.31	0.40		0.09	c0.48		0.06	0.19		c0.10	0.26	c0.37
v/s Ratio Perm			0.03			0.11			0.02			0.37
v/c Ratio	1.24	0.81	0.07	0.82	1.37	0.33	1.14	1.00	0.13	1.31	1.19	1.47
Uniform Delay, d1	45.0	25.7	16.0	52.5	39.0	28.6	57.0	48.5	40.2	55.5	47.0	32.0
Progression Factor	1.34	0.36	0.12	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	108.5	0.2	0.0	13.4	169.5	0.3	111.1	28.6	0.9	163.5	97.4	219.6
Delay (s)	168.7	9.4	1.9	65.8	208.5	29.0	168.1	77.1	41.1	219.0	144.4	251.6
Level of Service	F	A	A	E	F	C	F	E	D	F	F	F
Approach Delay (s)		62.4			179.9			85.0			206.6	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	135.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	124.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	277	1881	360	179	1642	261	222	628	97	287	809	501
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	301	2045	391	195	1785	284	241	683	105	312	879	545
RTOR Reduction (vph)	0	0	142	0	0	87	0	0	81	0	0	89
Lane Group Flow (vph)	301	2045	249	195	1785	197	241	683	24	312	879	456
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	36.0	36.0	5.0	33.0	33.0	7.0	20.9	20.9	12.1	26.0	26.0
Effective Green, g (s)	8.0	36.0	36.0	5.0	33.0	33.0	7.0	20.9	20.9	12.1	26.0	26.0
Actuated g/C Ratio	0.09	0.40	0.40	0.06	0.37	0.37	0.08	0.23	0.23	0.13	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	305	2034	633	191	1865	580	267	1181	368	462	1469	457
v/s Ratio Prot	c0.09	c0.40		0.06	0.35		c0.07	0.13		0.09	0.17	
v/s Ratio Perm			0.16			0.12			0.02			c0.29
v/c Ratio	0.99	1.01	0.39	1.02	0.96	0.34	0.90	0.58	0.07	0.68	0.60	1.00
Uniform Delay, d1	40.9	27.0	19.2	42.5	27.8	20.6	41.2	30.6	26.9	37.1	27.5	32.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	47.5	21.3	0.4	70.7	12.2	0.4	30.8	2.1	0.3	3.9	1.8	41.6
Delay (s)	88.5	48.3	19.6	113.2	40.0	21.0	72.0	32.7	27.3	41.0	29.3	73.6
Level of Service	F	D	B	F	D	C	E	C	C	D	C	E
Approach Delay (s)		48.6			43.9			41.4			45.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	45.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	837	764	0	0	656	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	910	830	0	0	713	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1740		910	910
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1740		910	910
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	80
cM capacity (veh/h)			361		305	333

Direction, Lane #	EB 1	EB 2	NB 1
Volume Total	910	830	780
Volume Left	0	0	713
Volume Right	0	830	67
cSH	1700	1700	308
Volume to Capacity	0.54	0.49	2.53
Queue Length 95th (ft)	0	0	1591
Control Delay (s)	0.0	0.0	725.7
Lane LOS			F
Approach Delay (s)	0.0		725.7
Approach LOS			F

Intersection Summary			
Average Delay	224.7		
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	0.97	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583		1770	3539	1583	3433	1842		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583		1770	3539	1583	3433	1842		1770	1863
Volume (vph)	18	395	56	73	162	270	216	526	208	17	110	267
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	429	61	79	176	293	235	572	226	18	120	290
RTOR Reduction (vph)	0	0	48	0	0	0	153	0	4	0	0	0
Lane Group Flow (vph)	20	429	13	0	255	293	82	572	240	0	120	290
Turn Type	Prot		Perm	Prot	Prot		Perm	Prot			Prot	
Protected Phases	5	2		1	1	6		7	4		3	8
Permitted Phases			2				6					
Actuated Green, G (s)	1.5	15.7	15.7		11.1	25.3	25.3	14.7	21.3		8.4	15.0
Effective Green, g (s)	1.5	15.7	15.7		11.1	25.3	25.3	14.7	21.3		8.4	15.0
Actuated g/C Ratio	0.02	0.22	0.22		0.15	0.35	0.35	0.20	0.29		0.12	0.21
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	37	766	343		271	1235	552	696	541		205	385
v/s Ratio Prot	0.01	c0.12			c0.14	0.08		c0.17	0.13		0.07	c0.16
v/s Ratio Perm			0.01				0.05					
v/c Ratio	0.54	0.56	0.04		0.94	0.24	0.15	0.82	0.44		0.59	0.75
Uniform Delay, d1	35.2	25.3	22.4		30.4	16.8	16.2	27.6	20.8		30.4	27.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	15.1	0.9	0.0		38.9	0.1	0.1	7.7	0.6		4.2	8.1
Delay (s)	50.3	26.3	22.5		69.2	16.9	16.3	35.4	21.4		34.6	35.1
Level of Service	D	C	C		E	B	B	D	C		C	D
Approach Delay (s)		26.8				33.8			31.2			33.0
Approach LOS		C				C			C			C

Intersection Summary			
HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	72.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWR
Lane Configurations	
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Volume (vph)	77
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	84
RTOR Reduction (vph)	67
Lane Group Flow (vph)	17
Turn Type	Perm
Protected Phases	
Permitted Phases	8
Actuated Green, G (s)	15.0
Effective Green, g (s)	15.0
Actuated g/C Ratio	0.21
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	328
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.05
Uniform Delay, d1	23.1
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	23.1
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	52	455	76	27	586	81
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	57	495	83	29	637	88

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	57	495	112	725
Volume Left (vph)	57	0	0	637
Volume Right (vph)	0	495	29	0
Hadj (s)	0.53	-0.67	-0.12	0.21
Departure Headway (s)	7.1	6.0	6.5	6.0
Degree Utilization, x	0.11	0.82	0.20	1.20
Capacity (veh/h)	496	597	529	611
Control Delay (s)	9.8	29.0	11.1	126.4
Approach Delay (s)	27.0		11.1	126.4
Approach LOS	D		B	F

Intersection Summary			
Delay	77.6		
HCM Level of Service	F		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #23 Dante/Polk

Cycle (sec):	100	Critical Vol./Cap.(X):	0.697
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	16.6
Optimal Cycle:	0	Level Of Service:	C

Street Name:	Dante						Polk					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0	1 0	1	1 0 1	0	1	1 0 0	1	0	1 0 1	0	1
Volume Module:												
Base Vol:	53	304	24	118	343	52	35	51	12	12	66	96
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	304	24	118	343	52	35	51	12	12	66	96
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	304	24	118	343	52	35	51	12	12	66	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	58	330	26	128	373	57	38	55	13	13	72	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	58	330	26	128	373	57	38	55	13	13	72	104
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	58	330	26	128	373	57	38	55	13	13	72	104
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.93	0.07	1.00	1.00	1.00	1.00	0.81	0.19	1.00	1.00	1.00
Final Sat.:	509	520	41	491	535	584	422	369	87	409	436	477
Capacity Analysis Module:												
Vol/Sat:	0.11	0.64	0.64	0.26	0.70	0.10	0.09	0.15	0.15	0.03	0.16	0.22
Crit Moves:		****			****			****				****
Delay/Veh:	10.3	18.6	18.6	12.2	22.5	9.2	11.3	11.1	11.1	11.1	11.7	11.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.3	18.6	18.6	12.2	22.5	9.2	11.3	11.1	11.1	11.1	11.7	11.4
LOS by Move:	B	C	C	B	C	A	B	B	B	B	B	B
ApproachDel:		17.4			18.8			11.2			11.5	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		17.4			18.8			11.2			11.5	
LOS by Appr:		C			C			B			B	
AllWayAvgQ:	0.1	1.5	1.5	0.3	2.0	0.1	0.1	0.1	0.1	0.0	0.2	0.2

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	53	3	3	14	5	78	7	463	0	68	556	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	3	3	15	5	85	8	503	0	74	604	52
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			4			4						
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1090	1297	630	1274	1323	252	657			503		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1090	1297	630	1274	1323	252	657			503		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	58	98	99	87	96	89	99			93		
cM capacity (veh/h)	137	148	424	114	143	748	927			1057		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	58	7	15	90	8	252	252	0	74	657
Volume Left	58	0	15	0	8	0	0	0	74	0
Volume Right	0	3	0	85	0	0	0	0	0	52
cSH	137	297	114	796	927	1700	1700	1700	1057	1700
Volume to Capacity	0.42	0.02	0.13	0.11	0.01	0.15	0.15	0.00	0.07	0.39
Queue Length 95th (ft)	46	2	11	10	1	0	0	0	6	0
Control Delay (s)	49.0	21.7	41.4	11.7	8.9	0.0	0.0	0.0	8.7	0.0
Lane LOS	E	C	E	B	A				A	
Approach Delay (s)	46.2		16.0		0.1				0.9	
Approach LOS	E		C							

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	13	40	397	25	105	754
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	43	432	27	114	820

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	58	432	27	114	820
Volume Left (vph)	0	432	0	114	0
Volume Right (vph)	43	0	0	0	820
Hadj (s)	-0.42	0.53	0.03	0.53	-0.67
Departure Headway (s)	6.7	7.2	6.7	6.8	5.6
Degree Utilization, x	0.11	0.86	0.05	0.22	1.28
Capacity (veh/h)	517	432	528	513	649
Control Delay (s)	10.6	38.5	8.8	10.5	155.5
Approach Delay (s)	10.6	36.7		137.8	
Approach LOS	B	E		F	

Intersection Summary			
Delay	100.8		
HCM Level of Service	F		
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	162	235	26	8	256	640	37	19	9	289	14	118
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	176	255	28	9	278	696	40	21	10	314	15	128

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	304	156	287	696	71	458
Volume Left (vph)	176	0	9	0	40	314
Volume Right (vph)	0	28	0	696	10	128
Hadj (s)	0.32	-0.09	0.05	-0.67	0.06	0.00
Departure Headway (s)	8.2	7.7	7.7	6.9	8.7	7.0
Degree Utilization, x	0.69	0.34	0.61	1.34	0.17	0.89
Capacity (veh/h)	426	453	465	519	387	504
Control Delay (s)	26.2	13.4	20.7	183.9	13.5	44.6
Approach Delay (s)	21.9		136.2		13.5	44.6
Approach LOS	C		F		B	E

Intersection Summary			
Delay	83.9		
HCM Level of Service	F		
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #30 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.485
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	12.7
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Dante						Bullard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	62	7	10	41	15	30	112	498	62	62	298	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	62	7	10	41	15	30	112	498	62	62	298	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	62	7	10	41	15	30	112	498	62	62	298	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	67	8	11	45	16	33	122	541	67	67	324	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	8	11	45	16	33	122	541	67	67	324	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	67	8	11	45	16	33	122	541	67	67	324	58
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	395	828	451	395	416	453	514	1116	617	475	1024	563
Capacity Analysis Module:												
Vol/Sat:	0.17	0.01	0.02	0.11	0.04	0.07	0.24	0.49	0.11	0.14	0.32	0.10
Crit Moves:	****			****				****			****	
Delay/Veh:	12.6	10.6	10.0	12.0	10.8	10.3	11.5	14.6	9.0	11.1	12.4	9.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.6	10.6	10.0	12.0	10.8	10.3	11.5	14.6	9.0	11.1	12.4	9.4
LOS by Move:	B	B	B	B	B	B	B	B	A	B	B	A
ApproachDel:	12.1			11.2			13.5			11.8		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	12.1			11.2			13.5			11.8		
LOS by Appr:	B			B			B			B		
AllWayAvgQ:	0.2	0.0	0.0	0.1	0.0	0.1	0.3	0.9	0.1	0.2	0.4	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3500		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3500		1770	3539	1583	1770	3539	1583
Volume (vph)	193	736	80	165	903	72	178	839	163	83	826	124
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	210	800	87	179	982	78	193	912	177	90	898	135
RTOR Reduction (vph)	0	0	39	0	5	0	0	0	39	0	0	36
Lane Group Flow (vph)	210	800	48	179	1055	0	193	912	139	90	898	99
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	15.8	44.0	44.0	11.0	39.2		11.0	33.0	33.0	6.0	28.0	28.0
Effective Green, g (s)	15.8	44.0	44.0	11.0	39.2		11.0	33.0	33.0	6.0	28.0	28.0
Actuated g/C Ratio	0.14	0.40	0.40	0.10	0.36		0.10	0.30	0.30	0.05	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	254	745	633	177	1247		177	1062	475	97	901	403
v/s Ratio Prot	c0.12	c0.43		c0.10	0.30		c0.11	0.26		0.05	c0.25	
v/s Ratio Perm			0.03						0.09			0.06
v/c Ratio	0.83	1.07	0.08	1.01	0.85		1.09	0.86	0.29	0.93	1.00	0.25
Uniform Delay, d1	45.8	33.0	20.4	49.5	32.6		49.5	36.3	29.5	51.8	41.0	32.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.3	54.6	0.1	70.6	5.5		93.8	7.0	0.3	67.5	29.0	0.3
Delay (s)	65.1	87.6	20.5	120.1	38.1		143.3	43.4	29.9	119.3	69.9	32.9
Level of Service	E	F	C	F	D		F	D	C	F	E	C
Approach Delay (s)		78.0			49.9			56.5			69.4	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM Average Control Delay	62.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	41	25	6	4	60	131	12	287	2	104	309	59
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	27	7	4	65	142	13	312	2	113	336	64
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1075	902	336	920	964	312	400			314		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1075	902	336	920	964	312	400			314		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	61	89	99	98	72	80	99			91		
cM capacity (veh/h)	115	249	706	211	229	728	1159			1246		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	212	325	2	449	64
Volume Left	45	4	13	0	113	0
Volume Right	7	142	0	2	0	64
cSH	154	424	1159	1700	1246	1700
Volume to Capacity	0.51	0.50	0.01	0.00	0.09	0.04
Queue Length 95th (ft)	61	68	1	0	7	0
Control Delay (s)	50.1	21.7	0.4	0.0	2.8	0.0
Lane LOS	F	C	A		A	
Approach Delay (s)	50.1	21.7	0.4		2.4	
Approach LOS	F	C				

Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Volume (vph)	825	275	506	1501	120	293
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	897	299	550	1632	130	318
RTOR Reduction (vph)	0	110	0	0	0	273
Lane Group Flow (vph)	897	189	550	1632	130	45
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	55.0	55.0	36.0	95.0	17.0	17.0
Effective Green, g (s)	55.0	55.0	36.0	95.0	17.0	17.0
Actuated g/C Ratio	0.46	0.46	0.30	0.79	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	854	726	531	2802	251	224
v/s Ratio Prot	c0.48		c0.31	0.46	c0.07	
v/s Ratio Perm		0.12				0.03
v/c Ratio	1.05	0.26	1.04	0.58	0.52	0.20
Uniform Delay, d1	32.5	20.0	42.0	4.8	47.7	45.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	44.9	0.2	48.6	0.3	7.4	2.0
Delay (s)	77.4	20.2	90.6	5.1	55.2	47.5
Level of Service	E	C	F	A	E	D
Approach Delay (s)	63.1			26.7	49.7	
Approach LOS	E			C	D	

Intersection Summary			
HCM Average Control Delay	40.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Volume (vph)	80	1085	1655	380	329	323
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	1179	1799	413	358	351
RTOR Reduction (vph)	0	0	0	182	0	110
Lane Group Flow (vph)	87	1179	1799	231	358	241
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	5.6	60.0	50.4	50.4	22.0	22.0
Effective Green, g (s)	5.6	60.0	50.4	50.4	22.0	22.0
Actuated g/C Ratio	0.06	0.67	0.56	0.56	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	110	1242	1982	886	433	387
v/s Ratio Prot	0.05	c0.63	0.51		c0.20	
v/s Ratio Perm				0.15		0.15
v/c Ratio	0.79	0.95	0.91	0.26	0.83	0.62
Uniform Delay, d1	41.6	13.6	17.7	10.2	32.2	30.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	31.0	14.9	6.5	0.2	16.4	7.4
Delay (s)	72.6	28.5	24.2	10.4	48.6	37.7
Level of Service	E	C	C	B	D	D
Approach Delay (s)		31.5	21.6		43.2	
Approach LOS		C	C		D	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	50	1312	52	434	1761	297	224	305	54	46	622	892
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	1426	57	472	1914	323	243	332	59	50	676	970
RTOR Reduction (vph)	0	0	18	0	0	83	0	0	38	0	0	217
Lane Group Flow (vph)	54	1426	39	472	1914	240	243	332	21	50	676	753
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	4.0	35.0	35.0	21.0	52.0	52.0	11.0	41.7	41.7	6.3	37.0	37.0
Effective Green, g (s)	4.0	35.0	35.0	21.0	52.0	52.0	11.0	41.7	41.7	6.3	37.0	37.0
Actuated g/C Ratio	0.03	0.29	0.29	0.18	0.43	0.43	0.09	0.35	0.35	0.05	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	59	1032	462	310	1534	686	162	1230	550	93	1091	488
v/s Ratio Prot	0.03	c0.40		c0.27	0.54		c0.14	0.09		0.03	0.19	
v/s Ratio Perm			0.02			0.15			0.01			c0.48
v/c Ratio	0.92	1.38	0.08	1.52	1.25	0.35	1.50	0.27	0.04	0.54	0.62	1.54
Uniform Delay, d1	57.8	42.5	30.9	49.5	34.0	22.7	54.5	28.2	25.9	55.4	35.5	41.5
Progression Factor	1.00	1.00	1.00	0.61	0.97	1.03	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	86.4	177.9	0.1	243.2	114.3	0.2	254.5	0.5	0.1	5.9	2.6	254.3
Delay (s)	144.2	220.4	30.9	273.2	147.4	23.6	309.0	28.7	26.0	61.3	38.1	295.8
Level of Service	F	F	C	F	F	C	F	C	C	E	D	F
Approach Delay (s)		210.7			154.5			135.9			186.2	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	174.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	113.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	290	1710	152	205	1831	256	277	781	151	467	454	170
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	1859	165	223	1990	278	301	849	164	508	493	185
RTOR Reduction (vph)	0	0	45	0	0	67	0	0	55	0	0	100
Lane Group Flow (vph)	315	1859	120	223	1990	211	301	849	109	508	493	85
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.0	49.0	49.0	8.0	46.0	46.0	14.6	30.0	30.0	17.0	32.4	32.4
Effective Green, g (s)	11.0	49.0	49.0	8.0	46.0	46.0	14.6	30.0	30.0	17.0	32.4	32.4
Actuated g/C Ratio	0.09	0.41	0.41	0.07	0.38	0.38	0.12	0.25	0.25	0.14	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	315	2076	646	229	1949	607	418	885	396	486	956	427
v/s Ratio Prot	c0.09	c0.37		0.06	c0.39		0.09	c0.24		c0.15	0.14	
v/s Ratio Perm			0.08			0.13			0.07			0.05
v/c Ratio	1.00	0.90	0.19	0.97	1.02	0.35	0.72	0.96	0.28	1.05	0.52	0.20
Uniform Delay, d1	54.5	33.1	22.7	55.9	37.0	26.3	50.7	44.4	36.3	51.5	37.1	33.8
Progression Factor	1.11	0.73	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.2	0.5	0.0	51.7	25.9	0.3	6.0	21.9	1.7	53.1	2.0	1.0
Delay (s)	75.9	24.7	18.0	107.6	62.9	26.7	56.7	66.3	38.0	104.6	39.1	34.8
Level of Service	E	C	B	F	E	C	E	E	D	F	D	C
Approach Delay (s)		31.1			62.8			60.5			66.5	
Approach LOS		C			E			E			E	

Intersection Summary			
HCM Average Control Delay	52.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	91.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	573	1476	222	310	1515	172	432	674	189	220	455	425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	623	1604	241	337	1647	187	470	733	205	239	495	462
RTOR Reduction (vph)	0	0	105	0	0	89	0	0	110	0	0	218
Lane Group Flow (vph)	623	1604	136	337	1647	98	470	733	95	239	495	244
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.0	34.1	34.1	10.9	29.0	29.0	12.0	22.0	22.0	7.0	17.0	17.0
Effective Green, g (s)	16.0	34.1	34.1	10.9	29.0	29.0	12.0	22.0	22.0	7.0	17.0	17.0
Actuated g/C Ratio	0.18	0.38	0.38	0.12	0.32	0.32	0.13	0.24	0.24	0.08	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	610	1927	600	416	1639	510	458	865	387	267	668	299
v/s Ratio Prot	c0.18	0.32		0.10	c0.32		c0.14	c0.21		0.07	0.14	
v/s Ratio Perm			0.09			0.06			0.06			0.15
v/c Ratio	1.02	0.83	0.23	0.81	1.00	0.19	1.03	0.85	0.24	0.90	0.74	0.82
Uniform Delay, d1	37.0	25.4	19.0	38.5	30.5	22.0	39.0	32.4	27.3	41.1	34.4	35.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	41.9	3.2	0.2	11.3	23.4	0.2	48.9	10.1	1.5	29.3	7.3	21.2
Delay (s)	78.9	28.6	19.2	49.9	53.9	22.2	87.9	42.5	28.8	70.4	41.7	56.2
Level of Service	E	C	B	D	D	C	F	D	C	E	D	E
Approach Delay (s)		40.4			50.6			55.7			53.0	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	48.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	224	1423	127	264	1581	117	233	357	130	134	492	175
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	243	1547	138	287	1718	127	253	388	141	146	535	190
RTOR Reduction (vph)	0	0	89	0	0	63	0	0	103	0	0	135
Lane Group Flow (vph)	243	1547	49	287	1718	64	253	388	38	146	535	55
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	25.0	25.0	6.0	25.0	25.0	6.0	19.0	19.0	4.8	17.8	17.8
Effective Green, g (s)	6.0	25.0	25.0	6.0	25.0	25.0	6.0	19.0	19.0	4.8	17.8	17.8
Actuated g/C Ratio	0.08	0.35	0.35	0.08	0.35	0.35	0.08	0.27	0.27	0.07	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	291	1796	559	291	1796	559	291	950	425	233	890	398
v/s Ratio Prot	0.07	0.30		c0.08	c0.34		c0.07	0.11		0.04	c0.15	
v/s Ratio Perm			0.03			0.04			0.02			0.03
v/c Ratio	0.84	0.86	0.09	0.99	0.96	0.11	0.87	0.41	0.09	0.63	0.60	0.14
Uniform Delay, d1	31.9	21.3	15.3	32.4	22.4	15.4	32.0	21.3	19.4	32.1	23.4	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.3	4.5	0.1	48.5	12.4	0.1	23.0	1.3	0.4	5.2	3.0	0.7
Delay (s)	50.2	25.8	15.4	80.9	34.8	15.5	55.0	22.6	19.8	37.3	26.4	21.3
Level of Service	D	C	B	F	C	B	D	C	B	D	C	C
Approach Delay (s)		28.1			39.8			32.6			27.1	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	33.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.93	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3303	
Flt Permitted		1.00	1.00	0.95	1.00		0.58		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1074		1583	1770	3303	
Volume (vph)	0	1049	65	382	1202	0	51	0	515	176	126	101
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1140	71	415	1307	0	55	0	560	191	137	110
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	374	0	64	0
Lane Group Flow (vph)	0	1140	44	415	1307	0	55	0	186	191	183	0
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		27.3	27.3	20.6	51.9		18.0		18.0	18.0	18.0	
Effective Green, g (s)		27.3	27.3	20.6	51.9		18.0		18.0	18.0	18.0	
Actuated g/C Ratio		0.35	0.35	0.26	0.67		0.23		0.23	0.23	0.23	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1240	555	468	2358		248		366	409	763	
v/s Ratio Prot		c0.32		c0.23	0.37						0.06	
v/s Ratio Perm			0.03				0.05		c0.12	0.11		
v/c Ratio		0.92	0.08	0.89	0.55		0.22		0.51	0.47	0.24	
Uniform Delay, d1		24.2	16.9	27.5	6.9		24.3		26.1	25.8	24.4	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		10.9	0.1	18.0	0.3		0.5		1.1	3.8	0.7	
Delay (s)		35.1	17.0	45.5	7.2		24.7		27.2	29.6	25.1	
Level of Service		D	B	D	A		C		C	C	C	
Approach Delay (s)		34.1			16.4			27.0			27.1	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	24.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	77.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.89	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1492	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.43		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1492	1504	1558		1583
Volume (vph)	240	1116	0	0	930	698	582	21	841	201	0	374
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	1213	0	0	1011	759	633	23	914	218	0	407
RTOR Reduction (vph)	0	0	0	0	0	188	0	36	36	0	0	192
Lane Group Flow (vph)	261	1213	0	0	1011	571	506	525	467	218	0	215
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	15.0	54.0			35.0	35.0	38.0	38.0	38.0	16.0		16.0
Effective Green, g (s)	15.0	54.0			35.0	35.0	38.0	38.0	38.0	16.0		16.0
Actuated g/C Ratio	0.12	0.45			0.29	0.29	0.32	0.32	0.32	0.13		0.13
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	221	1593			1032	462	532	472	476	208		211
v/s Ratio Prot	c0.15	0.34			0.29		0.30	c0.35				
v/s Ratio Perm						c0.36			0.31	c0.14		0.14
v/c Ratio	1.18	0.76			0.98	1.24	0.95	1.11	0.98	1.05		1.02
Uniform Delay, d1	52.5	27.6			42.1	42.5	40.1	41.0	40.7	52.0		52.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	118.1	2.2			22.9	123.3	28.6	76.1	37.0	75.6		66.4
Delay (s)	170.6	29.8			65.0	165.8	68.7	117.1	77.7	127.6		118.4
Level of Service	F	C			E	F	E	F	E	F		F
Approach Delay (s)		54.7			108.2			88.9			121.6	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	89.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

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                        Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
**********************************************************************************
Intersection #1 Weber/Herndon
**********************************************************************************
Average Delay (sec/veh):      1.1       Worst Case Level Of Service: E[ 48.3]
**********************************************************************************
Street Name:              Weber                             Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  1    0  0  3  0  1    1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0   234     0    0     0     0 1633  1251    19 2644     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0   234     0    0     0     0 1633  1251    19 2644     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0   234     0    0     0     0 1633  1251    19 2644     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0   254     0    0     0     0 1775  1360    21 2874     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0   254     0    0     0     0 1775  1360    21 2874     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   592  xxxx xxxx   958  xxxx xxxx xxxxx  3135 xxxx xxxxx
Potent Cap.: xxxx xxxx   455  xxxx xxxx   261  xxxx xxxx xxxxx   103 xxxx xxxxx
Move Cap.:   xxxx xxxx   455  xxxx xxxx   261  xxxx xxxx xxxxx   103 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.56  xxxx xxxx  0.00  xxxx xxxx  xxxx  0.20 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   3.4  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.7 xxxx xxxxx
Control Del:xxxxx xxxx  22.5 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  48.3 xxxx xxxxx
LOS by Move:   *    *     C     *    *     *     *    *     *     E    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      22.5           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        C                *                *                *
**********************************************************************************
Note: Queue reported is the number of cars per lane.
**********************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	408	1428	156	788	1252	247	1171	316	629	243	214	346
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	443	1552	170	857	1361	268	1273	343	684	264	233	376
RTOR Reduction (vph)	0	0	47	0	0	85	0	0	215	0	0	145
Lane Group Flow (vph)	443	1552	123	857	1361	183	1273	343	469	264	233	232
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	12.0	27.0	27.0	21.0	36.0	36.0	38.0	38.0	38.0	18.0	18.0	18.0
Effective Green, g (s)	12.0	27.0	27.0	21.0	36.0	36.0	38.0	38.0	38.0	18.0	18.0	18.0
Actuated g/C Ratio	0.10	0.22	0.22	0.18	0.30	0.30	0.32	0.32	0.32	0.15	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	177	796	356	310	1062	475	561	590	501	266	279	237
v/s Ratio Prot	0.25	c0.44		c0.48	0.38		c0.72	0.18		0.15	0.13	
v/s Ratio Perm			0.08			0.12			c0.30			0.15
v/c Ratio	2.50	1.95	0.34	2.76	1.28	0.38	2.27	0.58	0.94	0.99	0.84	0.98
Uniform Delay, d1	54.0	46.5	39.1	49.5	42.0	33.2	41.0	34.3	39.8	50.9	49.6	50.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	692.8	432.0	0.6	803.0	134.0	0.5	576.8	4.1	27.0	52.9	19.0	51.4
Delay (s)	746.8	478.5	39.7	852.5	176.0	33.8	617.8	38.5	66.8	103.8	68.5	102.2
Level of Service	F	F	D	F	F	C	F	D	E	F	E	F
Approach Delay (s)		498.9			393.9			367.6			93.7	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	381.7	HCM Level of Service	F
HCM Volume to Capacity ratio	2.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	172.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1607		3433	1599	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	1607		3433	1599	
Volume (vph)	80	1946	39	66	1981	54	33	10	110	51	5	78
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	2115	42	72	2153	59	36	11	120	55	5	85
RTOR Reduction (vph)	0	0	14	0	0	11	0	70	0	0	71	0
Lane Group Flow (vph)	87	2115	28	72	2153	48	36	61	0	55	19	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	5.0	61.6	61.6	3.2	59.8	59.8	2.4	16.0		3.2	16.8	
Effective Green, g (s)	5.0	61.6	61.6	3.2	59.8	59.8	2.4	16.0		3.2	16.8	
Actuated g/C Ratio	0.05	0.62	0.62	0.03	0.60	0.60	0.02	0.16		0.03	0.17	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	89	2180	975	110	2116	947	82	257		110	269	
v/s Ratio Prot	c0.05	0.60		0.02	c0.61		0.01	c0.04		c0.02	0.01	
v/s Ratio Perm			0.02			0.03						
v/c Ratio	0.98	0.97	0.03	0.65	1.02	0.05	0.44	0.24		0.50	0.07	
Uniform Delay, d1	47.4	18.3	7.5	47.9	20.1	8.3	48.1	36.7		47.6	35.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	87.1	13.0	0.0	13.1	24.1	0.0	3.7	2.2		3.5	0.5	
Delay (s)	134.6	31.3	7.5	61.0	44.2	8.4	51.9	38.9		51.2	35.5	
Level of Service	F	C	A	E	D	A	D	D		D	D	
Approach Delay (s)		34.9			43.8			41.7			41.5	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	39.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	0.97	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583		1770	3539	1583	3433	1843		1770	1863
Flt Permitted	0.95	1.00	1.00		0.80	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583		1490	3539	1583	3433	1843		1770	1863
Volume (vph)	8	560	7	11	78	451	365	1446	135	10	12	82
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	609	8	12	85	490	397	1572	147	11	13	89
RTOR Reduction (vph)	0	0	6	0	0	0	288	0	2	0	0	0
Lane Group Flow (vph)	9	609	2	0	97	490	109	1572	156	0	13	89
Turn Type	Prot		Perm	custom	Prot		Perm	Prot			Prot	
Protected Phases	5	2			1	6		7	4		3	8
Permitted Phases			2	1			6					
Actuated Green, G (s)	0.7	19.6	19.6		5.0	23.9	23.9	36.3	45.1		1.4	10.2
Effective Green, g (s)	0.7	19.6	19.6		5.0	23.9	23.9	36.3	45.1		1.4	10.2
Actuated g/C Ratio	0.01	0.23	0.23		0.06	0.27	0.27	0.42	0.52		0.02	0.12
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	14	796	356		86	971	434	1431	954		28	218
v/s Ratio Prot	0.01	c0.17				0.14		c0.46	0.08		0.01	c0.05
v/s Ratio Perm			0.00		c0.07		0.07					
v/c Ratio	0.64	0.77	0.01		1.13	0.50	0.25	1.10	0.16		0.46	0.41
Uniform Delay, d1	43.1	31.6	26.2		41.0	26.6	24.6	25.4	11.1		42.5	35.7
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	71.2	4.4	0.0		135.8	0.4	0.3	55.5	0.1		11.7	1.2
Delay (s)	114.3	36.0	26.2		176.8	27.0	24.9	80.9	11.1		54.2	36.9
Level of Service	F	D	C		F	C	C	F	B		D	D
Approach Delay (s)		37.0				41.0			74.6			37.6
Approach LOS		D				D			E			D

Intersection Summary			
HCM Average Control Delay	56.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWR
Lane Configurations	
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Volume (vph)	40
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	43
RTOR Reduction (vph)	38
Lane Group Flow (vph)	5
Turn Type	Perm
Protected Phases	
Permitted Phases	8
Actuated Green, G (s)	10.2
Effective Green, g (s)	10.2
Actuated g/C Ratio	0.12
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	185
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.03
Uniform Delay, d1	34.1
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	34.1
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	37	72	62	41	115	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	40	78	67	45	125	76

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	40	78	112	201
Volume Left (vph)	40	0	0	125
Volume Right (vph)	0	78	45	0
Hadj (s)	0.53	-0.67	-0.20	0.16
Departure Headway (s)	5.7	4.5	4.2	4.5
Degree Utilization, x	0.06	0.10	0.13	0.25
Capacity (veh/h)	593	741	814	784
Control Delay (s)	7.9	6.8	7.9	9.0
Approach Delay (s)	7.2		7.9	9.0
Approach LOS	A		A	A

Intersection Summary			
Delay	8.2		
HCM Level of Service	A		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

2010 BASELINE PLUS PROJECT PHASE 1 WITH MITIGATION TRAFFIC CONDITION

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1794	1863	1583	3433	1583
Flt Permitted		0.79	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1466	1863	1583	3433	1583
Volume (vph)	105	32	12	547	1175	155
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	35	13	595	1277	168
RTOR Reduction (vph)	0	0	0	393	0	84
Lane Group Flow (vph)	0	149	13	202	1277	84
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)		17.0	17.0	17.0	25.0	25.0
Effective Green, g (s)		17.0	17.0	17.0	25.0	25.0
Actuated g/C Ratio		0.34	0.34	0.34	0.50	0.50
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		498	633	538	1717	792
v/s Ratio Prot			0.01			
v/s Ratio Perm		0.10		c0.13	c0.37	0.05
v/c Ratio		0.30	0.02	0.38	0.74	0.11
Uniform Delay, d1		12.1	11.0	12.5	10.0	6.6
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.5	0.1	2.0	1.8	0.1
Delay (s)		13.7	11.0	14.5	11.7	6.7
Level of Service		B	B	B	B	A
Approach Delay (s)		13.7	14.4		11.1	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			3539
Volume (vph)	55	825	651	0	0	1396
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	897	708	0	0	1517
RTOR Reduction (vph)	0	215	0	0	0	0
Lane Group Flow (vph)	60	682	708	0	0	1517
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	19.2	19.2	27.8			27.8
Effective Green, g (s)	19.2	19.2	27.8			27.8
Actuated g/C Ratio	0.35	0.35	0.51			0.51
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	618	973	942			1789
v/s Ratio Prot	0.03		0.38			c0.43
v/s Ratio Perm		c0.24				
v/c Ratio	0.10	0.70	0.75			0.85
Uniform Delay, d1	12.1	15.4	10.8			11.8
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.3	4.2	3.4			3.9
Delay (s)	12.4	19.6	14.3			15.7
Level of Service	B	B	B			B
Approach Delay (s)	19.2		14.3			15.7
Approach LOS	B		B			B

Intersection Summary			
HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Weber/Herndon

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[13.3]

Street Name:	Weber								Herndon							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 1	0	0	0	0 1	0	0	3	0 1	1	0	2	1 0
Volume Module:																
Base Vol:	0	0	15		0	0	0		0	1277	125		7	1741	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	15		0	0	0		0	1277	125		7	1741	0	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	15		0	0	0		0	1277	125		7	1741	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	0	0	16		0	0	0		0	1388	136		8	1892	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	16		0	0	0		0	1388	136		8	1892	0	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	6.9		xxxxx	xxxx	6.9		xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3		xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	463		xxxx	xxxx	631		xxxx	xxxx	xxxxx		1524	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	551		xxxx	xxxx	429		xxxx	xxxx	xxxxx		443	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	551		xxxx	xxxx	429		xxxx	xxxx	xxxxx		443	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.03		xxxx	xxxx	0.00		xxxx	xxxx	xxxx		0.02	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	0.1		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		0.1	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	11.7		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		13.3	xxxx	xxxxx	
LOS by Move:	*	*	B		*	*	*		*	*	*		B	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	11.7				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	B				*				*				*			

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	278	589	425	254	1044	223	443	41	262	206	49	254
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	302	640	462	276	1135	242	482	45	285	224	53	276
RTOR Reduction (vph)	0	0	198	0	0	184	0	0	194	0	0	246
Lane Group Flow (vph)	302	640	264	276	1135	58	482	45	91	224	53	30
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	18.0	42.8	8.0	18.0	18.0	24.8	24.0	24.0	9.0	8.2	8.2
Effective Green, g (s)	8.0	18.0	42.8	8.0	18.0	18.0	24.8	24.0	24.0	9.0	8.2	8.2
Actuated g/C Ratio	0.11	0.24	0.57	0.11	0.24	0.24	0.33	0.32	0.32	0.12	0.11	0.11
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	366	1220	903	366	1220	380	1135	596	507	412	204	173
v/s Ratio Prot	c0.09	0.13	0.10	0.08	c0.22		c0.14	0.02		c0.07	c0.03	
v/s Ratio Perm			0.07			0.04			0.06			0.02
v/c Ratio	0.83	0.52	0.29	0.75	0.93	0.15	0.42	0.08	0.18	0.54	0.26	0.17
Uniform Delay, d1	32.8	24.8	8.3	32.5	27.9	22.5	19.5	17.8	18.4	31.1	30.6	30.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.0	0.4	0.2	8.5	12.5	0.2	1.2	0.2	0.8	1.5	0.7	0.5
Delay (s)	46.8	25.2	8.5	41.1	40.4	22.7	20.7	18.0	19.2	32.5	31.3	30.8
Level of Service	D	C	A	D	D	C	C	B	B	C	C	C
Approach Delay (s)		24.3			37.9			20.0			31.6	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1645		3433	1715	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1645		3433	1715	
Volume (vph)	70	638	8	162	890	6	41	32	113	6	129	145
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	693	9	176	967	7	45	35	123	7	140	158
RTOR Reduction (vph)	0	0	7	0	0	5	0	78	0	0	65	0
Lane Group Flow (vph)	76	693	2	176	967	2	45	80	0	7	233	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	3.6	15.4	15.4	6.0	17.8	17.8	2.6	21.8		0.8	20.0	
Effective Green, g (s)	3.6	15.4	15.4	6.0	17.8	17.8	2.6	21.8		0.8	20.0	
Actuated g/C Ratio	0.06	0.26	0.26	0.10	0.30	0.30	0.04	0.36		0.01	0.33	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	106	1305	406	343	1509	470	149	598		46	572	
v/s Ratio Prot	0.04	0.14		c0.05	c0.19		c0.01	0.05		0.00	c0.14	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.72	0.53	0.01	0.51	0.64	0.00	0.30	0.13		0.15	0.41	
Uniform Delay, d1	27.7	19.2	16.6	25.6	18.3	14.9	27.8	12.8		29.3	15.4	
Progression Factor	1.00	1.00	1.00	1.06	1.67	2.16	1.00	1.00		1.00	1.00	
Incremental Delay, d2	20.5	0.4	0.0	0.9	0.7	0.0	1.1	0.5		1.5	2.2	
Delay (s)	48.2	19.6	16.6	28.0	31.2	32.1	29.0	13.2		30.8	17.6	
Level of Service	D	B	B	C	C	C	C	B		C	B	
Approach Delay (s)		22.4			30.7			16.7			17.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	25.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1609		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1609		3433	1863	1583
Volume (vph)	7	1231	103	108	1384	99	135	31	309	171	67	27
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	1338	112	117	1504	108	147	34	336	186	73	29
RTOR Reduction (vph)	0	0	71	0	0	51	0	128	0	0	0	22
Lane Group Flow (vph)	8	1338	41	117	1504	57	147	242	0	186	73	7
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	22.1	22.1	3.2	24.5	24.5	3.2	14.1		4.6	15.5	15.5
Effective Green, g (s)	0.8	22.1	22.1	3.2	24.5	24.5	3.2	14.1		4.6	15.5	15.5
Actuated g/C Ratio	0.01	0.37	0.37	0.05	0.41	0.41	0.05	0.24		0.08	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	46	1873	583	183	2076	646	183	378		263	481	409
v/s Ratio Prot	0.00	0.26		c0.03	c0.30		0.04	c0.15		c0.05	0.04	
v/s Ratio Perm			0.03			0.04						0.00
v/c Ratio	0.17	0.71	0.07	0.64	0.72	0.09	0.80	0.64		0.71	0.15	0.02
Uniform Delay, d1	29.3	16.2	12.3	27.8	14.9	10.9	28.1	20.7		27.0	17.2	16.6
Progression Factor	0.93	1.49	3.05	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.7	1.3	0.1	7.1	1.3	0.1	21.9	8.1		8.4	0.7	0.1
Delay (s)	28.9	25.4	37.5	35.0	16.2	11.0	50.0	28.8		35.4	17.8	16.7
Level of Service	C	C	D	C	B	B	D	C		D	B	B
Approach Delay (s)		26.4			17.1			34.8			29.1	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	262	1293	174	90	1148	264	155	286	147	488	397	282
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	285	1405	189	98	1248	287	168	311	160	530	432	307
RTOR Reduction (vph)	0	0	117	0	0	206	0	0	114	0	0	124
Lane Group Flow (vph)	285	1405	72	98	1248	81	168	311	46	530	432	183
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	23.6	23.6	3.2	19.8	19.8	6.9	15.2	15.2	12.0	20.3	20.3
Effective Green, g (s)	7.0	23.6	23.6	3.2	19.8	19.8	6.9	15.2	15.2	12.0	20.3	20.3
Actuated g/C Ratio	0.10	0.34	0.34	0.05	0.28	0.28	0.10	0.22	0.22	0.17	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1714	534	157	1438	448	338	768	344	589	1026	459
v/s Ratio Prot	c0.08	c0.28		0.03	0.25		0.05	0.09		c0.15	c0.12	
v/s Ratio Perm			0.05			0.05			0.03			0.12
v/c Ratio	0.83	0.82	0.14	0.62	0.87	0.18	0.50	0.40	0.13	0.90	0.42	0.40
Uniform Delay, d1	30.9	21.3	16.1	32.8	23.9	19.0	29.9	23.5	22.1	28.4	20.1	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.6	3.2	0.1	7.5	5.8	0.2	1.2	1.6	0.8	16.5	1.3	2.6
Delay (s)	46.5	24.4	16.2	40.3	29.7	19.2	31.1	25.1	22.9	45.0	21.4	22.5
Level of Service	D	C	B	D	C	B	C	C	C	D	C	C
Approach Delay (s)		27.0			28.5			26.1			31.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		0.97	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5003		3433	5071		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.69	1.00	1.00	0.69	1.00	1.00
Satd. Flow (perm)	1770	5003		3433	5071		1287	1863	1583	1281	1863	1583
Volume (vph)	77	1727	208	370	1297	25	177	98	421	66	94	48
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	1877	226	402	1410	27	192	107	458	72	102	52
RTOR Reduction (vph)	0	21	0	0	2	0	0	0	174	0	0	40
Lane Group Flow (vph)	84	2082	0	402	1435	0	192	107	284	72	102	12
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	6.3	31.8		10.0	35.5		16.2	16.2	16.2	16.2	16.2	16.2
Effective Green, g (s)	6.3	31.8		10.0	35.5		16.2	16.2	16.2	16.2	16.2	16.2
Actuated g/C Ratio	0.09	0.45		0.14	0.51		0.23	0.23	0.23	0.23	0.23	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	159	2273		490	2572		298	431	366	296	431	366
v/s Ratio Prot	0.05	c0.42		c0.12	c0.28			0.06			0.05	
v/s Ratio Perm							0.15		c0.18	0.06		0.01
v/c Ratio	0.53	0.92		0.82	0.56		0.64	0.25	0.78	0.24	0.24	0.03
Uniform Delay, d1	30.4	17.9		29.1	11.9		24.3	21.9	25.2	21.9	21.9	20.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	6.3		10.6	0.3		10.3	1.4	14.9	1.9	1.3	0.2
Delay (s)	33.6	24.2		39.7	12.1		34.6	23.3	40.1	23.9	23.2	21.0
Level of Service	C	C		D	B		C	C	D	C	C	C
Approach Delay (s)		24.6			18.1			36.3			22.9	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	122	2254	100	228	1468	248	153	137	263	222	159	154
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	2450	109	248	1596	270	166	149	286	241	173	167
RTOR Reduction (vph)	0	0	15	0	0	138	0	0	121	0	0	128
Lane Group Flow (vph)	133	2450	94	248	1596	132	166	149	165	241	173	39
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.9	44.0	44.0	7.0	44.1	44.1	6.0	16.0	16.0	7.0	17.0	17.0
Effective Green, g (s)	6.9	44.0	44.0	7.0	44.1	44.1	6.0	16.0	16.0	7.0	17.0	17.0
Actuated g/C Ratio	0.08	0.49	0.49	0.08	0.49	0.49	0.07	0.18	0.18	0.08	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	263	2486	774	267	2492	776	229	629	281	267	668	299
v/s Ratio Prot	0.04	c0.48		c0.07	0.31		0.05	0.04		c0.07	0.05	
v/s Ratio Perm			0.06			0.08			c0.10			0.02
v/c Ratio	0.51	0.99	0.12	0.93	0.64	0.17	0.72	0.24	0.59	0.90	0.26	0.13
Uniform Delay, d1	39.9	22.7	12.5	41.3	17.1	12.8	41.2	31.8	34.0	41.2	31.1	30.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	14.7	0.1	36.1	0.6	0.1	10.8	0.9	8.7	30.8	0.9	0.9
Delay (s)	41.4	37.4	12.6	77.3	17.6	12.9	52.0	32.6	42.7	72.0	32.1	31.2
Level of Service	D	D	B	E	B	B	D	C	D	E	C	C
Approach Delay (s)		36.6			24.0			42.8			48.4	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	33.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	63	2689	183	333	2015	130	95	77	307	250	103	50
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	2923	199	362	2190	141	103	84	334	272	112	54
RTOR Reduction (vph)	0	0	49	0	0	33	0	0	9	0	0	43
Lane Group Flow (vph)	68	2923	150	362	2190	108	103	84	325	272	112	11
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	60.8	60.8	11.0	67.8	67.8	6.9	16.2	27.2	16.0	25.3	25.3
Effective Green, g (s)	4.0	60.8	60.8	11.0	67.8	67.8	6.9	16.2	27.2	16.0	25.3	25.3
Actuated g/C Ratio	0.03	0.51	0.51	0.09	0.56	0.56	0.06	0.13	0.23	0.13	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2576	802	315	2873	894	197	478	412	236	1072	334
v/s Ratio Prot	0.02	c0.57		c0.11	0.43		0.03	0.02	c0.07	c0.15	0.02	
v/s Ratio Perm			0.09			0.07			0.13			0.01
v/c Ratio	0.60	1.13	0.19	1.15	0.76	0.12	0.52	0.18	0.79	1.15	0.10	0.03
Uniform Delay, d1	57.2	29.6	16.1	54.5	19.9	12.2	55.0	46.0	43.7	52.0	38.2	37.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	66.0	0.1	97.5	1.2	0.1	2.5	0.8	9.6	106.0	0.2	0.2
Delay (s)	65.3	95.6	16.2	152.0	21.2	12.2	57.4	46.8	53.3	158.0	38.4	37.8
Level of Service	E	F	B	F	C	B	E	D	D	F	D	D
Approach Delay (s)		90.0			38.3			53.1			112.6	
Approach LOS		F			D			D			F	

Intersection Summary			
HCM Average Control Delay	68.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			1.00	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			1770	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			1770	1583
Volume (vph)	896	412	0	0	607	183
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	974	448	0	0	660	199
RTOR Reduction (vph)	0	291	0	0	0	14
Lane Group Flow (vph)	974	157	0	0	660	185
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	15.8	15.8			21.2	21.2
Effective Green, g (s)	15.8	15.8			21.2	21.2
Actuated g/C Ratio	0.35	0.35			0.47	0.47
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1243	556			834	746
v/s Ratio Prot	c0.28				c0.37	
v/s Ratio Perm		0.10				0.12
v/c Ratio	0.78	0.28			0.79	0.25
Uniform Delay, d1	13.1	10.5			10.0	7.1
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	3.3	0.3			7.6	0.8
Delay (s)	16.4	10.8			17.6	7.9
Level of Service	B	B			B	A
Approach Delay (s)	14.6			0.0	15.4	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	26	286	193	41	175	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	311	210	45	190	165

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	28	311	254	355
Volume Left (vph)	28	0	0	190
Volume Right (vph)	0	311	45	0
Hadj (s)	0.53	-0.67	-0.07	0.14
Departure Headway (s)	6.7	5.4	5.3	5.4
Degree Utilization, x	0.05	0.47	0.38	0.53
Capacity (veh/h)	511	613	637	640
Control Delay (s)	8.8	12.0	11.5	14.3
Approach Delay (s)	11.7		11.5	14.3
Approach LOS	B		B	B

Intersection Summary			
Delay	12.7		
HCM Level of Service	B		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539		1770	1841	
Flt Permitted	0.76	1.00	1.00	0.76	1.00	1.00	0.57	1.00		0.45	1.00	
Satd. Flow (perm)	1407	1863	1583	1407	1863	1583	1068	3539		831	1841	
Volume (vph)	70	4	7	10	4	190	8	507	0	62	260	22
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	4	8	11	4	207	9	551	0	67	283	24
RTOR Reduction (vph)	0	0	6	0	0	138	0	0	0	0	6	0
Lane Group Flow (vph)	76	4	2	11	4	69	9	551	0	67	301	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	8.4	8.4	8.4	8.4	8.4	8.4	20.6	20.6		20.6	20.6	
Effective Green, g (s)	8.4	8.4	8.4	8.4	8.4	8.4	20.6	20.6		20.6	20.6	
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23	0.23	0.56	0.56		0.56	0.56	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	319	423	359	319	423	359	595	1970		463	1025	
v/s Ratio Prot		0.00			0.00			0.16			c0.16	
v/s Ratio Perm	c0.05		0.00	0.01		0.04	0.01			0.08		
v/c Ratio	0.24	0.01	0.01	0.03	0.01	0.19	0.02	0.28		0.14	0.29	
Uniform Delay, d1	11.7	11.1	11.1	11.1	11.1	11.6	3.7	4.3		4.0	4.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.0	0.0	0.0	0.0	0.3	0.0	0.1		0.1	0.2	
Delay (s)	12.1	11.1	11.1	11.2	11.1	11.8	3.7	4.4		4.1	4.5	
Level of Service	B	B	B	B	B	B	A	A		A	A	
Approach Delay (s)		11.9			11.8			4.4			4.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	37.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.91		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1700		1770	1863	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	1700		1770	1863	1770	1583
Volume (vph)	110	203	529	164	138	208
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	221	575	178	150	226
RTOR Reduction (vph)	87	0	0	0	0	190
Lane Group Flow (vph)	254	0	575	178	150	36
Turn Type			Prot			Perm
Protected Phases	6		5	2	4	
Permitted Phases						4
Actuated Green, G (s)	20.4		26.5	50.9	11.1	11.1
Effective Green, g (s)	20.4		26.5	50.9	11.1	11.1
Actuated g/C Ratio	0.29		0.38	0.73	0.16	0.16
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	495		670	1355	281	251
v/s Ratio Prot	c0.15		c0.32	0.10	c0.08	
v/s Ratio Perm						0.02
v/c Ratio	0.51		0.86	0.13	0.53	0.14
Uniform Delay, d1	20.7		20.0	2.9	27.1	25.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8		10.6	0.2	1.9	0.3
Delay (s)	24.4		30.6	3.1	29.0	25.6
Level of Service	C		C	A	C	C
Approach Delay (s)	24.4			24.1	27.0	
Approach LOS	C			C	C	

Intersection Summary			
HCM Average Control Delay	24.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0			4.0	
Lane Util. Factor		0.95			1.00	1.00		1.00			1.00	
Frt		0.99			1.00	0.85		0.95			0.97	
Flt Protected		0.99			1.00	1.00		0.99			0.96	
Satd. Flow (prot)		3486			1860	1583		1755			1740	
Flt Permitted		0.87			0.99	1.00		0.94			0.77	
Satd. Flow (perm)		3079			1846	1583		1673			1393	
Volume (vph)	49	185	8	4	125	261	2	5	4	561	12	169
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	201	9	4	136	284	2	5	4	610	13	184
RTOR Reduction (vph)	0	4	0	0	0	211	0	2	0	0	17	0
Lane Group Flow (vph)	0	259	0	0	140	73	0	9	0	0	790	0
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2		2	4			8		
Actuated Green, G (s)		16.6			16.6	16.6		40.4			40.4	
Effective Green, g (s)		16.6			16.6	16.6		40.4			40.4	
Actuated g/C Ratio		0.26			0.26	0.26		0.62			0.62	
Clearance Time (s)		4.0			4.0	4.0		4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		786			471	404		1040			866	
v/s Ratio Prot												
v/s Ratio Perm		c0.08			0.08	0.05		0.01			c0.57	
v/c Ratio		0.33			0.30	0.18		0.01			0.91	
Uniform Delay, d1		19.7			19.5	18.9		4.7			10.8	
Progression Factor		1.00			1.00	1.00		1.00			1.00	
Incremental Delay, d2		1.1			1.6	1.0		0.0			13.8	
Delay (s)		20.8			21.1	19.9		4.7			24.5	
Level of Service		C			C	B		A			C	
Approach Delay (s)		20.8			20.3			4.7			24.5	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Volume (vph)	170	893	81	104	545	95	49	432	82	86	461	69
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	971	88	113	592	103	53	470	89	93	501	75
RTOR Reduction (vph)	0	0	40	0	15	0	0	0	46	0	0	43
Lane Group Flow (vph)	185	971	48	113	680	0	53	470	43	93	501	32
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.7	47.0	47.0	6.0	39.3		3.2	16.0	16.0	5.0	17.8	17.8
Effective Green, g (s)	13.7	47.0	47.0	6.0	39.3		3.2	16.0	16.0	5.0	17.8	17.8
Actuated g/C Ratio	0.15	0.52	0.52	0.07	0.44		0.04	0.18	0.18	0.06	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	269	973	827	118	1511		63	629	281	98	700	313
v/s Ratio Prot	0.10	c0.52		c0.06	0.20		0.03	0.13		c0.05	c0.14	
v/s Ratio Perm			0.03						0.03			0.02
v/c Ratio	0.69	1.00	0.06	0.96	0.45		0.84	0.75	0.15	0.95	0.72	0.10
Uniform Delay, d1	36.1	21.5	10.6	41.9	17.8		43.1	35.1	31.3	42.4	33.7	29.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.1	28.1	0.0	68.8	0.2		60.8	4.8	0.3	73.5	3.5	0.1
Delay (s)	43.2	49.6	10.6	110.7	18.0		104.0	39.9	31.5	115.9	37.2	29.7
Level of Service	D	D	B	F	B		F	D	C	F	D	C
Approach Delay (s)		45.9			31.0			44.2			47.3	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	42.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	61	29	11	4	18	73	8	348	6	49	186	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	66	32	12	4	20	79	9	378	7	53	202	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	793	711	202	732	733	378	230			385		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	793	711	202	732	733	378	230			385		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	91	99	99	94	88	99			95		
cM capacity (veh/h)	248	340	839	296	330	668	1337			1174		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	110	103	387	7	255	28
Volume Left	66	4	9	0	53	0
Volume Right	12	79	0	7	0	28
cSH	293	536	1337	1700	1174	1700
Volume to Capacity	0.37	0.19	0.01	0.00	0.05	0.02
Queue Length 95th (ft)	42	18	0	0	4	0
Control Delay (s)	24.5	13.3	0.2	0.0	2.0	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	24.5	13.3	0.2		1.8	
Approach LOS	C	B				

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Volume (vph)	902	488	568	841	75	267
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	980	530	617	914	82	290
RTOR Reduction (vph)	0	313	0	0	0	232
Lane Group Flow (vph)	980	217	617	914	82	58
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	27.1	27.1	32.9	64.0	18.0	18.0
Effective Green, g (s)	27.1	27.1	32.9	64.0	18.0	18.0
Actuated g/C Ratio	0.30	0.30	0.37	0.71	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1066	477	647	2517	354	317
v/s Ratio Prot	c0.28		c0.35	0.26	c0.05	
v/s Ratio Perm		0.14				0.04
v/c Ratio	0.92	0.45	0.95	0.36	0.23	0.18
Uniform Delay, d1	30.4	25.5	27.8	5.1	30.2	29.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.3	0.7	24.3	0.1	1.5	1.3
Delay (s)	42.7	26.2	52.1	5.2	31.7	31.2
Level of Service	D	C	D	A	C	C
Approach Delay (s)	36.9			24.1	31.3	
Approach LOS	D			C	C	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	36	1010	39	370	1124	189	225	398	32	17	302	527
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1098	42	402	1222	205	245	433	35	18	328	573
RTOR Reduction (vph)	0	0	19	0	0	83	0	0	25	0	0	306
Lane Group Flow (vph)	39	1098	23	402	1222	122	245	433	10	18	328	267
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	3.6	35.6	35.6	25.0	57.0	57.0	15.0	31.4	31.4	2.0	18.4	18.4
Effective Green, g (s)	3.6	35.6	35.6	25.0	57.0	57.0	15.0	31.4	31.4	2.0	18.4	18.4
Actuated g/C Ratio	0.03	0.32	0.32	0.23	0.52	0.52	0.14	0.29	0.29	0.02	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1145	512	402	1834	820	241	1010	452	32	592	265
v/s Ratio Prot	0.02	c0.31		c0.23	0.35		c0.14	0.12		0.01	0.09	
v/s Ratio Perm			0.01			0.08			0.01			c0.17
v/c Ratio	0.67	0.96	0.05	1.00	0.67	0.15	1.02	0.43	0.02	0.56	0.55	1.01
Uniform Delay, d1	52.6	36.5	25.5	42.5	19.5	13.8	47.5	32.0	28.3	53.6	42.0	45.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.6	17.4	0.0	44.9	0.9	0.1	62.3	1.3	0.1	20.7	3.7	56.8
Delay (s)	79.2	53.9	25.6	87.4	20.4	13.9	109.8	33.3	28.3	74.2	45.7	102.6
Level of Service	E	D	C	F	C	B	F	C	C	E	D	F
Approach Delay (s)		53.7			34.4			59.4			81.7	
Approach LOS		D			C			E			F	

Intersection Summary			
HCM Average Control Delay	52.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	103	1212	74	121	1149	94	171	230	64	243	696	145
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	1317	80	132	1249	102	186	250	70	264	757	158
RTOR Reduction (vph)	0	0	56	0	0	71	0	0	51	0	0	112
Lane Group Flow (vph)	112	1317	24	132	1249	31	186	250	19	264	757	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	18.1	18.1	3.2	18.1	18.1	5.3	16.4	16.4	6.3	17.4	17.4
Effective Green, g (s)	3.2	18.1	18.1	3.2	18.1	18.1	5.3	16.4	16.4	6.3	17.4	17.4
Actuated g/C Ratio	0.05	0.30	0.30	0.05	0.30	0.30	0.09	0.27	0.27	0.10	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1534	478	183	1534	478	303	967	433	360	1026	459
v/s Ratio Prot	0.03	c0.26		c0.04	0.25		0.05	0.07		c0.08	c0.21	
v/s Ratio Perm			0.02			0.02			0.01			0.03
v/c Ratio	0.61	0.86	0.05	0.72	0.81	0.06	0.61	0.26	0.04	0.73	0.74	0.10
Uniform Delay, d1	27.8	19.7	14.9	28.0	19.4	14.9	26.4	17.0	16.0	26.0	19.2	15.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	5.0	0.0	13.1	3.4	0.1	3.7	0.6	0.2	7.5	4.7	0.4
Delay (s)	33.7	24.8	14.9	41.1	22.8	15.0	30.0	17.7	16.2	33.6	24.0	16.0
Level of Service	C	C	B	D	C	B	C	B	B	C	C	B
Approach Delay (s)		24.9			23.9			22.0			25.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	0.88	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1694	2787	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00	0.65		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1694	2787	2365		1583
Volume (vph)	344	1096	0	0	563	298	262	15	487	179	0	211
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	374	1191	0	0	612	324	285	16	529	195	0	229
RTOR Reduction (vph)	0	0	0	0	0	177	0	0	146	0	0	188
Lane Group Flow (vph)	374	1191	0	0	612	147	147	154	383	195	0	41
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	20.9	42.3			17.4	17.4	18.0	18.0	18.0	16.0		16.0
Effective Green, g (s)	20.9	42.3			17.4	17.4	18.0	18.0	18.0	16.0		16.0
Actuated g/C Ratio	0.24	0.48			0.20	0.20	0.20	0.20	0.20	0.18		0.18
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	419	1695			697	312	343	345	568	429		287
v/s Ratio Prot	c0.21	0.34			c0.17		0.09	0.09				
v/s Ratio Perm						0.09			c0.14	c0.08		0.03
v/c Ratio	0.89	0.70			0.88	0.47	0.43	0.45	0.67	0.45		0.14
Uniform Delay, d1	32.6	18.1			34.4	31.4	30.7	30.8	32.4	32.3		30.4
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	20.6	1.3			12.1	1.1	3.9	4.1	6.3	3.4		1.1
Delay (s)	53.2	19.4			46.5	32.5	34.5	34.9	38.8	35.7		31.5
Level of Service	D	B			D	C	C	C	D	D		C
Approach Delay (s)		27.5			41.6			37.3			33.4	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	33.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1796	1863	1583	3433	1583
Flt Permitted		0.78	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1460	1863	1583	3433	1583
Volume (vph)	98	35	14	585	1515	148
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	38	15	636	1647	161
RTOR Reduction (vph)	0	0	0	462	0	53
Lane Group Flow (vph)	0	145	15	174	1647	108
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)		16.4	16.4	16.4	35.6	35.6
Effective Green, g (s)		16.4	16.4	16.4	35.6	35.6
Actuated g/C Ratio		0.27	0.27	0.27	0.59	0.59
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		399	509	433	2037	939
v/s Ratio Prot			0.01			
v/s Ratio Perm		0.10		c0.11	c0.48	0.07
v/c Ratio		0.36	0.03	0.40	0.81	0.11
Uniform Delay, d1		17.6	16.0	17.8	9.5	5.3
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		2.6	0.1	2.8	2.5	0.1
Delay (s)		20.1	16.1	20.6	12.0	5.4
Level of Service		C	B	C	B	A
Approach Delay (s)		20.1	20.5		11.4	
Approach LOS		C	C		B	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			0.95
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			3539
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			3539
Volume (vph)	88	1172	693	0	0	1655
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	1274	753	0	0	1799
RTOR Reduction (vph)	0	185	0	0	0	0
Lane Group Flow (vph)	96	1089	753	0	0	1799
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	34.6	34.6	47.4			47.4
Effective Green, g (s)	34.6	34.6	47.4			47.4
Actuated g/C Ratio	0.38	0.38	0.53			0.53
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	680	1071	981			1864
v/s Ratio Prot	0.05		0.40			c0.51
v/s Ratio Perm		c0.39				
v/c Ratio	0.14	1.02	0.77			0.97
Uniform Delay, d1	18.0	27.7	16.9			20.5
Progression Factor	1.00	1.00	1.00			1.43
Incremental Delay, d2	0.4	31.7	3.7			7.6
Delay (s)	18.5	59.4	20.6			37.0
Level of Service	B	E	C			D
Approach Delay (s)	56.5		20.6			37.0
Approach LOS	E		C			D

Intersection Summary			
HCM Average Control Delay	40.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Weber/Herndon

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: C[22.2]

Street Name:	Weber								Herndon							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 1	0	0	0	0 1	0	0	3	0 1	1	0	2	1 0
Volume Module:																
Base Vol:	0	0	148		0	0	0		0	1818	248		22	1589	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	148		0	0	0		0	1818	248		22	1589	0	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	148		0	0	0		0	1818	248		22	1589	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	0	0	161		0	0	0		0	1976	270		24	1727	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	161		0	0	0		0	1976	270		24	1727	0	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	6.9		xxxxx	xxxx	6.9		xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3		xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	659		xxxx	xxxx	576		xxxx	xxxx	xxxxx		2246	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	411		xxxx	xxxx	466		xxxx	xxxx	xxxxx		233	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	411		xxxx	xxxx	466		xxxx	xxxx	xxxxx		233	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.39		xxxx	xxxx	0.00		xxxx	xxxx	xxxx		0.10	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	1.8		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		0.3	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	19.3		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		22.2	xxxx	xxxxx	
LOS by Move:	*	*	C		*	*	*		*	*	*		C	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	19.3				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	C				*				*				*			

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	240	1180	546	380	790	188	544	154	345	224	147	255
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	1283	593	413	859	204	591	167	375	243	160	277
RTOR Reduction (vph)	0	0	142	0	0	151	0	0	208	0	0	213
Lane Group Flow (vph)	261	1283	451	413	859	53	591	167	167	243	160	64
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.2	21.0	37.0	10.0	20.8	20.8	16.0	23.5	23.5	9.5	17.0	17.0
Effective Green, g (s)	10.2	21.0	37.0	10.0	20.8	20.8	16.0	23.5	23.5	9.5	17.0	17.0
Actuated g/C Ratio	0.13	0.26	0.46	0.12	0.26	0.26	0.20	0.29	0.29	0.12	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	438	1335	811	429	1322	412	687	547	465	408	396	336
v/s Ratio Prot	0.08	c0.25	0.11	c0.12	0.17		c0.17	0.09		0.07	0.09	
v/s Ratio Perm			0.17			0.03			c0.11			0.04
v/c Ratio	0.60	0.96	0.56	0.96	0.65	0.13	0.86	0.31	0.36	0.60	0.40	0.19
Uniform Delay, d1	33.0	29.1	15.6	34.8	26.4	22.7	30.9	21.9	22.3	33.4	27.1	25.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	16.2	0.8	33.7	1.1	0.1	13.3	1.4	2.2	2.3	0.7	0.3
Delay (s)	35.1	45.3	16.4	68.5	27.5	22.8	44.2	23.4	24.5	35.8	27.8	26.1
Level of Service	D	D	B	E	C	C	D	C	C	D	C	C
Approach Delay (s)		36.0			38.3			34.6			30.0	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	35.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1654		3433	1634	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1654		3433	1634	
Volume (vph)	136	1018	24	79	729	10	14	32	95	6	12	53
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	1107	26	86	792	11	15	35	103	7	13	58
RTOR Reduction (vph)	0	0	18	0	0	8	0	66	0	0	37	0
Lane Group Flow (vph)	148	1107	8	86	792	3	15	72	0	7	34	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	6.4	18.5	18.5	3.2	15.3	15.3	0.8	21.5		0.8	21.5	
Effective Green, g (s)	6.4	18.5	18.5	3.2	15.3	15.3	0.8	21.5		0.8	21.5	
Actuated g/C Ratio	0.11	0.31	0.31	0.05	0.26	0.26	0.01	0.36		0.01	0.36	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	189	1568	488	183	1297	404	46	593		46	586	
v/s Ratio Prot	c0.08	c0.22		0.03	0.16		c0.00	c0.04		0.00	0.02	
v/s Ratio Perm			0.01			0.00						
v/c Ratio	0.78	0.71	0.02	0.47	0.61	0.01	0.33	0.12		0.15	0.06	
Uniform Delay, d1	26.1	18.3	14.4	27.6	19.7	16.7	29.3	12.9		29.3	12.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	18.8	1.5	0.0	1.9	0.9	0.0	4.1	0.4		1.5	0.2	
Delay (s)	44.9	19.8	14.4	29.5	20.6	16.7	33.4	13.3		30.8	12.8	
Level of Service	D	B	B	C	C	B	C	B		C	B	
Approach Delay (s)		22.6			21.4			15.3			14.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1651		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1651		3433	1863	1583
Volume (vph)	9	1710	188	377	1553	202	90	83	261	207	80	27
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	1859	204	410	1688	220	98	90	284	225	87	29
RTOR Reduction (vph)	0	0	117	0	0	61	0	132	0	0	0	23
Lane Group Flow (vph)	10	1859	87	410	1688	159	98	242	0	225	87	6
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	38.2	38.2	12.0	49.4	49.4	4.0	16.8		7.0	19.8	19.8
Effective Green, g (s)	0.8	38.2	38.2	12.0	49.4	49.4	4.0	16.8		7.0	19.8	19.8
Actuated g/C Ratio	0.01	0.42	0.42	0.13	0.55	0.55	0.04	0.19		0.08	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	31	2158	672	458	2791	869	153	308		267	410	348
v/s Ratio Prot	0.00	c0.37		c0.12	0.33		0.03	c0.15		c0.07	c0.05	
v/s Ratio Perm			0.05			0.10						0.00
v/c Ratio	0.32	0.86	0.13	0.90	0.60	0.18	0.64	0.79		0.84	0.21	0.02
Uniform Delay, d1	44.3	23.5	15.8	38.4	13.7	10.2	42.3	34.9		41.0	28.7	27.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.0	3.8	0.1	19.6	0.4	0.1	8.8	18.1		20.8	1.2	0.1
Delay (s)	50.3	27.3	15.9	57.9	14.1	10.3	51.1	53.0		61.7	29.9	27.6
Level of Service	D	C	B	E	B	B	D	D		E	C	C
Approach Delay (s)		26.3			21.5			52.6			50.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	28.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	480	1519	175	103	1588	523	190	550	65	571	488	355
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	522	1651	190	112	1726	568	207	598	71	621	530	386
RTOR Reduction (vph)	0	0	72	0	0	214	0	0	40	0	0	170
Lane Group Flow (vph)	522	1651	118	112	1726	354	207	598	31	621	530	216
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.0	41.1	41.1	6.9	33.0	33.0	8.0	18.0	18.0	18.0	28.0	28.0
Effective Green, g (s)	15.0	41.1	41.1	6.9	33.0	33.0	8.0	18.0	18.0	18.0	28.0	28.0
Actuated g/C Ratio	0.15	0.41	0.41	0.07	0.33	0.33	0.08	0.18	0.18	0.18	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	515	2090	651	237	1678	522	275	637	285	618	991	443
v/s Ratio Prot	c0.15	0.32		0.03	c0.34		0.06	c0.17		c0.18	0.15	
v/s Ratio Perm			0.07			0.22			0.02			0.14
v/c Ratio	1.01	0.79	0.18	0.47	1.03	0.68	0.75	0.94	0.11	1.00	0.53	0.49
Uniform Delay, d1	42.5	25.7	18.7	44.8	33.5	28.9	45.0	40.5	34.3	41.0	30.5	30.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	43.1	2.1	0.1	1.5	29.6	3.5	11.1	23.4	0.8	37.4	2.1	3.8
Delay (s)	85.6	27.8	18.9	46.3	63.1	32.4	56.1	63.9	35.1	78.4	32.6	33.8
Level of Service	F	C	B	D	E	C	E	E	D	E	C	C
Approach Delay (s)		39.8			55.1			59.7			51.4	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM Average Control Delay	49.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		0.97	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	4946		3433	5061		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.69	1.00	1.00	0.67	1.00	1.00
Satd. Flow (perm)	1770	4946		3433	5061		1291	1863	1583	1254	1863	1583
Volume (vph)	66	1780	398	484	1923	63	370	96	414	28	85	69
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	1935	433	526	2090	68	402	104	450	30	92	75
RTOR Reduction (vph)	0	32	0	0	3	0	0	0	153	0	0	53
Lane Group Flow (vph)	72	2336	0	526	2155	0	402	104	297	30	92	22
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	5.6	49.8		16.0	60.2		32.2	32.2	32.2	32.2	32.2	32.2
Effective Green, g (s)	5.6	49.8		16.0	60.2		32.2	32.2	32.2	32.2	32.2	32.2
Actuated g/C Ratio	0.05	0.45		0.15	0.55		0.29	0.29	0.29	0.29	0.29	0.29
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	90	2239		499	2770		378	545	463	367	545	463
v/s Ratio Prot	0.04	c0.47		c0.15	0.43			0.06			0.05	
v/s Ratio Perm							c0.31		0.19	0.02		0.01
v/c Ratio	0.80	1.04		1.05	0.78		1.06	0.19	0.64	0.08	0.17	0.05
Uniform Delay, d1	51.6	30.1		47.0	19.6		38.9	29.1	33.9	28.2	28.9	27.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	38.2	31.4		55.3	1.4		64.1	0.8	6.7	0.4	0.7	0.2
Delay (s)	89.8	61.5		102.3	21.1		103.0	29.9	40.5	28.6	29.6	28.1
Level of Service	F	E		F	C		F	C	D	C	C	C
Approach Delay (s)		62.4			37.0			65.6			28.9	
Approach LOS		E			D			E			C	

Intersection Summary			
HCM Average Control Delay	51.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	231	2011	158	332	2253	390	204	248	254	278	233	352
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	251	2186	172	361	2449	424	222	270	276	302	253	383
RTOR Reduction (vph)	0	0	26	0	0	162	0	0	120	0	0	117
Lane Group Flow (vph)	251	2186	146	361	2449	262	222	270	156	302	253	266
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	40.0	40.0	10.0	43.0	43.0	6.0	16.0	16.0	8.0	18.0	18.0
Effective Green, g (s)	7.0	40.0	40.0	10.0	43.0	43.0	6.0	16.0	16.0	8.0	18.0	18.0
Actuated g/C Ratio	0.08	0.44	0.44	0.11	0.48	0.48	0.07	0.18	0.18	0.09	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	267	2260	704	381	2430	756	229	629	281	305	708	317
v/s Ratio Prot	0.07	0.43		c0.11	c0.48		0.06	0.08		c0.09	0.07	
v/s Ratio Perm			0.09			0.17			0.10			c0.17
v/c Ratio	0.94	0.97	0.21	0.95	1.01	0.35	0.97	0.43	0.56	0.99	0.36	0.84
Uniform Delay, d1	41.3	24.4	15.3	39.7	23.5	14.7	41.9	32.9	33.8	41.0	31.0	34.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.22	0.88	0.84	1.00	1.00	1.00
Incremental Delay, d2	39.1	12.1	0.1	32.5	20.2	0.3	33.6	1.1	3.9	48.7	1.4	22.6
Delay (s)	80.3	36.5	15.5	72.2	43.7	15.0	84.7	30.1	32.3	89.7	32.4	57.3
Level of Service	F	D	B	E	D	B	F	C	C	F	C	E
Approach Delay (s)		39.3			43.1			46.7			61.0	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM Average Control Delay	44.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	103	2285	183	303	2889	308	190	144	464	214	152	164
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	2484	199	329	3140	335	207	157	504	233	165	178
RTOR Reduction (vph)	0	0	59	0	0	58	0	0	12	0	0	49
Lane Group Flow (vph)	112	2484	140	329	3140	277	207	157	492	233	165	130
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	56.0	56.0	16.0	68.0	68.0	9.0	17.0	33.0	15.0	23.0	23.0
Effective Green, g (s)	4.0	56.0	56.0	16.0	68.0	68.0	9.0	17.0	33.0	15.0	23.0	23.0
Actuated g/C Ratio	0.03	0.47	0.47	0.13	0.57	0.57	0.08	0.14	0.28	0.12	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2373	739	458	2882	897	257	501	488	221	975	303
v/s Ratio Prot	0.03	0.49		0.10	c0.62		0.06	0.04	c0.13	c0.13	0.03	
v/s Ratio Perm			0.09			0.18			0.18			0.08
v/c Ratio	0.98	1.05	0.19	0.72	1.09	0.31	0.81	0.31	1.01	1.05	0.17	0.43
Uniform Delay, d1	58.0	32.0	18.7	49.8	26.0	13.7	54.6	46.3	43.5	52.5	40.5	42.7
Progression Factor	1.00	1.00	1.00	1.16	0.43	0.30	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	78.3	32.2	0.1	0.5	41.0	0.0	16.6	1.6	43.0	75.6	0.4	4.4
Delay (s)	136.3	64.2	18.8	58.4	52.0	4.1	71.2	47.9	86.5	128.1	40.9	47.1
Level of Service	F	E	B	E	D	A	E	D	F	F	D	D
Approach Delay (s)		63.8			48.3			75.9			78.1	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM Average Control Delay	58.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			1.00	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			1770	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			1770	1583
Volume (vph)	824	768	0	0	629	62
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	896	835	0	0	684	67
RTOR Reduction (vph)	0	538	0	0	0	19
Lane Group Flow (vph)	896	297	0	0	684	48
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	16.0	16.0			21.0	21.0
Effective Green, g (s)	16.0	16.0			21.0	21.0
Actuated g/C Ratio	0.36	0.36			0.47	0.47
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1258	563			826	739
v/s Ratio Prot	c0.25				c0.39	
v/s Ratio Perm		0.19				0.03
v/c Ratio	0.71	0.53			0.83	0.06
Uniform Delay, d1	12.5	11.5			10.4	6.6
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	1.9	0.9			9.4	0.2
Delay (s)	14.4	12.4			19.8	6.8
Level of Service	B	B			B	A
Approach Delay (s)	13.5			0.0	18.6	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	49	89	76	27	151	84
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	97	83	29	164	91

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	53	97	112	255
Volume Left (vph)	53	0	0	164
Volume Right (vph)	0	97	29	0
Hadj (s)	0.53	-0.67	-0.12	0.16
Departure Headway (s)	5.9	4.7	4.5	4.6
Degree Utilization, x	0.09	0.13	0.14	0.32
Capacity (veh/h)	576	715	765	756
Control Delay (s)	8.3	7.2	8.2	9.8
Approach Delay (s)	7.6		8.2	9.8
Approach LOS	A		A	A

Intersection Summary			
Delay	8.8		
HCM Level of Service	A		
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539		1770	1841	
Flt Permitted	0.75	1.00	1.00	0.76	1.00	1.00	0.37	1.00		0.48	1.00	
Satd. Flow (perm)	1405	1863	1583	1408	1863	1583	686	3539		902	1841	
Volume (vph)	57	3	3	14	5	81	7	429	0	68	556	48
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	62	3	3	15	5	88	8	466	0	74	604	52
RTOR Reduction (vph)	0	0	3	0	0	77	0	0	0	0	3	0
Lane Group Flow (vph)	62	3	0	15	5	11	8	466	0	74	653	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	7.2	7.2	7.2	7.2	7.2	7.2	41.6	41.6		41.6	41.6	
Effective Green, g (s)	7.2	7.2	7.2	7.2	7.2	7.2	41.6	41.6		41.6	41.6	
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.13	0.13	0.73	0.73		0.73	0.73	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	178	236	201	178	236	201	502	2592		661	1348	
v/s Ratio Prot		0.00			0.00			0.13			c0.35	
v/s Ratio Perm	c0.04		0.00	0.01		0.01	0.01			0.08		
v/c Ratio	0.35	0.01	0.00	0.08	0.02	0.06	0.02	0.18		0.11	0.48	
Uniform Delay, d1	22.7	21.7	21.7	21.9	21.7	21.8	2.1	2.3		2.2	3.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	0.0	0.0	0.2	0.0	0.1	0.0	0.0		0.1	0.3	
Delay (s)	23.8	21.7	21.7	22.1	21.8	21.9	2.1	2.4		2.3	3.4	
Level of Service	C	C	C	C	C	C	A	A		A	A	
Approach Delay (s)		23.7			21.9			2.4			3.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	5.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1771		1770	1863	1770	1583
Flt Permitted	1.00		0.39	1.00	0.95	1.00
Satd. Flow (perm)	1771		733	1863	1770	1583
Volume (vph)	304	175	371	298	150	741
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	330	190	403	324	163	805
RTOR Reduction (vph)	22	0	0	0	0	394
Lane Group Flow (vph)	498	0	403	324	163	411
Turn Type			Perm			Perm
Protected Phases	6			2	4	
Permitted Phases			2			4
Actuated Green, G (s)	57.0		57.0	57.0	25.0	25.0
Effective Green, g (s)	57.0		57.0	57.0	25.0	25.0
Actuated g/C Ratio	0.63		0.63	0.63	0.28	0.28
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1122		464	1180	492	440
v/s Ratio Prot	0.28			0.17	0.09	
v/s Ratio Perm			c0.55			c0.26
v/c Ratio	0.44		0.87	0.27	0.33	0.93
Uniform Delay, d1	8.4		13.4	7.3	25.9	31.7
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3		19.3	0.6	0.4	26.8
Delay (s)	9.7		32.8	7.9	26.2	58.5
Level of Service	A		C	A	C	E
Approach Delay (s)	9.7			21.7	53.1	
Approach LOS	A			C	D	

Intersection Summary			
HCM Average Control Delay	32.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0			4.0	
Lane Util. Factor		0.95			1.00	1.00		1.00			1.00	
Frt		0.99			1.00	0.85		0.98			0.97	
Flt Protected		0.98			1.00	1.00		0.98			0.97	
Satd. Flow (prot)		3438			1859	1583		1794			1740	
Flt Permitted		0.72			0.99	1.00		0.81			0.74	
Satd. Flow (perm)		2520			1835	1583		1482			1341	
Volume (vph)	148	169	16	8	223	665	24	31	9	367	23	125
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	161	184	17	9	242	723	26	34	10	399	25	136
RTOR Reduction (vph)	0	7	0	0	0	442	0	5	0	0	25	0
Lane Group Flow (vph)	0	355	0	0	251	281	0	65	0	0	535	0
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2		2	4			8		
Actuated Green, G (s)		19.4			19.4	19.4		22.6			22.6	
Effective Green, g (s)		19.4			19.4	19.4		22.6			22.6	
Actuated g/C Ratio		0.39			0.39	0.39		0.45			0.45	
Clearance Time (s)		4.0			4.0	4.0		4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		978			712	614		670			606	
v/s Ratio Prot												
v/s Ratio Perm		0.14			0.14	c0.18		0.04			c0.40	
v/c Ratio		0.36			0.35	0.46		0.10			0.88	
Uniform Delay, d1		10.9			10.8	11.4		7.8			12.5	
Progression Factor		1.00			1.00	1.00		1.00			1.00	
Incremental Delay, d2		1.0			1.4	2.4		0.1			14.2	
Delay (s)		11.9			12.2	13.8		7.9			26.7	
Level of Service		B			B	B		A			C	
Approach Delay (s)		11.9			13.4			7.9			26.7	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3500		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3500		1770	3539	1583	1770	3539	1583
Volume (vph)	192	734	80	165	901	72	196	839	160	83	829	120
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	209	798	87	179	979	78	213	912	174	90	901	130
RTOR Reduction (vph)	0	0	43	0	6	0	0	0	42	0	0	37
Lane Group Flow (vph)	209	798	44	179	1051	0	213	912	132	90	901	93
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	14.3	39.0	39.0	10.0	34.7		11.0	29.0	29.0	6.0	24.0	24.0
Effective Green, g (s)	14.3	39.0	39.0	10.0	34.7		11.0	29.0	29.0	6.0	24.0	24.0
Actuated g/C Ratio	0.14	0.39	0.39	0.10	0.35		0.11	0.29	0.29	0.06	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	253	727	617	177	1215		195	1026	459	106	849	380
v/s Ratio Prot	c0.12	c0.43		c0.10	0.30		c0.12	0.26		0.05	c0.25	
v/s Ratio Perm			0.03						0.08			0.06
v/c Ratio	0.83	1.10	0.07	1.01	0.87		1.09	0.89	0.29	0.85	1.06	0.24
Uniform Delay, d1	41.6	30.5	19.1	45.0	30.5		44.5	34.0	27.5	46.6	38.0	30.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.3	63.3	0.0	70.6	6.6		91.3	9.5	0.3	43.4	48.5	0.3
Delay (s)	60.9	93.8	19.2	115.6	37.1		135.8	43.5	27.8	89.9	86.5	31.0
Level of Service	E	F	B	F	D		F	D	C	F	F	C
Approach Delay (s)		81.6			48.5			56.5			80.3	
Approach LOS		F			D			E			F	

Intersection Summary			
HCM Average Control Delay	65.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	41	25	6	4	60	121	12	261	2	105	310	59
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	27	7	4	65	132	13	284	2	114	337	64

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	78	201	297	2	451	64
Volume Left (vph)	45	4	13	0	114	0
Volume Right (vph)	7	132	0	2	0	64
Hadj (s)	0.10	-0.35	0.06	-0.67	0.16	-0.67
Departure Headway (s)	6.7	5.9	6.2	5.4	6.0	5.2
Degree Utilization, x	0.14	0.33	0.51	0.00	0.75	0.09
Capacity (veh/h)	466	545	551	618	586	671
Control Delay (s)	10.8	11.8	14.2	7.3	23.6	7.5
Approach Delay (s)	10.8	11.8	14.1		21.6	
Approach LOS	B	B	B		C	

Intersection Summary			
Delay	17.0		
HCM Level of Service	C		
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Volume (vph)	835	275	503	1478	122	292
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	908	299	547	1607	133	317
RTOR Reduction (vph)	0	211	0	0	0	250
Lane Group Flow (vph)	908	88	547	1607	133	67
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	23.5	23.5	27.5	55.0	17.0	17.0
Effective Green, g (s)	23.5	23.5	27.5	55.0	17.0	17.0
Actuated g/C Ratio	0.29	0.29	0.34	0.69	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1040	465	608	2433	376	336
v/s Ratio Prot	c0.26		c0.31	0.45	c0.08	
v/s Ratio Perm		0.06				0.04
v/c Ratio	0.87	0.19	0.90	0.66	0.35	0.20
Uniform Delay, d1	26.8	21.1	24.9	7.2	26.8	25.9
Progression Factor	1.00	1.00	1.49	0.85	1.00	1.00
Incremental Delay, d2	8.2	0.2	8.3	0.3	2.6	1.3
Delay (s)	35.1	21.3	45.4	6.4	29.4	27.2
Level of Service	D	C	D	A	C	C
Approach Delay (s)	31.7			16.3	27.9	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	45	1313	52	432	1752	292	225	332	45	46	637	892
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	1427	57	470	1904	317	245	361	49	50	692	970
RTOR Reduction (vph)	0	0	18	0	0	80	0	0	32	0	0	219
Lane Group Flow (vph)	49	1427	39	470	1904	237	245	361	17	50	692	751
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	3.2	35.8	35.8	21.0	53.6	53.6	11.0	40.9	40.9	6.3	36.2	36.2
Effective Green, g (s)	3.2	35.8	35.8	21.0	53.6	53.6	11.0	40.9	40.9	6.3	36.2	36.2
Actuated g/C Ratio	0.03	0.30	0.30	0.18	0.45	0.45	0.09	0.34	0.34	0.05	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	47	1056	472	310	1581	707	162	1206	540	93	1068	478
v/s Ratio Prot	0.03	c0.40		c0.27	0.54		c0.14	0.10		0.03	0.20	
v/s Ratio Perm			0.02			0.15			0.01			c0.47
v/c Ratio	1.04	1.35	0.08	1.52	1.20	0.34	1.51	0.30	0.03	0.54	0.65	1.57
Uniform Delay, d1	58.4	42.1	30.3	49.5	33.2	21.6	54.5	29.0	26.3	55.4	36.4	41.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	144.0	164.4	0.1	248.2	98.2	0.3	259.7	0.6	0.1	5.9	3.0	266.7
Delay (s)	202.4	206.5	30.4	297.7	131.4	21.9	314.2	29.7	26.5	61.3	39.4	308.6
Level of Service	F	F	C	F	F	C	F	C	C	E	D	F
Approach Delay (s)		199.8			147.6			135.8			192.6	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	170.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	114.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	291	1712	153	205	1818	253	277	813	151	473	456	170
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	316	1861	166	223	1976	275	301	884	164	514	496	185
RTOR Reduction (vph)	0	0	49	0	0	72	0	0	57	0	0	136
Lane Group Flow (vph)	316	1861	117	223	1976	203	301	884	107	514	496	49
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	43.0	43.0	8.0	41.0	41.0	13.7	27.0	27.0	16.0	29.3	29.3
Effective Green, g (s)	10.0	43.0	43.0	8.0	41.0	41.0	13.7	27.0	27.0	16.0	29.3	29.3
Actuated g/C Ratio	0.09	0.39	0.39	0.07	0.37	0.37	0.12	0.25	0.25	0.15	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	312	1988	619	250	1895	590	428	869	389	499	943	422
v/s Ratio Prot	0.09	c0.37		0.06	c0.39		0.09	c0.25		c0.15	0.14	
v/s Ratio Perm			0.07			0.13			0.07			0.03
v/c Ratio	1.01	0.94	0.19	0.89	1.04	0.34	0.70	1.02	0.27	1.03	0.53	0.12
Uniform Delay, d1	50.0	32.2	22.0	50.6	34.5	24.8	46.2	41.5	33.6	47.0	34.4	30.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	54.2	9.0	0.1	30.2	32.8	0.4	5.2	34.9	1.7	48.2	2.1	0.6
Delay (s)	104.2	41.2	22.2	80.8	67.3	25.2	51.4	76.4	35.3	95.2	36.5	31.1
Level of Service	F	D	C	F	E	C	D	E	D	F	D	C
Approach Delay (s)		48.3			63.8			65.8			60.9	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	58.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95	0.88	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.96	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1691	2787	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.96	1.00	0.55		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1691	2787	1978		1583
Volume (vph)	245	1115	0	0	929	698	589	21	841	200	0	376
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	1212	0	0	1010	759	640	23	914	217	0	409
RTOR Reduction (vph)	0	0	0	0	0	189	0	0	75	0	0	204
Lane Group Flow (vph)	266	1212	0	0	1010	570	323	340	839	217	0	205
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	17.0	59.0			38.0	38.0	33.0	33.0	33.0	16.0		16.0
Effective Green, g (s)	17.0	59.0			38.0	38.0	33.0	33.0	33.0	16.0		16.0
Actuated g/C Ratio	0.14	0.49			0.32	0.32	0.28	0.28	0.28	0.13		0.13
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	251	1740			1121	501	462	465	766	264		211
v/s Ratio Prot	c0.15	0.34			0.29		0.19	0.20				
v/s Ratio Perm						c0.36			c0.30	0.11		c0.13
v/c Ratio	1.06	0.70			0.90	1.14	0.70	0.73	1.09	0.82		0.97
Uniform Delay, d1	51.5	23.6			39.2	41.0	39.0	39.5	43.5	50.6		51.8
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	73.5	1.2			10.0	84.2	8.5	9.7	61.5	24.2		55.4
Delay (s)	125.0	24.8			49.2	125.2	47.6	49.2	105.0	74.8		107.2
Level of Service	F	C			D	F	D	D	F	E		F
Approach Delay (s)		42.8			81.8			81.2			95.9	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	72.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

2012 BASELINE PLUS PROJECT PHASES 1 & 2 TRAFFIC CONDITION

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1794	1863	1583	3433	1583
Flt Permitted		0.78	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1459	1863	1583	3433	1583
Volume (vph)	111	34	13	635	1195	162
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	121	37	14	690	1299	176
RTOR Reduction (vph)	0	0	0	455	0	88
Lane Group Flow (vph)	0	158	14	235	1299	88
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)		17.0	17.0	17.0	25.0	25.0
Effective Green, g (s)		17.0	17.0	17.0	25.0	25.0
Actuated g/C Ratio		0.34	0.34	0.34	0.50	0.50
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		496	633	538	1717	792
v/s Ratio Prot			0.01			
v/s Ratio Perm		0.11		c0.15	c0.38	0.06
v/c Ratio		0.32	0.02	0.44	0.76	0.11
Uniform Delay, d1		12.2	11.0	12.8	10.1	6.6
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.7	0.1	2.6	2.0	0.1
Delay (s)		13.9	11.0	15.3	12.0	6.7
Level of Service		B	B	B	B	A
Approach Delay (s)		13.9	15.3		11.4	
Approach LOS		B	B		B	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Volume (vph)	59	1010	808	0	0	1476
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	1098	878	0	0	1604
RTOR Reduction (vph)	0	304	0	0	0	0
Lane Group Flow (vph)	64	794	878	0	0	1604
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	26.0	26.0	86.0			86.0
Effective Green, g (s)	26.0	26.0	86.0			86.0
Actuated g/C Ratio	0.22	0.22	0.72			0.72
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	384	604	1335			1335
v/s Ratio Prot	0.04		0.47			c0.86
v/s Ratio Perm		c0.28				
v/c Ratio	0.17	1.31	0.66			1.20
Uniform Delay, d1	38.2	47.0	9.1			17.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.9	153.1	1.2			98.1
Delay (s)	39.1	200.1	10.3			115.1
Level of Service	D	F	B			F
Approach Delay (s)	191.3		10.3			115.1
Approach LOS	F		B			F

Intersection Summary			
HCM Average Control Delay	114.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Volume (vph)	436	138	337	116	213	129	189	1348	198	200	1085	655
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	474	150	366	126	232	140	205	1465	215	217	1179	712
RTOR Reduction (vph)	0	0	128	0	0	119	0	0	145	0	0	266
Lane Group Flow (vph)	474	150	239	126	232	21	205	1465	70	217	1179	446
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	12.0	20.0	20.0	4.0	12.0	12.0	8.8	26.0	26.0	14.0	31.2	31.2
Effective Green, g (s)	12.0	20.0	20.0	4.0	12.0	12.0	8.8	26.0	26.0	14.0	31.2	31.2
Actuated g/C Ratio	0.15	0.25	0.25	0.05	0.15	0.15	0.11	0.32	0.32	0.18	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	515	885	396	172	531	237	378	1653	514	310	1380	617
v/s Ratio Prot	c0.14	0.04		0.04	0.07		0.06	0.29		c0.12	c0.33	
v/s Ratio Perm			c0.15			0.01			0.04			0.28
v/c Ratio	0.92	0.17	0.60	0.73	0.44	0.09	0.54	0.89	0.14	0.70	0.85	0.72
Uniform Delay, d1	33.5	23.5	26.5	37.5	30.9	29.3	33.7	25.6	19.1	31.0	22.3	20.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.9	0.1	2.6	14.9	0.6	0.2	1.6	7.4	0.6	7.0	6.9	7.2
Delay (s)	55.4	23.6	29.1	52.3	31.5	29.5	35.3	33.0	19.6	38.0	29.2	27.9
Level of Service	E	C	C	D	C	C	D	C	B	D	C	C
Approach Delay (s)		40.8			36.2			31.7			29.7	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	33.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection has too many legs for HCM analysis.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	300	1021	578	121	1483	190	477	67	202	181	73	318
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	1110	628	132	1612	207	518	73	220	197	79	346
RTOR Reduction (vph)	0	0	397	0	0	107	0	0	139	0	0	130
Lane Group Flow (vph)	326	1110	231	132	1612	100	518	73	81	197	79	216
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	33.1	33.1	6.9	30.0	30.0	16.0	25.3	25.3	8.7	18.0	18.0
Effective Green, g (s)	10.0	33.1	33.1	6.9	30.0	30.0	16.0	25.3	25.3	8.7	18.0	18.0
Actuated g/C Ratio	0.11	0.37	0.37	0.08	0.33	0.33	0.18	0.28	0.28	0.10	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	381	1870	582	263	1695	528	610	524	445	332	373	317
v/s Ratio Prot	c0.09	c0.22		0.04	c0.32		c0.15	0.04		0.06	0.04	
v/s Ratio Perm			0.15			0.06			0.05			c0.14
v/c Ratio	0.86	0.59	0.40	0.50	0.95	0.19	0.85	0.14	0.18	0.59	0.21	0.68
Uniform Delay, d1	39.3	23.0	21.1	39.9	29.3	21.4	35.8	24.2	24.5	39.0	30.1	33.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.9	0.5	0.4	1.5	12.2	0.2	13.8	0.6	0.9	2.8	0.3	6.0
Delay (s)	56.2	23.5	21.5	41.4	41.5	21.5	49.6	24.8	25.4	41.8	30.4	39.3
Level of Service	E	C	C	D	D	C	D	C	C	D	C	D
Approach Delay (s)		28.1			39.4			40.8			39.0	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	35.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1656		3433	1719	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1656		3433	1719	
Volume (vph)	76	1119	26	169	1380	12	57	41	119	22	147	156
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	1216	28	184	1500	13	62	45	129	24	160	170
RTOR Reduction (vph)	0	0	17	0	0	8	0	88	0	0	44	0
Lane Group Flow (vph)	83	1216	11	184	1500	5	62	86	0	24	286	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	4.0	30.5	30.5	6.0	32.5	32.5	4.6	25.5		2.0	22.9	
Effective Green, g (s)	4.0	30.5	30.5	6.0	32.5	32.5	4.6	25.5		2.0	22.9	
Actuated g/C Ratio	0.05	0.38	0.38	0.08	0.41	0.41	0.06	0.32		0.02	0.29	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	89	1939	604	257	2066	643	197	528		86	492	
v/s Ratio Prot	0.05	0.24		c0.05	c0.29		c0.02	c0.05		0.01	c0.17	
v/s Ratio Perm			0.01			0.00						
v/c Ratio	0.93	0.63	0.02	0.72	0.73	0.01	0.31	0.16		0.28	0.58	
Uniform Delay, d1	37.9	20.1	15.4	36.2	20.0	14.1	36.2	19.6		38.3	24.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	73.0	0.6	0.0	8.9	1.3	0.0	0.9	0.7		1.8	4.9	
Delay (s)	110.8	20.8	15.4	45.1	21.3	14.2	37.1	20.2		40.1	29.4	
Level of Service	F	C	B	D	C	B	D	C		D	C	
Approach Delay (s)		26.3			23.8			24.7			30.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.91		1.00	0.91		1.00
Frt	1.00		1.00	1.00		0.86
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5085		1770	5085		1611
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5085		1770	5085		1611
Volume (vph)	1287	0	266	1426	0	162
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1399	0	289	1550	0	176
RTOR Reduction (vph)	0	0	0	0	0	9
Lane Group Flow (vph)	1399	0	289	1550	0	167
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	20.7		11.3	40.0		11.3
Effective Green, g (s)	20.7		11.3	40.0		11.3
Actuated g/C Ratio	0.52		0.28	1.00		0.28
Clearance Time (s)	4.0		4.0	3.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	2631		500	5085		455
v/s Ratio Prot	c0.28		c0.16	0.30		0.10
v/s Ratio Perm						
v/c Ratio	0.53		0.58	0.30		0.37
Uniform Delay, d1	6.4		12.3	0.0		11.5
Progression Factor	1.31		1.00	1.00		1.00
Incremental Delay, d2	0.2		1.6	0.0		0.5
Delay (s)	8.6		13.9	0.0		12.0
Level of Service	A		B	A		B
Approach Delay (s)	8.6			2.2	12.0	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1609		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1609		3433	1863	1583
Volume (vph)	7	1350	92	126	1616	100	139	32	320	177	68	28
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	1467	100	137	1757	109	151	35	348	192	74	30
RTOR Reduction (vph)	0	0	58	0	0	35	0	76	0	0	0	23
Lane Group Flow (vph)	8	1467	42	137	1757	74	151	307	0	192	74	7
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	37.5	37.5	6.9	43.6	43.6	8.5	20.4		9.2	21.1	21.1
Effective Green, g (s)	0.8	37.5	37.5	6.9	43.6	43.6	8.5	20.4		9.2	21.1	21.1
Actuated g/C Ratio	0.01	0.42	0.42	0.08	0.48	0.48	0.09	0.23		0.10	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	31	2119	660	263	2463	767	324	365		351	437	371
v/s Ratio Prot	0.00	0.29		c0.04	c0.35		0.04	c0.19		c0.06	0.04	
v/s Ratio Perm			0.03			0.05						0.00
v/c Ratio	0.26	0.69	0.06	0.52	0.71	0.10	0.47	0.84		0.55	0.17	0.02
Uniform Delay, d1	44.3	21.5	15.7	40.0	18.3	12.5	38.6	33.3		38.4	27.5	26.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.4	1.0	0.0	1.9	1.0	0.1	1.1	20.4		1.7	0.8	0.1
Delay (s)	48.7	22.5	15.8	41.8	19.3	12.6	39.7	53.6		40.2	28.3	26.6
Level of Service	D	C	B	D	B	B	D	D		D	C	C
Approach Delay (s)		22.2			20.5			49.7			35.8	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	288	1390	184	95	1366	271	167	284	154	503	416	302
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	313	1511	200	103	1485	295	182	309	167	547	452	328
RTOR Reduction (vph)	0	0	101	0	0	159	0	0	94	0	0	93
Lane Group Flow (vph)	313	1511	99	103	1485	136	182	309	73	547	452	235
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	30.6	30.6	3.2	25.8	25.8	6.0	16.2	16.2	14.0	24.2	24.2
Effective Green, g (s)	8.0	30.6	30.6	3.2	25.8	25.8	6.0	16.2	16.2	14.0	24.2	24.2
Actuated g/C Ratio	0.10	0.38	0.38	0.04	0.32	0.32	0.08	0.20	0.20	0.18	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1945	605	137	1640	511	257	717	321	601	1071	479
v/s Ratio Prot	c0.09	0.30		0.03	c0.29		0.05	0.09		c0.16	0.13	
v/s Ratio Perm			0.06			0.09			0.05			c0.15
v/c Ratio	0.91	0.78	0.16	0.75	0.91	0.27	0.71	0.43	0.23	0.91	0.42	0.49
Uniform Delay, d1	35.7	21.7	16.3	38.0	25.9	20.1	36.1	27.9	26.7	32.4	22.3	22.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.6	2.0	0.1	20.5	7.5	0.3	8.6	1.9	1.6	18.0	1.2	3.6
Delay (s)	63.2	23.7	16.4	58.5	33.4	20.4	44.8	29.8	28.3	50.4	23.5	26.4
Level of Service	E	C	B	E	C	C	D	C	C	D	C	C
Approach Delay (s)		29.1			32.8			33.5			35.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.76		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		3539		2736		1583
Volume (vph)	2	2038	1	2	1730	58	0	1	0	58	0	2
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	2215	1	2	1880	63	0	1	0	63	0	2
RTOR Reduction (vph)	0	0	0	0	0	21	0	0	0	0	0	2
Lane Group Flow (vph)	2	2215	1	2	1880	42	0	1	0	63	0	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		6
Actuated Green, G (s)	1.1	40.4	40.4	1.1	40.4	40.4		6.5		6.5		6.5
Effective Green, g (s)	1.1	40.4	40.4	1.1	40.4	40.4		6.5		6.5		6.5
Actuated g/C Ratio	0.02	0.67	0.67	0.02	0.67	0.67		0.11		0.11		0.11
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	63	3424	1066	63	3424	1066		383		296		171
v/s Ratio Prot	c0.00	c0.44		0.00	0.37			0.00				
v/s Ratio Perm			0.00			0.03				c0.02		0.00
v/c Ratio	0.03	0.65	0.00	0.03	0.55	0.04		0.00		0.21		0.00
Uniform Delay, d1	28.9	5.7	3.2	28.9	5.1	3.3		23.9		24.4		23.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2	0.2	0.4	0.0	0.2	0.2	0.0		0.0		0.4		0.0
Delay (s)	29.1	6.1	3.2	29.1	5.3	3.3		23.9		24.8		23.9
Level of Service	C	A	A	C	A	A		C		C		C
Approach Delay (s)		6.1			5.2			23.9			24.7	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	83	1827	242	378	1474	26	195	102	433	69	100	53
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	1986	263	411	1602	28	212	111	471	75	109	58
RTOR Reduction (vph)	0	0	100	0	0	9	0	0	172	0	0	48
Lane Group Flow (vph)	90	1986	163	411	1602	19	212	111	299	75	109	10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.6	36.8	36.8	11.0	40.2	40.2	11.0	22.2	22.2	4.0	15.2	15.2
Effective Green, g (s)	7.6	36.8	36.8	11.0	40.2	40.2	11.0	22.2	22.2	4.0	15.2	15.2
Actuated g/C Ratio	0.08	0.41	0.41	0.12	0.45	0.45	0.12	0.25	0.25	0.04	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	149	2079	647	420	2271	707	216	460	390	79	315	267
v/s Ratio Prot	0.05	c0.39		c0.12	c0.32		c0.12	0.06		0.04	0.06	
v/s Ratio Perm			0.10			0.01			c0.19			0.01
v/c Ratio	0.60	0.96	0.25	0.98	0.71	0.03	0.98	0.24	0.77	0.95	0.35	0.04
Uniform Delay, d1	39.7	25.8	17.5	39.4	20.1	13.9	39.4	27.2	31.5	42.9	33.0	31.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	11.0	0.2	37.8	1.0	0.0	55.7	1.2	13.5	83.1	3.0	0.3
Delay (s)	46.5	36.8	17.7	77.2	21.1	14.0	95.1	28.4	45.0	126.0	36.0	31.5
Level of Service	D	D	B	E	C	B	F	C	D	F	D	C
Approach Delay (s)		35.0			32.3			56.0			62.8	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM Average Control Delay	38.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	128	2382	78	238	1651	259	155	143	275	232	167	163
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	139	2589	85	259	1795	282	168	155	299	252	182	177
RTOR Reduction (vph)	0	0	8	0	0	99	0	0	118	0	0	140
Lane Group Flow (vph)	139	2589	77	259	1795	183	168	155	181	252	182	37
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.1	60.0	60.0	9.0	58.9	58.9	9.6	21.3	21.3	13.7	25.4	25.4
Effective Green, g (s)	10.1	60.0	60.0	9.0	58.9	58.9	9.6	21.3	21.3	13.7	25.4	25.4
Actuated g/C Ratio	0.08	0.50	0.50	0.08	0.49	0.49	0.08	0.18	0.18	0.11	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	289	2543	792	257	2496	777	275	628	281	392	749	335
v/s Ratio Prot	0.04	c0.51		c0.08	0.35		0.05	0.04		c0.07	0.05	
v/s Ratio Perm			0.05			0.12			c0.11			0.02
v/c Ratio	0.48	1.02	0.10	1.01	0.72	0.24	0.61	0.25	0.64	0.64	0.24	0.11
Uniform Delay, d1	52.4	30.0	15.8	55.5	24.0	17.6	53.4	42.5	45.8	50.8	39.3	38.2
Progression Factor	1.00	1.00	1.00	0.90	1.08	1.94	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	22.5	0.1	43.7	0.6	0.1	4.0	0.9	10.8	3.6	0.8	0.7
Delay (s)	53.7	52.5	15.8	93.7	26.5	34.2	57.4	43.4	56.6	54.4	40.1	38.9
Level of Service	D	D	B	F	C	C	E	D	E	D	D	D
Approach Delay (s)		51.5			34.9			53.5			45.6	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	45.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	67	2827	191	352	2226	137	101	81	326	261	107	54
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	3073	208	383	2420	149	110	88	354	284	116	59
RTOR Reduction (vph)	0	0	49	0	0	32	0	0	8	0	0	46
Lane Group Flow (vph)	73	3073	159	383	2420	117	110	88	346	284	116	13
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	59.8	59.8	11.0	67.6	67.6	7.7	17.2	28.2	16.0	25.5	25.5
Effective Green, g (s)	3.2	59.8	59.8	11.0	67.6	67.6	7.7	17.2	28.2	16.0	25.5	25.5
Actuated g/C Ratio	0.03	0.50	0.50	0.09	0.56	0.56	0.06	0.14	0.24	0.13	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	92	2534	789	315	2865	892	220	507	425	236	1081	336
v/s Ratio Prot	0.02	c0.60		c0.11	0.48		0.03	0.02	c0.07	c0.16	0.02	
v/s Ratio Perm			0.10			0.07			0.14			0.01
v/c Ratio	0.79	1.21	0.20	1.22	0.84	0.13	0.50	0.17	0.81	1.20	0.11	0.04
Uniform Delay, d1	58.1	30.1	16.8	54.5	21.8	12.4	54.3	45.2	43.4	52.0	38.1	37.5
Progression Factor	1.13	0.50	0.39	1.04	0.72	0.84	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.4	97.4	0.1	100.0	0.2	0.0	1.8	0.7	11.3	124.7	0.2	0.2
Delay (s)	82.8	112.5	6.5	156.8	15.9	10.4	56.1	45.9	54.7	176.7	38.3	37.7
Level of Service	F	F	A	F	B	B	E	D	D	F	D	D
Approach Delay (s)		105.3			33.9			53.6			123.8	
Approach LOS		F			C			D			F	

Intersection Summary			
HCM Average Control Delay	73.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Volume (vph)	1004	2261	117	257	1534	392	165	844	229	181	775	857
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1091	2458	127	279	1667	426	179	917	249	197	842	932
RTOR Reduction (vph)	0	0	36	0	0	76	0	0	118	0	0	0
Lane Group Flow (vph)	1091	2458	91	279	1667	350	179	917	131	197	842	932
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	35.0	61.0	61.0	10.0	36.0	36.0	6.0	26.0	26.0	7.0	27.0	62.0
Effective Green, g (s)	35.0	61.0	61.0	10.0	36.0	36.0	6.0	26.0	26.0	7.0	27.0	62.0
Actuated g/C Ratio	0.29	0.51	0.51	0.08	0.30	0.30	0.05	0.22	0.22	0.06	0.22	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1001	2585	805	286	1526	475	172	1102	343	200	796	871
v/s Ratio Prot	c0.32	0.48		0.08	c0.33		0.05	0.18		c0.06	0.24	c0.31
v/s Ratio Perm			0.06			0.22			0.08			0.28
v/c Ratio	1.09	0.95	0.11	0.98	1.09	0.74	1.04	0.83	0.38	0.98	1.06	1.07
Uniform Delay, d1	42.5	28.1	15.4	54.9	42.0	37.8	57.0	44.9	40.1	56.4	46.5	29.0
Progression Factor	1.08	0.48	0.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	42.3	1.1	0.0	46.1	52.6	5.9	79.8	7.4	3.2	58.9	48.3	50.8
Delay (s)	88.1	14.6	0.7	101.0	94.6	43.7	136.8	52.3	43.3	115.3	94.8	79.8
Level of Service	F	B	A	F	F	D	F	D	D	F	F	E
Approach Delay (s)		36.0			86.2			61.9			89.8	
Approach LOS		D			F			E			F	

Intersection Summary			
HCM Average Control Delay	63.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	97.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	242	2103	146	114	1792	249	119	269	126	229	403	263
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	263	2286	159	124	1948	271	129	292	137	249	438	286
RTOR Reduction (vph)	0	0	63	0	0	86	0	0	82	0	0	86
Lane Group Flow (vph)	263	2286	96	124	1948	185	129	292	55	249	438	200
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	37.0	37.0	4.0	34.0	34.0	5.0	17.0	17.0	6.0	18.0	18.0
Effective Green, g (s)	7.0	37.0	37.0	4.0	34.0	34.0	5.0	17.0	17.0	6.0	18.0	18.0
Actuated g/C Ratio	0.09	0.46	0.46	0.05	0.42	0.42	0.06	0.21	0.21	0.08	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	300	2352	732	172	2161	673	215	1081	336	257	1144	356
v/s Ratio Prot	c0.08	c0.45		0.04	0.38		0.04	0.06		c0.07	0.09	
v/s Ratio Perm			0.06			0.12			0.03			c0.13
v/c Ratio	0.88	0.97	0.13	0.72	0.90	0.28	0.60	0.27	0.16	0.97	0.38	0.56
Uniform Delay, d1	36.1	21.0	12.3	37.4	21.4	15.0	36.5	26.3	25.7	36.9	26.3	27.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.7	12.6	0.1	13.8	5.7	0.2	4.7	0.6	1.0	46.9	1.0	6.3
Delay (s)	59.8	33.6	12.4	51.3	27.1	15.2	41.2	26.9	26.7	83.8	27.3	33.8
Level of Service	E	C	B	D	C	B	D	C	C	F	C	C
Approach Delay (s)		34.9			27.0			30.2			43.7	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	33.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			3433	1583
Volume (vph)	923	463	0	0	699	184
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1003	503	0	0	760	200
RTOR Reduction (vph)	0	302	0	0	0	22
Lane Group Flow (vph)	1003	201	0	0	760	178
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	16.0	16.0			16.0	16.0
Effective Green, g (s)	16.0	16.0			16.0	16.0
Actuated g/C Ratio	0.40	0.40			0.40	0.40
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1416	633			1373	633
v/s Ratio Prot	c0.28				c0.22	
v/s Ratio Perm		0.13				0.11
v/c Ratio	0.71	0.32			0.55	0.28
Uniform Delay, d1	10.0	8.2			9.2	8.1
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	1.6	0.3			1.6	1.1
Delay (s)	11.7	8.5			10.9	9.2
Level of Service	B	A			B	A
Approach Delay (s)	10.6			0.0	10.5	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	0.97	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.94		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583		1770	3539	1583	3433	1745		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583		1770	3539	1583	3433	1745		1770	1863
Volume (vph)	97	82	1	33	347	211	65	168	85	62	2	95
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	89	1	36	377	229	71	183	92	67	2	103
RTOR Reduction (vph)	0	0	1	0	0	0	49	0	29	0	0	0
Lane Group Flow (vph)	105	89	0	0	413	229	22	183	130	0	2	103
Turn Type	Prot		Perm	Prot	Prot		Perm	Prot			Prot	
Protected Phases	5	2		1	1	6		7	4		3	8
Permitted Phases			2				6					
Actuated Green, G (s)	6.6	8.0	8.0		16.6	18.0	18.0	6.7	17.3		1.0	11.6
Effective Green, g (s)	6.6	8.0	8.0		16.6	18.0	18.0	6.7	17.3		1.0	11.6
Actuated g/C Ratio	0.11	0.14	0.14		0.28	0.31	0.31	0.11	0.29		0.02	0.20
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	198	481	215		499	1082	484	391	513		30	367
v/s Ratio Prot	0.06	0.03			c0.23	c0.06		c0.05	c0.07		0.00	0.06
v/s Ratio Perm			0.00				0.01					
v/c Ratio	0.53	0.19	0.00		0.83	0.21	0.04	0.47	0.25		0.07	0.28
Uniform Delay, d1	24.7	22.6	22.0		19.8	15.2	14.4	24.4	15.9		28.5	20.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.7	0.2	0.0		10.8	0.1	0.0	0.9	0.3		0.9	0.4
Delay (s)	27.4	22.7	22.0		30.6	15.3	14.4	25.3	16.1		29.4	20.5
Level of Service	C	C	C		C	B	B	C	B		C	C
Approach Delay (s)		25.3				24.1			21.0			20.6
Approach LOS		C				C			C			C

Intersection Summary			
HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	58.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWR
Lane Configurations	
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Volume (vph)	415
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	451
RTOR Reduction (vph)	362
Lane Group Flow (vph)	89
Turn Type	Perm
Protected Phases	
Permitted Phases	8
Actuated Green, G (s)	11.6
Effective Green, g (s)	11.6
Actuated g/C Ratio	0.20
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	312
v/s Ratio Prot	
v/s Ratio Perm	0.06
v/c Ratio	0.28
Uniform Delay, d1	20.1
Progression Factor	1.00
Incremental Delay, d2	0.5
Delay (s)	20.6
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	39	299	290	48	186	247
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	42	325	315	52	202	268

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	42	325	367	471
Volume Left (vph)	42	0	0	202
Volume Right (vph)	0	325	52	0
Hadj (s)	0.53	-0.67	-0.05	0.12
Departure Headway (s)	7.3	6.1	5.8	5.8
Degree Utilization, x	0.09	0.55	0.59	0.76
Capacity (veh/h)	463	546	584	607
Control Delay (s)	9.8	15.2	16.8	24.5
Approach Delay (s)	14.6		16.8	24.5
Approach LOS	B		C	C

Intersection Summary			
Delay	19.2		
HCM Level of Service	C		
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	132	23	6	36	162	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	143	25	7	39	176	113

Direction, Lane #	SE 1	SE 2	NE 1	NE 2	SW 1	SW 2
Volume Total (vph)	143	25	7	39	176	113
Volume Left (vph)	0	0	7	0	176	0
Volume Right (vph)	0	25	0	39	0	0
Hadj (s)	0.03	-0.67	0.53	-0.67	0.53	0.03
Departure Headway (s)	4.9	4.2	6.1	4.9	5.3	4.8
Degree Utilization, x	0.20	0.03	0.01	0.05	0.26	0.15
Capacity (veh/h)	722	832	552	678	666	736
Control Delay (s)	7.9	6.1	7.9	7.0	8.9	7.4
Approach Delay (s)	7.6		7.1		8.3	
Approach LOS	A		A		A	

Intersection Summary			
Delay	8.0		
HCM Level of Service	A		
Intersection Capacity Utilization	22.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	36	191	277	3	10	171
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	208	301	3	11	186
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		915				
pX, platoon unblocked						
vC, conflicting volume	304				483	151
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	304				483	151
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				98	79
cM capacity (veh/h)	1253				496	869

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1	SB 2
Volume Total	39	104	104	151	151	3	11	186
Volume Left	39	0	0	0	0	0	11	0
Volume Right	0	0	0	0	0	3	0	186
cSH	1253	1700	1700	1700	1700	1700	496	869
Volume to Capacity	0.03	0.06	0.06	0.09	0.09	0.00	0.02	0.21
Queue Length 95th (ft)	2	0	0	0	0	0	2	20
Control Delay (s)	8.0	0.0	0.0	0.0	0.0	0.0	12.4	10.3
Lane LOS	A						B	B
Approach Delay (s)	1.3			0.0			10.4	
Approach LOS							B	

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	24.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Sign configuration not allowed in HCM analysis.

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	69	4	7	11	5	198	8	587	0	65	315	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	75	4	8	12	5	215	9	638	0	71	342	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1052	1153	357	1149	1167	319	371			638		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1052	1153	357	1149	1167	319	371			638		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	34	98	99	91	97	68	99			92		
cM capacity (veh/h)	113	180	640	140	176	677	1184			942		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	75	4	8	12	5	215	9	319	319	0	71	371
Volume Left	75	0	0	12	0	0	9	0	0	0	71	0
Volume Right	0	0	8	0	0	215	0	0	0	0	0	28
cSH	113	180	640	140	176	677	1184	1700	1700	1700	942	1700
Volume to Capacity	0.66	0.02	0.01	0.09	0.03	0.32	0.01	0.19	0.19	0.00	0.08	0.22
Queue Length 95th (ft)	86	2	1	7	2	34	1	0	0	0	6	0
Control Delay (s)	84.8	25.5	10.7	33.2	26.0	12.8	8.1	0.0	0.0	0.0	9.1	0.0
Lane LOS	F	D	B	D	D	B	A				A	
Approach Delay (s)	75.4			14.1			0.1				1.5	
Approach LOS	F			B								

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.91		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1701		1770	1863	1770	1583
Flt Permitted	1.00		0.49	1.00	0.95	1.00
Satd. Flow (perm)	1701		911	1863	1770	1583
Volume (vph)	141	254	583	284	207	260
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	153	276	634	309	225	283
RTOR Reduction (vph)	68	0	0	0	0	237
Lane Group Flow (vph)	361	0	634	309	225	46
Turn Type			Perm			Perm
Protected Phases	6			2	4	
Permitted Phases			2			4
Actuated Green, G (s)	67.4		67.4	67.4	14.6	14.6
Effective Green, g (s)	67.4		67.4	67.4	14.6	14.6
Actuated g/C Ratio	0.75		0.75	0.75	0.16	0.16
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1274		682	1395	287	257
v/s Ratio Prot	0.21			0.17	c0.13	
v/s Ratio Perm			c0.70			0.03
v/c Ratio	0.28		0.93	0.22	0.78	0.18
Uniform Delay, d1	3.6		9.3	3.4	36.2	32.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6		21.0	0.4	13.1	0.3
Delay (s)	4.2		30.3	3.8	49.3	32.9
Level of Service	A		C	A	D	C
Approach Delay (s)	4.2			21.6	40.1	
Approach LOS	A			C	D	

Intersection Summary			
HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0			4.0	
Lane Util. Factor		0.95			1.00	1.00		1.00			1.00	
Frt		0.99			1.00	0.85		0.98			0.96	
Flt Protected		0.99			1.00	1.00		0.98			0.97	
Satd. Flow (prot)		3469			1861	1583		1788			1733	
Flt Permitted		0.70			0.99	1.00		0.82			0.78	
Satd. Flow (perm)		2454			1848	1583		1500			1394	
Volume (vph)	100	240	14	4	196	326	8	8	3	618	18	240
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	261	15	4	213	354	9	9	3	672	20	261
RTOR Reduction (vph)	0	3	0	0	0	259	0	1	0	0	18	0
Lane Group Flow (vph)	0	382	0	0	217	95	0	20	0	0	935	0
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2		2	4			8		
Actuated Green, G (s)		17.3			17.3	17.3		54.7			54.7	
Effective Green, g (s)		17.3			17.3	17.3		54.7			54.7	
Actuated g/C Ratio		0.22			0.22	0.22		0.68			0.68	
Clearance Time (s)		4.0			4.0	4.0		4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		531			400	342		1026			953	
v/s Ratio Prot												
v/s Ratio Perm		c0.16			0.12	0.06		0.01			c0.67	
v/c Ratio		0.72			0.54	0.28		0.02			0.98	
Uniform Delay, d1		29.1			27.8	26.1		4.1			12.2	
Progression Factor		1.00			1.00	1.00		1.00			1.00	
Incremental Delay, d2		8.2			5.2	2.0		0.0			24.5	
Delay (s)		37.2			33.0	28.2		4.1			36.6	
Level of Service		D			C	C		A			D	
Approach Delay (s)		37.2			30.0			4.1			36.6	
Approach LOS		D			C			A			D	

Intersection Summary			
HCM Average Control Delay	34.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Volume (vph)	181	922	85	109	571	99	51	451	86	90	482	72
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	197	1002	92	118	621	108	55	490	93	98	524	78
RTOR Reduction (vph)	0	0	55	0	21	0	0	0	66	0	0	56
Lane Group Flow (vph)	197	1002	37	118	708	0	55	490	27	98	524	22
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	9.5	22.1	22.1	5.0	17.6		2.3	15.6	15.6	4.0	17.3	17.3
Effective Green, g (s)	9.5	22.1	22.1	5.0	17.6		2.3	15.6	15.6	4.0	17.3	17.3
Actuated g/C Ratio	0.15	0.35	0.35	0.08	0.28		0.04	0.25	0.25	0.06	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	268	657	558	141	972		65	881	394	113	976	437
v/s Ratio Prot	c0.11	c0.54		0.07	0.20		0.03	0.14		c0.06	c0.15	
v/s Ratio Perm			0.02						0.02			0.01
v/c Ratio	0.74	1.53	0.07	0.84	0.73		0.85	0.56	0.07	0.87	0.54	0.05
Uniform Delay, d1	25.4	20.3	13.5	28.4	20.4		30.0	20.5	18.0	29.1	19.3	16.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.0	244.0	0.1	32.9	2.8		60.5	0.8	0.1	45.7	0.6	0.0
Delay (s)	35.4	264.3	13.5	61.4	23.2		90.5	21.3	18.1	74.8	19.9	16.7
Level of Service	D	F	B	E	C		F	C	B	E	B	B
Approach Delay (s)		211.5			28.5			26.8			27.2	
Approach LOS		F			C			C			C	

Intersection Summary			
HCM Average Control Delay	95.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	64	32	15	5	17	86	8	408	6	58	219	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	70	35	16	5	18	93	9	443	7	63	238	29

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	121	117	452	7	301	29
Volume Left (vph)	70	5	9	0	63	0
Volume Right (vph)	16	93	0	7	0	29
Hadj (s)	0.07	-0.43	0.04	-0.67	0.14	-0.67
Departure Headway (s)	6.3	5.9	5.7	5.0	6.0	5.2
Degree Utilization, x	0.21	0.19	0.72	0.01	0.50	0.04
Capacity (veh/h)	485	523	610	686	575	654
Control Delay (s)	11.0	10.2	21.0	6.9	13.6	7.2
Approach Delay (s)	11.0	10.2	20.8		13.1	
Approach LOS	B	B	C		B	

Intersection Summary			
Delay	15.9		
HCM Level of Service	C		
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Volume (vph)	973	488	596	882	77	277
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1058	530	648	959	84	301
RTOR Reduction (vph)	0	220	0	0	0	244
Lane Group Flow (vph)	1058	310	648	959	84	57
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	27.2	27.2	33.8	65.0	17.0	17.0
Effective Green, g (s)	27.2	27.2	33.8	65.0	17.0	17.0
Actuated g/C Ratio	0.30	0.30	0.38	0.72	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	563	478	665	2556	334	299
v/s Ratio Prot	c0.57		c0.37	0.27	c0.05	
v/s Ratio Perm		0.20				0.04
v/c Ratio	1.88	0.65	0.97	0.38	0.25	0.19
Uniform Delay, d1	31.4	27.3	27.7	4.8	31.1	30.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	402.4	3.0	28.4	0.1	1.8	1.4
Delay (s)	433.8	30.3	56.0	4.9	32.9	32.1
Level of Service	F	C	E	A	C	C
Approach Delay (s)	299.1			25.5	32.3	
Approach LOS	F			C	C	

Intersection Summary			
HCM Average Control Delay	147.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	98.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Volume (vph)	155	1079	1209	271	163	260
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	1173	1314	295	177	283
RTOR Reduction (vph)	0	0	0	167	0	137
Lane Group Flow (vph)	168	1173	1314	128	177	146
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	5.0	35.0	26.0	26.0	17.0	17.0
Effective Green, g (s)	5.0	35.0	26.0	26.0	17.0	17.0
Actuated g/C Ratio	0.08	0.58	0.43	0.43	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	148	1087	1534	686	502	449
v/s Ratio Prot	0.09	c0.63	0.37		c0.10	
v/s Ratio Perm				0.08		0.09
v/c Ratio	1.14	1.08	0.86	0.19	0.35	0.33
Uniform Delay, d1	27.5	12.5	15.3	10.5	17.1	17.0
Progression Factor	1.00	1.00	1.17	4.39	1.00	1.00
Incremental Delay, d2	114.9	51.3	4.1	0.1	1.9	1.9
Delay (s)	142.4	63.8	22.0	46.1	19.1	18.9
Level of Service	F	E	C	D	B	B
Approach Delay (s)		73.6	26.4		19.0	
Approach LOS		E	C		B	

Intersection Summary			
HCM Average Control Delay	44.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	54	1031	39	383	1163	222	248	464	42	18	375	532
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	1121	42	416	1264	241	270	504	46	20	408	578
RTOR Reduction (vph)	0	0	17	0	0	90	0	0	32	0	0	298
Lane Group Flow (vph)	59	1121	25	416	1264	151	270	504	14	20	408	280
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	7.0	37.8	37.8	27.0	57.8	57.8	18.0	37.2	37.2	2.0	21.2	21.2
Effective Green, g (s)	7.0	37.8	37.8	27.0	57.8	57.8	18.0	37.2	37.2	2.0	21.2	21.2
Actuated g/C Ratio	0.06	0.32	0.32	0.22	0.48	0.48	0.15	0.31	0.31	0.02	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	103	1115	499	398	1705	762	266	1097	491	30	625	280
v/s Ratio Prot	0.03	c0.32		c0.24	0.36		c0.15	0.14		0.01	0.12	
v/s Ratio Perm			0.02			0.10			0.01			c0.18
v/c Ratio	0.57	1.01	0.05	1.05	0.74	0.20	1.02	0.46	0.03	0.67	0.65	1.00
Uniform Delay, d1	55.0	41.1	28.6	46.5	25.1	17.8	51.0	33.3	28.8	58.7	46.0	49.4
Progression Factor	1.03	1.04	1.15	1.07	0.71	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	15.0	0.0	50.6	1.3	0.1	59.1	1.4	0.1	44.1	5.2	53.7
Delay (s)	58.6	57.5	33.0	100.4	19.0	19.1	110.1	34.7	28.9	102.8	51.2	103.1
Level of Service	E	E	C	F	B	B	F	C	C	F	D	F
Approach Delay (s)		56.7			36.6			59.2			82.1	
Approach LOS		E			D			E			F	

Intersection Summary			
HCM Average Control Delay	54.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	108	1273	79	126	1217	135	182	246	67	258	735	152
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	1384	86	137	1323	147	198	267	73	280	799	165
RTOR Reduction (vph)	0	0	60	0	0	103	0	0	53	0	0	117
Lane Group Flow (vph)	117	1384	26	137	1323	44	198	267	20	280	799	48
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	18.1	18.1	3.2	18.1	18.1	5.3	16.3	16.3	6.4	17.4	17.4
Effective Green, g (s)	3.2	18.1	18.1	3.2	18.1	18.1	5.3	16.3	16.3	6.4	17.4	17.4
Actuated g/C Ratio	0.05	0.30	0.30	0.05	0.30	0.30	0.09	0.27	0.27	0.11	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1534	478	183	1534	478	303	961	430	366	1026	459
v/s Ratio Prot	0.03	c0.27		c0.04	0.26		0.06	0.08		c0.08	c0.23	
v/s Ratio Perm			0.02			0.03			0.01			0.03
v/c Ratio	0.64	0.90	0.05	0.75	0.86	0.09	0.65	0.28	0.05	0.77	0.78	0.10
Uniform Delay, d1	27.8	20.1	14.9	28.0	19.8	15.1	26.5	17.2	16.1	26.1	19.5	15.6
Progression Factor	1.08	1.72	2.51	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.8	0.0	15.4	5.3	0.1	5.0	0.7	0.2	9.2	5.8	0.5
Delay (s)	30.6	35.3	37.3	43.4	25.0	15.1	31.5	17.9	16.3	35.3	25.4	16.1
Level of Service	C	D	D	D	C	B	C	B	B	D	C	B
Approach Delay (s)		35.0			25.7			22.7			26.4	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	250	1520	105	150	1048	62	189	431	401	285	533	421
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1652	114	163	1139	67	205	468	436	310	579	458
RTOR Reduction (vph)	0	0	62	0	0	47	0	0	109	0	0	107
Lane Group Flow (vph)	272	1652	52	163	1139	20	205	468	327	310	579	351
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	24.0	24.0	4.0	21.0	21.0	5.0	19.0	19.0	7.0	21.0	21.0
Effective Green, g (s)	7.0	24.0	24.0	4.0	21.0	21.0	5.0	19.0	19.0	7.0	21.0	21.0
Actuated g/C Ratio	0.10	0.34	0.34	0.06	0.30	0.30	0.07	0.27	0.27	0.10	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1743	543	196	1526	475	245	961	430	343	1062	475
v/s Ratio Prot	c0.08	c0.32		0.05	0.22		0.06	0.13		c0.09	0.16	
v/s Ratio Perm			0.03			0.01			0.21			c0.22
v/c Ratio	0.79	0.95	0.10	0.83	0.75	0.04	0.84	0.49	0.76	0.90	0.55	0.74
Uniform Delay, d1	30.8	22.4	15.6	32.7	22.1	17.4	32.1	21.4	23.4	31.2	20.5	22.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.9	11.4	0.1	24.9	2.0	0.0	21.3	1.8	12.0	25.9	2.0	9.9
Delay (s)	42.7	33.8	15.7	57.5	24.1	17.4	53.4	23.2	35.4	57.1	22.5	31.9
Level of Service	D	C	B	E	C	B	D	C	D	E	C	C
Approach Delay (s)		34.0			27.8			33.6			33.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	125	1661	155	163	1164	70	211	563	270	158	439	168
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	1805	168	177	1265	76	229	612	293	172	477	183
RTOR Reduction (vph)	0	0	100	0	0	47	0	0	112	0	0	111
Lane Group Flow (vph)	136	1805	68	177	1265	29	229	612	181	172	477	72
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	24.8	24.8	4.0	24.8	24.8	5.0	15.2	15.2	5.0	15.2	15.2
Effective Green, g (s)	4.0	24.8	24.8	4.0	24.8	24.8	5.0	15.2	15.2	5.0	15.2	15.2
Actuated g/C Ratio	0.06	0.38	0.38	0.06	0.38	0.38	0.08	0.23	0.23	0.08	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	211	1940	604	211	1940	604	264	828	370	264	828	370
v/s Ratio Prot	0.04	c0.35		c0.05	0.25		c0.07	c0.17		0.05	0.13	
v/s Ratio Perm			0.04			0.02			0.11			0.05
v/c Ratio	0.64	0.93	0.11	0.84	0.65	0.05	0.87	0.74	0.49	0.65	0.58	0.19
Uniform Delay, d1	29.8	19.3	13.0	30.2	16.5	12.7	29.7	23.1	21.5	29.2	22.0	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.6	8.6	0.1	24.2	0.8	0.0	24.5	5.9	4.6	5.7	2.9	1.2
Delay (s)	36.4	27.9	13.1	54.4	17.3	12.7	54.2	28.9	26.1	34.8	25.0	21.2
Level of Service	D	C	B	D	B	B	D	C	C	C	C	C
Approach Delay (s)		27.3			21.4			33.3			26.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.89	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3142	
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1260		1583	1770	3142	
Volume (vph)	0	1572	36	146	523	0	21	0	445	150	28	82
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1709	39	159	568	0	23	0	484	163	30	89
RTOR Reduction (vph)	0	0	6	0	0	0	0	0	136	0	59	0
Lane Group Flow (vph)	0	1709	33	159	568	0	23	0	348	163	60	0
Turn Type			Perm	Prot			custom		custom	Prot		
Protected Phases		4		3	8					1	6	
Permitted Phases			4				2		2			
Actuated Green, G (s)		56.0	56.0	11.0	71.0		26.0		26.0	11.0	41.0	
Effective Green, g (s)		56.0	56.0	11.0	71.0		26.0		26.0	11.0	41.0	
Actuated g/C Ratio		0.47	0.47	0.09	0.59		0.22		0.22	0.09	0.34	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1652	739	162	2094		273		343	162	1074	
v/s Ratio Prot		c0.48		c0.09	0.16					c0.09	0.02	
v/s Ratio Perm			0.02				0.02		c0.22			
v/c Ratio		1.03	0.04	0.98	0.27		0.08		1.02	1.01	0.06	
Uniform Delay, d1		32.0	17.4	54.4	11.9		37.5		47.0	54.5	26.5	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		31.6	0.0	64.9	0.1		0.1		52.7	72.3	0.1	
Delay (s)		63.6	17.5	119.3	12.0		37.6		99.7	126.8	26.6	
Level of Service		E	B	F	B		D		F	F	C	
Approach Delay (s)		62.6			35.5			96.9			84.5	
Approach LOS		E			D			F			F	

Intersection Summary			
HCM Average Control Delay	63.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1474	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.55		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1474	1504	1997		1583
Volume (vph)	357	1151	0	0	554	305	274	8	503	187	0	213
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	388	1251	0	0	602	332	298	9	547	203	0	232
RTOR Reduction (vph)	0	0	0	0	0	184	0	74	74	0	0	190
Lane Group Flow (vph)	388	1251	0	0	602	148	252	242	212	203	0	42
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	21.2	42.0			16.8	16.8	19.0	19.0	19.0	16.0		16.0
Effective Green, g (s)	21.2	42.0			16.8	16.8	19.0	19.0	19.0	16.0		16.0
Actuated g/C Ratio	0.24	0.47			0.19	0.19	0.21	0.21	0.21	0.18		0.18
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	422	1670			668	299	359	315	321	359		285
v/s Ratio Prot	c0.22	0.35			c0.17		0.15	c0.16				
v/s Ratio Perm						0.09			0.14	c0.10		0.03
v/c Ratio	0.92	0.75			0.90	0.49	0.70	0.77	0.66	0.57		0.15
Uniform Delay, d1	33.1	19.2			35.3	32.3	32.4	32.9	32.0	33.3		30.7
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	24.8	1.9			15.3	1.3	10.9	16.4	10.2	6.3		1.1
Delay (s)	57.8	21.1			50.6	33.6	43.3	49.3	42.3	39.6		31.8
Level of Service	E	C			D	C	D	D	D	D		C
Approach Delay (s)		29.8			44.6			45.2			35.5	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	37.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1796	1863	1583	3433	1583
Flt Permitted		0.77	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1437	1863	1583	3433	1583
Volume (vph)	106	37	15	861	1960	248
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	40	16	936	2130	270
RTOR Reduction (vph)	0	0	0	708	0	69
Lane Group Flow (vph)	0	155	16	228	2130	201
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)		12.2	12.2	12.2	29.8	29.8
Effective Green, g (s)		12.2	12.2	12.2	29.8	29.8
Actuated g/C Ratio		0.24	0.24	0.24	0.60	0.60
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		351	455	386	2046	943
v/s Ratio Prot			0.01			
v/s Ratio Perm		0.11		c0.14	c0.62	0.13
v/c Ratio		0.44	0.04	0.59	1.04	0.21
Uniform Delay, d1		16.0	14.4	16.7	10.1	4.7
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		4.0	0.1	6.5	31.5	0.1
Delay (s)		20.0	14.6	23.2	41.6	4.8
Level of Service		C	B	C	D	A
Approach Delay (s)		20.0	23.1		37.5	
Approach LOS		C	C		D	

Intersection Summary			
HCM Average Control Delay	32.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Volume (vph)	82	1353	866	0	0	2207
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	1471	941	0	0	2399
RTOR Reduction (vph)	0	269	0	0	0	0
Lane Group Flow (vph)	89	1202	941	0	0	2399
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	26.0	26.0	86.0			86.0
Effective Green, g (s)	26.0	26.0	86.0			86.0
Actuated g/C Ratio	0.22	0.22	0.72			0.72
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	384	604	1335			1335
v/s Ratio Prot	0.05		0.51			c1.29
v/s Ratio Perm		c0.43				
v/c Ratio	0.23	1.99	0.70			1.80
Uniform Delay, d1	38.8	47.0	9.7			17.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	1.4	451.1	1.7			361.7
Delay (s)	40.2	498.1	11.5			378.7
Level of Service	D	F	B			F
Approach Delay (s)	472.0		11.5			378.7
Approach LOS	F		B			F

Intersection Summary			
HCM Average Control Delay	337.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	127.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Volume (vph)	643	255	207	559	243	476	154	1620	497	339	1430	531
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	699	277	225	608	264	517	167	1761	540	368	1554	577
RTOR Reduction (vph)	0	0	85	0	0	204	0	0	247	0	0	208
Lane Group Flow (vph)	699	277	140	608	264	313	167	1761	293	368	1554	369
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	20.0	17.0	17.0	20.0	17.0	17.0	6.0	37.0	37.0	20.0	51.0	51.0
Effective Green, g (s)	20.0	17.0	17.0	20.0	17.0	17.0	6.0	37.0	37.0	20.0	51.0	51.0
Actuated g/C Ratio	0.18	0.15	0.15	0.18	0.15	0.15	0.05	0.34	0.34	0.18	0.46	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	624	547	245	624	547	245	187	1710	532	322	1641	734
v/s Ratio Prot	c0.20	0.08		0.18	0.07		0.05	c0.35		c0.21	0.44	
v/s Ratio Perm			0.09			c0.20			0.19			0.23
v/c Ratio	1.12	0.51	0.57	0.97	0.48	1.28	0.89	1.03	0.55	1.14	0.95	0.50
Uniform Delay, d1	45.0	42.7	43.1	44.7	42.5	46.5	51.7	36.5	29.7	45.0	28.2	20.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	73.8	0.7	3.2	29.4	0.7	153.0	37.3	29.8	4.1	94.7	12.8	2.5
Delay (s)	118.8	43.4	46.4	74.2	43.2	199.5	89.0	66.3	33.8	139.7	41.0	23.1
Level of Service	F	D	D	E	D	F	F	E	C	F	D	C
Approach Delay (s)		87.8			114.9			60.7			51.4	
Approach LOS		F			F			E			D	

Intersection Summary			
HCM Average Control Delay	71.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection has too many legs for HCM analysis.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	441	2038	559	145	1589	138	677	127	145	170	177	386
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	479	2215	608	158	1727	150	736	138	158	185	192	420
RTOR Reduction (vph)	0	0	228	0	0	72	0	0	114	0	0	126
Lane Group Flow (vph)	479	2215	380	158	1727	78	736	138	44	185	192	294
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	33.0	33.0	7.0	30.0	30.0	16.0	25.3	25.3	8.7	18.0	18.0
Effective Green, g (s)	10.0	33.0	33.0	7.0	30.0	30.0	16.0	25.3	25.3	8.7	18.0	18.0
Actuated g/C Ratio	0.11	0.37	0.37	0.08	0.33	0.33	0.18	0.28	0.28	0.10	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	381	1865	580	267	1695	528	610	524	445	332	373	317
v/s Ratio Prot	c0.14	c0.44		0.05	0.34		c0.21	0.07		0.05	0.10	
v/s Ratio Perm			0.24			0.05			0.03			c0.19
v/c Ratio	1.26	1.19	0.66	0.59	1.02	0.15	1.21	0.26	0.10	0.56	0.51	0.93
Uniform Delay, d1	40.0	28.5	23.8	40.1	30.0	21.0	37.0	25.1	23.9	38.8	32.1	35.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	135.5	90.2	2.7	3.5	26.7	0.1	107.8	1.2	0.4	2.0	1.2	32.2
Delay (s)	175.5	118.7	26.4	43.6	56.7	21.2	144.8	26.3	24.4	40.8	33.3	67.6
Level of Service	F	F	C	D	E	C	F	C	C	D	C	E
Approach Delay (s)		109.9			53.1			110.5			53.1	
Approach LOS		F			D			F			D	

Intersection Summary			
HCM Average Control Delay	87.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1776		3433	1720	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1776		3433	1720	
Volume (vph)	180	1745	72	84	1543	28	115	123	55	18	63	65
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	1897	78	91	1677	30	125	134	60	20	68	71
RTOR Reduction (vph)	0	0	43	0	0	16	0	19	0	0	47	0
Lane Group Flow (vph)	196	1897	35	91	1677	14	125	175	0	20	92	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	5.0	36.3	36.3	4.8	36.1	36.1	4.5	21.3		1.6	18.4	
Effective Green, g (s)	5.0	36.3	36.3	4.8	36.1	36.1	4.5	21.3		1.6	18.4	
Actuated g/C Ratio	0.06	0.45	0.45	0.06	0.45	0.45	0.06	0.27		0.02	0.23	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	111	2307	718	206	2295	714	193	473		69	396	
v/s Ratio Prot	c0.11	c0.37		0.03	0.33		c0.04	c0.10		0.01	0.05	
v/s Ratio Perm			0.02			0.01						
v/c Ratio	1.77	0.82	0.05	0.44	0.73	0.02	0.65	0.37		0.29	0.23	
Uniform Delay, d1	37.5	19.0	12.2	36.3	18.0	12.1	37.0	23.9		38.6	25.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	378.6	2.5	0.0	1.5	1.2	0.0	7.3	2.2		2.3	1.4	
Delay (s)	416.1	21.5	12.2	37.8	19.2	12.2	44.3	26.1		41.0	26.4	
Level of Service	F	C	B	D	B	B	D	C		D	C	
Approach Delay (s)		56.8			20.0			33.2			28.3	
Approach LOS		E			B			C			C	

Intersection Summary			
HCM Average Control Delay	39.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.91		1.00	0.91		1.00
Frt	1.00		1.00	1.00		0.86
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5085		1770	5085		1611
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5085		1770	5085		1611
Volume (vph)	1659	0	358	1507	0	512
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1803	0	389	1638	0	557
RTOR Reduction (vph)	0	0	0	0	0	2
Lane Group Flow (vph)	1803	0	389	1638	0	555
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	17.0		15.0	40.0		15.0
Effective Green, g (s)	17.0		15.0	40.0		15.0
Actuated g/C Ratio	0.42		0.38	1.00		0.38
Clearance Time (s)	4.0		4.0	3.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	2161		664	5085		604
v/s Ratio Prot	c0.35		0.22	0.32		c0.34
v/s Ratio Perm						
v/c Ratio	0.83		0.59	0.32		0.92
Uniform Delay, d1	10.2		10.0	0.0		11.9
Progression Factor	1.85		1.00	1.00		1.00
Incremental Delay, d2	1.7		1.3	0.0		19.0
Delay (s)	20.7		11.3	0.0		31.0
Level of Service	C		B	A		C
Approach Delay (s)	20.7			2.2	31.0	
Approach LOS	C			A	C	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1649		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1649		3433	1863	1583
Volume (vph)	9	2050	112	407	1746	214	91	87	284	234	110	28
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	2228	122	442	1898	233	99	95	309	254	120	30
RTOR Reduction (vph)	0	0	61	0	0	57	0	71	0	0	0	25
Lane Group Flow (vph)	10	2228	61	442	1898	176	99	333	0	254	120	5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	45.2	45.2	7.0	51.4	51.4	6.2	15.8		6.0	15.6	15.6
Effective Green, g (s)	0.8	45.2	45.2	7.0	51.4	51.4	6.2	15.8		6.0	15.6	15.6
Actuated g/C Ratio	0.01	0.50	0.50	0.08	0.57	0.57	0.07	0.18		0.07	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	31	2554	795	267	2904	904	236	289		229	323	274
v/s Ratio Prot	0.00	c0.44		c0.13	0.37		0.03	c0.20		c0.07	0.06	
v/s Ratio Perm			0.04			0.11						0.00
v/c Ratio	0.32	0.87	0.08	1.66	0.65	0.19	0.42	1.15		1.11	0.37	0.02
Uniform Delay, d1	44.3	19.8	11.6	41.5	13.2	9.3	40.2	37.1		42.0	32.9	30.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.0	3.6	0.0	311.1	0.5	0.1	1.2	100.7		91.8	3.3	0.1
Delay (s)	50.3	23.4	11.6	352.6	13.7	9.4	41.4	137.8		133.8	36.1	31.0
Level of Service	D	C	B	F	B	A	D	F		F	D	C
Approach Delay (s)		22.9			71.6			118.8			97.2	
Approach LOS		C			E			F			F	

Intersection Summary			
HCM Average Control Delay	57.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	533	1838	193	107	1777	542	205	609	69	573	533	389
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	579	1998	210	116	1932	589	223	662	75	623	579	423
RTOR Reduction (vph)	0	0	83	0	0	247	0	0	49	0	0	88
Lane Group Flow (vph)	579	1998	127	116	1932	342	223	662	26	623	579	335
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	29.0	29.0	4.0	25.0	25.0	6.0	17.0	17.0	14.0	25.0	25.0
Effective Green, g (s)	8.0	29.0	29.0	4.0	25.0	25.0	6.0	17.0	17.0	14.0	25.0	25.0
Actuated g/C Ratio	0.10	0.36	0.36	0.05	0.31	0.31	0.08	0.21	0.21	0.18	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1843	574	172	1589	495	257	752	336	601	1106	495
v/s Ratio Prot	c0.17	c0.39		0.03	c0.38		0.06	c0.19		c0.18	0.16	
v/s Ratio Perm			0.08			0.22			0.02			0.21
v/c Ratio	1.69	1.08	0.22	0.67	1.22	0.69	0.87	0.88	0.08	1.04	0.52	0.68
Uniform Delay, d1	36.0	25.5	17.7	37.4	27.5	24.1	36.6	30.5	25.2	33.0	22.6	24.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	322.0	47.8	0.2	10.0	103.1	4.1	25.1	14.0	0.5	46.5	1.8	7.3
Delay (s)	358.0	73.3	17.9	47.3	130.6	28.3	61.7	44.5	25.7	79.5	24.4	31.2
Level of Service	F	E	B	D	F	C	E	D	C	E	C	C
Approach Delay (s)		128.3			104.1			47.0			47.3	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM Average Control Delay	94.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3614	3008		3614	1863	1583
Volume (vph)	7	2469	1	5	2425	70	2	0	5	70	1	19
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	2684	1	5	2636	76	2	0	5	76	1	21
RTOR Reduction (vph)	0	0	0	0	0	16	0	5	0	0	0	20
Lane Group Flow (vph)	8	2684	1	5	2636	60	2	0	0	76	1	1
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		6
Actuated Green, G (s)	1.2	43.0	43.0	1.2	43.0	43.0	3.8	3.8		3.8	3.8	3.8
Effective Green, g (s)	1.2	43.0	43.0	1.2	43.0	43.0	3.8	3.8		3.8	3.8	3.8
Actuated g/C Ratio	0.02	0.72	0.72	0.02	0.72	0.72	0.06	0.06		0.06	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	69	3644	1134	69	3644	1134	229	191		229	118	100
v/s Ratio Prot	c0.00	c0.53		0.00	0.52			0.00			0.00	
v/s Ratio Perm			0.00			0.04	0.00			c0.02		0.00
v/c Ratio	0.12	0.74	0.00	0.07	0.72	0.05	0.01	0.00		0.33	0.01	0.01
Uniform Delay, d1	28.9	5.1	2.4	28.9	5.0	2.5	26.3	26.3		26.9	26.3	26.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.8	0.8	0.0	0.4	0.7	0.0	0.1	0.0		0.9	0.0	0.1
Delay (s)	29.6	5.9	2.4	29.3	5.7	2.5	26.4	26.3		27.7	26.4	26.4
Level of Service	C	A	A	C	A	A	C	C		C	C	C
Approach Delay (s)		6.0			5.7			26.4			27.4	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	6.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	75	2051	405	526	2080	66	368	102	440	29	89	75
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	2229	440	572	2261	72	400	111	478	32	97	82
RTOR Reduction (vph)	0	0	149	0	0	17	0	0	186	0	0	68
Lane Group Flow (vph)	82	2229	291	572	2261	55	400	111	292	32	97	14
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.5	36.8	36.8	11.0	40.3	40.3	11.0	23.8	23.8	2.4	15.2	15.2
Effective Green, g (s)	7.5	36.8	36.8	11.0	40.3	40.3	11.0	23.8	23.8	2.4	15.2	15.2
Actuated g/C Ratio	0.08	0.41	0.41	0.12	0.45	0.45	0.12	0.26	0.26	0.03	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	148	2079	647	420	2277	709	216	493	419	47	315	267
v/s Ratio Prot	0.05	c0.44		c0.17	c0.44		c0.23	0.06		0.02	0.05	
v/s Ratio Perm			0.18			0.04			c0.18			0.01
v/c Ratio	0.55	1.07	0.45	1.36	0.99	0.08	1.85	0.23	0.70	0.68	0.31	0.05
Uniform Delay, d1	39.6	26.6	19.3	39.5	24.7	14.2	39.5	25.9	29.8	43.4	32.8	31.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	42.3	0.5	177.6	17.1	0.0	400.7	1.1	9.2	33.6	2.5	0.4
Delay (s)	44.1	68.9	19.8	217.1	41.8	14.3	440.2	26.9	39.1	77.1	35.3	31.7
Level of Service	D	E	B	F	D	B	F	C	D	E	D	C
Approach Delay (s)		60.3			75.7			199.9			40.2	
Approach LOS		E			E			F			D	

Intersection Summary			
HCM Average Control Delay	86.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	247	2308	144	351	2430	409	220	266	266	291	246	369
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	2509	157	382	2641	445	239	289	289	316	267	401
RTOR Reduction (vph)	0	0	16	0	0	114	0	0	114	0	0	152
Lane Group Flow (vph)	268	2509	142	382	2641	331	239	289	175	316	267	249
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.2	60.0	60.0	9.0	54.8	54.8	10.0	19.8	19.8	15.2	25.0	25.0
Effective Green, g (s)	14.2	60.0	60.0	9.0	54.8	54.8	10.0	19.8	19.8	15.2	25.0	25.0
Actuated g/C Ratio	0.12	0.50	0.50	0.08	0.46	0.46	0.08	0.16	0.16	0.13	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	406	2543	792	257	2322	723	286	584	261	435	737	330
v/s Ratio Prot	0.08	c0.49		c0.11	c0.52		0.07	0.08		c0.09	0.08	
v/s Ratio Perm			0.09			0.21			0.11			c0.16
v/c Ratio	0.66	0.99	0.18	1.49	1.14	0.46	0.84	0.49	0.67	0.73	0.36	0.75
Uniform Delay, d1	50.6	29.6	16.5	55.5	32.6	22.4	54.2	45.6	47.1	50.4	40.7	44.6
Progression Factor	1.00	1.00	1.00	0.87	1.06	1.45	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	14.7	0.1	220.8	62.4	0.0	18.6	3.0	13.0	6.0	1.4	14.8
Delay (s)	54.6	44.3	16.6	269.0	96.9	32.4	72.8	48.5	60.0	56.4	42.1	59.4
Level of Service	D	D	B	F	F	C	E	D	E	E	D	E
Approach Delay (s)		43.8			107.6			59.7			53.7	
Approach LOS		D			F			E			D	

Intersection Summary			
HCM Average Control Delay	73.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	110	2558	189	311	3090	323	212	153	484	224	161	173
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	2780	205	338	3359	351	230	166	526	243	175	188
RTOR Reduction (vph)	0	0	54	0	0	57	0	0	13	0	0	47
Lane Group Flow (vph)	120	2780	151	338	3359	294	230	166	513	243	175	141
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	59.0	59.0	11.0	66.0	66.0	8.0	18.0	29.0	16.0	26.0	26.0
Effective Green, g (s)	4.0	59.0	59.0	11.0	66.0	66.0	8.0	18.0	29.0	16.0	26.0	26.0
Actuated g/C Ratio	0.03	0.49	0.49	0.09	0.55	0.55	0.07	0.15	0.24	0.13	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2500	778	315	2797	871	229	531	435	236	1102	343
v/s Ratio Prot	0.03	0.55		0.10	c0.66		0.07	0.05	c0.11	c0.14	0.03	
v/s Ratio Perm			0.10			0.19			0.22			0.09
v/c Ratio	1.05	1.11	0.19	1.07	1.20	0.34	1.00	0.31	1.18	1.03	0.16	0.41
Uniform Delay, d1	58.0	30.5	17.1	54.5	27.0	14.9	56.0	45.5	45.5	52.0	38.1	40.4
Progression Factor	1.13	0.50	0.38	1.10	0.50	0.54	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	63.8	52.7	0.0	39.2	90.8	0.0	60.6	1.5	102.3	66.5	0.3	3.6
Delay (s)	129.1	68.1	6.6	99.2	104.3	8.0	116.6	47.0	147.8	118.5	38.4	44.0
Level of Service	F	E	A	F	F	A	F	D	F	F	D	D
Approach Delay (s)		66.4			95.6			121.9			72.3	
Approach LOS		E			F			F			E	

Intersection Summary			
HCM Average Control Delay	86.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	101.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Volume (vph)	1030	2093	79	288	2441	227	186	966	208	324	897	1123
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1120	2275	86	313	2653	247	202	1050	226	352	975	1221
RTOR Reduction (vph)	0	0	27	0	0	52	0	0	133	0	0	1
Lane Group Flow (vph)	1120	2275	60	313	2653	195	202	1050	93	352	975	1220
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	28.0	60.0	60.0	11.0	43.0	43.0	6.0	24.0	24.0	9.0	27.0	55.0
Effective Green, g (s)	28.0	60.0	60.0	11.0	43.0	43.0	6.0	24.0	24.0	9.0	27.0	55.0
Actuated g/C Ratio	0.23	0.50	0.50	0.09	0.36	0.36	0.05	0.20	0.20	0.08	0.22	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	801	2543	792	315	1822	567	172	1017	317	257	796	778
v/s Ratio Prot	0.33	0.45		0.09	c0.52		0.06	0.21		c0.10	0.28	c0.37
v/s Ratio Perm			0.04			0.12			0.06			0.41
v/c Ratio	1.40	0.89	0.08	0.99	1.46	0.34	1.17	1.03	0.29	1.37	1.22	1.57
Uniform Delay, d1	46.0	27.1	15.6	54.5	38.5	28.2	57.0	48.0	40.8	55.5	46.5	32.5
Progression Factor	1.16	0.51	0.11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	179.9	0.4	0.0	48.7	208.3	0.4	123.3	36.9	2.3	189.2	112.3	262.2
Delay (s)	233.4	14.4	1.7	103.2	246.8	28.5	180.3	84.9	43.1	244.7	158.8	294.7
Level of Service	F	B	A	F	F	C	F	F	D	F	F	F
Approach Delay (s)		84.5			216.1			91.6			235.8	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	160.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	132.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	336	2053	389	189	1765	274	234	675	112	301	848	541
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	365	2232	423	205	1918	298	254	734	122	327	922	588
RTOR Reduction (vph)	0	0	114	0	0	95	0	0	81	0	0	80
Lane Group Flow (vph)	365	2232	309	205	1918	203	254	734	41	327	922	508
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	37.0	37.0	4.0	34.0	34.0	5.0	17.0	17.0	6.0	18.0	18.0
Effective Green, g (s)	7.0	37.0	37.0	4.0	34.0	34.0	5.0	17.0	17.0	6.0	18.0	18.0
Actuated g/C Ratio	0.09	0.46	0.46	0.05	0.42	0.42	0.06	0.21	0.21	0.08	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	300	2352	732	172	2161	673	215	1081	336	257	1144	356
v/s Ratio Prot	c0.11	c0.44		0.06	0.38		0.07	0.14		c0.10	0.18	
v/s Ratio Perm			0.19			0.13			0.03			c0.32
v/c Ratio	1.22	0.95	0.42	1.19	0.89	0.30	1.18	0.68	0.12	1.27	0.81	1.43
Uniform Delay, d1	36.5	20.6	14.4	38.0	21.2	15.2	37.5	29.0	25.5	37.0	29.3	31.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	124.0	9.2	0.4	129.6	4.8	0.3	119.0	3.4	0.7	149.4	6.1	208.0
Delay (s)	160.5	29.8	14.7	167.6	26.1	15.4	156.5	32.4	26.2	186.4	35.5	239.0
Level of Service	F	C	B	F	C	B	F	C	C	F	D	F
Approach Delay (s)		43.5			36.8			60.1			127.5	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM Average Control Delay	62.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			3433	1583
Volume (vph)	1071	967	0	0	906	63
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1164	1051	0	0	985	68
RTOR Reduction (vph)	0	620	0	0	0	13
Lane Group Flow (vph)	1164	431	0	0	985	55
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	16.4	16.4			15.6	15.6
Effective Green, g (s)	16.4	16.4			15.6	15.6
Actuated g/C Ratio	0.41	0.41			0.39	0.39
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1451	649			1339	617
v/s Ratio Prot	c0.33				c0.29	
v/s Ratio Perm		0.27				0.03
v/c Ratio	0.80	0.66			0.74	0.09
Uniform Delay, d1	10.4	9.6			10.4	7.7
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	3.3	2.6			3.6	0.3
Delay (s)	13.7	12.1			14.1	8.0
Level of Service	B	B			B	A
Approach Delay (s)	12.9			0.0	13.7	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	0.97	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.90		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583		1770	3539	1583	3433	1674		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583		1770	3539	1583	3433	1674		1770	1863
Volume (vph)	324	355	4	43	116	511	189	332	150	310	2	107
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	352	386	4	47	126	555	205	361	163	337	2	116
RTOR Reduction (vph)	0	0	3	0	0	0	161	0	75	0	0	0
Lane Group Flow (vph)	352	386	1	0	173	555	44	361	425	0	2	116
Turn Type	Prot		Perm	Prot	Prot		Perm	Prot			Prot	
Protected Phases	5	2		1	1	6		7	4		3	8
Permitted Phases			2				6					
Actuated Green, G (s)	18.2	24.5	24.5		10.2	16.5	16.5	15.1	24.8		1.1	10.8
Effective Green, g (s)	18.2	24.5	24.5		10.2	16.5	16.5	15.1	24.8		1.1	10.8
Actuated g/C Ratio	0.24	0.32	0.32		0.13	0.22	0.22	0.20	0.32		0.01	0.14
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	421	1132	506		236	762	341	677	542		25	263
v/s Ratio Prot	c0.20	0.11			0.10	c0.16		c0.11	c0.25		0.00	0.06
v/s Ratio Perm			0.00				0.03					
v/c Ratio	0.84	0.34	0.00		0.73	0.73	0.13	0.53	0.78		0.08	0.44
Uniform Delay, d1	27.8	19.9	17.7		31.9	28.0	24.3	27.6	23.5		37.3	30.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	13.4	0.2	0.0		11.2	3.5	0.2	0.8	7.3		1.4	1.2
Delay (s)	41.2	20.1	17.7		43.0	31.5	24.4	28.4	30.8		38.6	31.3
Level of Service	D	C	B		D	C	C	C	C		D	C
Approach Delay (s)		30.1				32.1			29.8			30.2
Approach LOS		C				C			C			C

Intersection Summary			
HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	76.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWR
Lane Configurations	
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Volume (vph)	81
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	88
RTOR Reduction (vph)	76
Lane Group Flow (vph)	12
Turn Type	Perm
Protected Phases	
Permitted Phases	8
Actuated Green, G (s)	10.8
Effective Green, g (s)	10.8
Actuated g/C Ratio	0.14
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	223
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.06
Uniform Delay, d1	28.5
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	28.6
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	31	128	123	144	176	167
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	139	134	157	191	182

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	34	139	290	373
Volume Left (vph)	34	0	0	191
Volume Right (vph)	0	139	157	0
Hadj (s)	0.53	-0.67	-0.29	0.14
Departure Headway (s)	6.6	5.4	4.6	4.9
Degree Utilization, x	0.06	0.21	0.37	0.50
Capacity (veh/h)	502	607	752	711
Control Delay (s)	8.8	8.6	10.2	12.7
Approach Delay (s)	8.6		10.2	12.7
Approach LOS	A		B	B

Intersection Summary			
Delay	11.0		
HCM Level of Service	B		
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	104	37	86	408	245	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	113	40	93	443	266	123

Direction, Lane #	SE 1	SE 2	NE 1	NE 2	SW 1	SW 2
Volume Total (vph)	113	40	93	443	266	123
Volume Left (vph)	0	0	93	0	266	0
Volume Right (vph)	0	40	0	443	0	0
Hadj (s)	0.03	-0.67	0.53	-0.67	0.53	0.03
Departure Headway (s)	6.7	6.0	6.6	5.4	6.8	6.3
Degree Utilization, x	0.21	0.07	0.17	0.66	0.50	0.21
Capacity (veh/h)	502	555	525	640	510	545
Control Delay (s)	10.2	8.2	9.7	17.2	15.3	9.8
Approach Delay (s)	9.7		15.9		13.5	
Approach LOS	A		C		B	

Intersection Summary			
Delay	14.2		
HCM Level of Service	B		
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	471	854	537	22	7	230
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	512	928	584	24	8	250
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		915				
pX, platoon unblocked						
vC, conflicting volume	608				2072	292
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	608				2072	292
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	47				65	65
cM capacity (veh/h)	967				22	705

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1	SB 2
Volume Total	512	464	464	292	292	24	8	250
Volume Left	512	0	0	0	0	0	8	0
Volume Right	0	0	0	0	0	24	0	250
cSH	967	1700	1700	1700	1700	1700	22	705
Volume to Capacity	0.53	0.27	0.27	0.17	0.17	0.01	0.35	0.35
Queue Length 95th (ft)	80	0	0	0	0	0	25	40
Control Delay (s)	12.8	0.0	0.0	0.0	0.0	0.0	239.7	12.9
Lane LOS	B						F	B
Approach Delay (s)	4.6			0.0			19.6	
Approach LOS							C	

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Sign configuration not allowed in HCM analysis.

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	83	2	3	15	5	95	7	655	0	90	740	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	90	2	3	16	5	103	8	712	0	98	804	52
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1503	1753	830	1732	1779	356	857			712		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1503	1753	830	1732	1779	356	857			712		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	97	99	67	92	84	99			89		
cM capacity (veh/h)	60	74	313	50	72	640	780			884		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	90	2	3	16	5	103	8	356	356	0	98	857
Volume Left	90	0	0	16	0	0	8	0	0	0	98	0
Volume Right	0	0	3	0	0	103	0	0	0	0	0	52
cSH	60	74	313	50	72	640	780	1700	1700	1700	884	1700
Volume to Capacity	1.50	0.03	0.01	0.33	0.08	0.16	0.01	0.21	0.21	0.00	0.11	0.50
Queue Length 95th (ft)	200	2	1	29	6	14	1	0	0	0	9	0
Control Delay (s)	406.9	54.9	16.6	109.6	59.3	11.7	9.7	0.0	0.0	0.0	9.6	0.0
Lane LOS	F	F	C	F	F	B	A				A	
Approach Delay (s)	385.6			26.5			0.1				1.0	
Approach LOS	F			D								

Intersection Summary			
Average Delay	21.8		
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1764		1770	1863	1770	1583
Flt Permitted	1.00		0.34	1.00	0.95	1.00
Satd. Flow (perm)	1764		631	1863	1770	1583
Volume (vph)	384	247	618	282	286	993
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	417	268	672	307	311	1079
RTOR Reduction (vph)	26	0	0	0	0	432
Lane Group Flow (vph)	659	0	672	307	311	647
Turn Type			Perm			Perm
Protected Phases	6			2	4	
Permitted Phases			2			4
Actuated Green, G (s)	66.0		66.0	66.0	16.0	16.0
Effective Green, g (s)	66.0		66.0	66.0	16.0	16.0
Actuated g/C Ratio	0.73		0.73	0.73	0.18	0.18
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1294		463	1366	315	281
v/s Ratio Prot	0.37			0.16	0.18	
v/s Ratio Perm			c1.07			c0.41
v/c Ratio	0.51		1.45	0.22	0.99	2.30
Uniform Delay, d1	5.1		12.0	3.8	36.9	37.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4		214.9	0.4	46.8	596.5
Delay (s)	6.5		226.9	4.2	83.7	633.5
Level of Service	A		F	A	F	F
Approach Delay (s)	6.5			157.1	510.5	
Approach LOS	A			F	F	

Intersection Summary			
HCM Average Control Delay	284.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	103.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0			4.0	
Lane Util. Factor		0.95			1.00	1.00		1.00			1.00	
Frt		0.99			1.00	0.85		0.99			0.94	
Flt Protected		0.97			1.00	1.00		0.98			0.97	
Satd. Flow (prot)		3414			1860	1583		1798			1708	
Flt Permitted		0.61			0.72	1.00		0.60			0.77	
Satd. Flow (perm)		2126			1333	1583		1110			1352	
Volume (vph)	411	292	43	8	325	775	58	50	9	431	38	366
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	447	317	47	9	353	842	63	54	10	468	41	398
RTOR Reduction (vph)	0	5	0	0	0	360	0	3	0	0	36	0
Lane Group Flow (vph)	0	806	0	0	362	482	0	124	0	0	871	0
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2		2	4			8		
Actuated Green, G (s)		18.9			18.9	18.9		53.1			53.1	
Effective Green, g (s)		18.9			18.9	18.9		53.1			53.1	
Actuated g/C Ratio		0.24			0.24	0.24		0.66			0.66	
Clearance Time (s)		4.0			4.0	4.0		4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		502			315	374		737			897	
v/s Ratio Prot												
v/s Ratio Perm		c0.38			0.27	0.30		0.11			c0.64	
v/c Ratio		3.85dl			1.15	1.29		0.17			0.97	
Uniform Delay, d1		30.6			30.6	30.6		5.1			12.7	
Progression Factor		1.00			1.00	1.00		1.00			1.00	
Incremental Delay, d2		281.4			97.5	149.0		0.1			23.2	
Delay (s)		312.0			128.0	179.6		5.2			35.9	
Level of Service		F			F	F		A			D	
Approach Delay (s)		312.0			164.1			5.2			35.9	
Approach LOS		F			F			A			D	

Intersection Summary			
HCM Average Control Delay	158.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	105.3%	ICU Level of Service	G
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3498		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3498		1770	3539	1583	1770	3539	1583
Volume (vph)	190	750	82	175	915	76	188	883	167	87	878	132
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	815	89	190	995	83	204	960	182	95	954	143
RTOR Reduction (vph)	0	0	59	0	10	0	0	0	64	0	0	60
Lane Group Flow (vph)	207	815	30	190	1068	0	204	960	118	95	954	83
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	9.7	22.0	22.0	5.0	17.3		4.0	18.0	18.0	4.0	18.0	18.0
Effective Green, g (s)	9.7	22.0	22.0	5.0	17.3		4.0	18.0	18.0	4.0	18.0	18.0
Actuated g/C Ratio	0.15	0.34	0.34	0.08	0.27		0.06	0.28	0.28	0.06	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	264	631	536	136	931		109	980	438	109	980	438
v/s Ratio Prot	0.12	c0.44		c0.11	0.31		c0.12	c0.27		0.05	0.27	
v/s Ratio Perm			0.02						0.07			0.05
v/c Ratio	0.78	1.29	0.06	1.40	1.15		1.87	0.98	0.27	0.87	0.97	0.19
Uniform Delay, d1	26.6	21.5	14.5	30.0	23.8		30.5	23.3	18.4	30.2	23.3	17.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.1	142.8	0.0	217.0	79.1		424.9	23.5	0.3	48.3	22.3	0.2
Delay (s)	40.7	164.3	14.5	247.0	102.9		455.4	46.9	18.7	78.6	45.6	18.1
Level of Service	D	F	B	F	F		F	D	B	E	D	B
Approach Delay (s)		129.3			124.5			105.0			44.9	
Approach LOS		F			F			F			D	

Intersection Summary			
HCM Average Control Delay	101.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	46	27	7	5	56	171	19	436	2	152	443	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	50	29	8	5	61	186	21	474	2	165	482	65

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	87	252	495	2	647	65
Volume Left (vph)	50	5	21	0	165	0
Volume Right (vph)	8	186	0	2	0	65
Hadj (s)	0.10	-0.40	0.05	-0.67	0.16	-0.67
Departure Headway (s)	8.1	6.9	6.8	6.1	6.9	6.1
Degree Utilization, x	0.20	0.48	0.94	0.00	1.24	0.11
Capacity (veh/h)	414	498	519	578	520	584
Control Delay (s)	13.1	16.2	50.1	7.9	145.4	8.6
Approach Delay (s)	13.1	16.2	49.9		132.9	
Approach LOS	B	C	E		F	

Intersection Summary			
Delay	80.5		
HCM Level of Service	F		
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Volume (vph)	869	285	532	1539	145	313
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	945	310	578	1673	158	340
RTOR Reduction (vph)	0	138	0	0	0	276
Lane Group Flow (vph)	945	172	578	1673	158	64
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	29.5	29.5	31.5	65.0	17.0	17.0
Effective Green, g (s)	29.5	29.5	31.5	65.0	17.0	17.0
Actuated g/C Ratio	0.33	0.33	0.35	0.72	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	611	519	620	2556	334	299
v/s Ratio Prot	c0.51		c0.33	0.47	c0.09	
v/s Ratio Perm		0.11				0.04
v/c Ratio	1.55	0.33	0.93	0.65	0.47	0.21
Uniform Delay, d1	30.3	22.8	28.2	6.6	32.5	30.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	254.1	0.4	21.0	0.6	4.7	1.6
Delay (s)	284.3	23.2	49.2	7.2	37.3	32.5
Level of Service	F	C	D	A	D	C
Approach Delay (s)	219.8			18.0	34.0	
Approach LOS	F			B	C	

Intersection Summary			
HCM Average Control Delay	83.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Volume (vph)	96	1131	1722	387	339	318
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	1229	1872	421	368	346
RTOR Reduction (vph)	0	0	0	226	0	130
Lane Group Flow (vph)	104	1229	1872	195	368	216
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	4.0	35.8	27.8	27.8	16.2	16.2
Effective Green, g (s)	4.0	35.8	27.8	27.8	16.2	16.2
Actuated g/C Ratio	0.07	0.60	0.46	0.46	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	118	1112	1640	733	478	427
v/s Ratio Prot	0.06	c0.66	0.53		c0.21	
v/s Ratio Perm				0.12		0.14
v/c Ratio	0.88	1.11	1.14	0.27	0.77	0.51
Uniform Delay, d1	27.8	12.1	16.1	9.9	20.2	18.5
Progression Factor	1.00	1.00	2.01	7.97	1.00	1.00
Incremental Delay, d2	48.1	60.6	64.4	0.0	11.4	4.2
Delay (s)	75.9	72.7	96.8	78.6	31.5	22.8
Level of Service	E	E	F	E	C	C
Approach Delay (s)		73.0	93.5		27.3	
Approach LOS		E	F		C	

Intersection Summary			
HCM Average Control Delay	76.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	66	1366	55	463	1830	408	316	406	58	47	698	884
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	1485	60	503	1989	443	343	441	63	51	759	961
RTOR Reduction (vph)	0	0	19	0	0	109	0	0	41	0	0	217
Lane Group Flow (vph)	72	1485	41	503	1989	334	343	441	22	51	759	744
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	4.0	35.0	35.0	21.0	52.0	52.0	14.0	41.2	41.2	6.8	34.0	34.0
Effective Green, g (s)	4.0	35.0	35.0	21.0	52.0	52.0	14.0	41.2	41.2	6.8	34.0	34.0
Actuated g/C Ratio	0.03	0.29	0.29	0.18	0.43	0.43	0.12	0.34	0.34	0.06	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	59	1032	462	310	1534	686	207	1215	543	100	1003	449
v/s Ratio Prot	0.04	c0.42		c0.28	0.56		c0.19	0.12		0.03	0.21	
v/s Ratio Perm			0.03			0.21			0.01			c0.47
v/c Ratio	1.22	1.44	0.09	1.62	1.30	0.49	1.66	0.36	0.04	0.51	0.76	1.66
Uniform Delay, d1	58.0	42.5	30.9	49.5	34.0	24.4	53.0	29.6	26.2	55.0	39.2	43.0
Progression Factor	0.97	0.99	1.02	1.13	0.69	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	112.5	198.0	0.0	281.5	133.9	0.0	316.2	0.8	0.1	4.3	5.3	305.3
Delay (s)	169.0	240.0	31.7	337.6	157.5	19.9	369.2	30.4	26.4	59.3	44.6	348.3
Level of Service	F	F	C	F	F	B	F	C	C	E	D	F
Approach Delay (s)		229.1			167.6			167.3			209.8	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	191.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	120.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	307	1851	163	215	1967	296	304	854	158	523	470	179
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	334	2012	177	234	2138	322	330	928	172	568	511	195
RTOR Reduction (vph)	0	0	90	0	0	143	0	0	106	0	0	116
Lane Group Flow (vph)	334	2012	87	234	2138	179	330	928	66	568	511	79
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	18.0	18.0	4.0	18.0	18.0	5.0	16.0	16.0	6.0	17.0	17.0
Effective Green, g (s)	4.0	18.0	18.0	4.0	18.0	18.0	5.0	16.0	16.0	6.0	17.0	17.0
Actuated g/C Ratio	0.07	0.30	0.30	0.07	0.30	0.30	0.08	0.27	0.27	0.10	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	229	1526	475	229	1526	475	286	944	422	343	1003	449
v/s Ratio Prot	c0.10	0.40		0.07	c0.42		0.10	c0.26		c0.17	0.14	
v/s Ratio Perm			0.06			0.11			0.04			0.05
v/c Ratio	1.46	1.32	0.18	1.02	1.40	0.38	1.15	0.98	0.16	1.66	0.51	0.18
Uniform Delay, d1	28.0	21.0	15.6	28.0	21.0	16.6	27.5	21.9	16.8	27.0	18.0	16.2
Progression Factor	1.13	1.98	2.18	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	208.6	143.8	0.0	65.2	184.5	0.5	101.4	25.5	0.8	307.9	1.8	0.9
Delay (s)	240.2	185.3	33.9	93.2	205.5	17.1	128.9	47.3	17.6	334.9	19.9	17.1
Level of Service	F	F	C	F	F	B	F	D	B	F	B	B
Approach Delay (s)		181.9			173.2			62.6			159.9	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM Average Control Delay	153.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	622	1646	232	323	1691	181	453	725	196	234	491	452
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	676	1789	252	351	1838	197	492	788	213	254	534	491
RTOR Reduction (vph)	0	0	127	0	0	109	0	0	111	0	0	102
Lane Group Flow (vph)	676	1789	125	351	1838	89	492	788	102	254	534	389
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	24.0	24.0	4.0	21.0	21.0	5.0	19.0	19.0	7.0	21.0	21.0
Effective Green, g (s)	7.0	24.0	24.0	4.0	21.0	21.0	5.0	19.0	19.0	7.0	21.0	21.0
Actuated g/C Ratio	0.10	0.34	0.34	0.06	0.30	0.30	0.07	0.27	0.27	0.10	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1743	543	196	1526	475	245	961	430	343	1062	475
v/s Ratio Prot	c0.20	c0.35		0.10	c0.36		c0.14	0.22		0.07	0.15	
v/s Ratio Perm			0.08			0.06			0.06			c0.25
v/c Ratio	1.97	1.03	0.23	1.79	1.20	0.19	2.01	0.82	0.24	0.74	0.50	0.82
Uniform Delay, d1	31.5	23.0	16.4	33.0	24.5	18.2	32.5	23.9	19.9	30.6	20.2	22.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	447.3	28.6	0.2	375.6	98.5	0.2	467.9	7.8	1.3	8.3	1.7	14.5
Delay (s)	478.8	51.6	16.6	408.6	123.0	18.4	500.4	31.7	21.2	38.9	21.9	37.2
Level of Service	F	D	B	F	F	B	F	C	C	D	C	D
Approach Delay (s)		154.6			156.4			184.6			31.2	
Approach LOS		F			F			F			C	

Intersection Summary			
HCM Average Control Delay	140.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	233	1597	149	281	1683	152	247	376	136	144	513	214
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	253	1736	162	305	1829	165	268	409	148	157	558	233
RTOR Reduction (vph)	0	0	102	0	0	82	0	0	109	0	0	104
Lane Group Flow (vph)	253	1736	60	305	1829	83	268	409	39	157	558	129
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	24.0	24.0	4.0	23.0	23.0	5.0	17.0	17.0	4.0	16.0	16.0
Effective Green, g (s)	5.0	24.0	24.0	4.0	23.0	23.0	5.0	17.0	17.0	4.0	16.0	16.0
Actuated g/C Ratio	0.08	0.37	0.37	0.06	0.35	0.35	0.08	0.26	0.26	0.06	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	264	1878	584	211	1799	560	264	926	414	211	871	390
v/s Ratio Prot	0.07	0.34		c0.09	c0.36		c0.08	0.12		0.05	c0.16	
v/s Ratio Perm			0.04			0.05			0.02			0.08
v/c Ratio	0.96	0.92	0.10	1.45	1.02	0.15	1.02	0.44	0.09	0.74	0.64	0.33
Uniform Delay, d1	29.9	19.6	13.4	30.5	21.0	14.3	30.0	20.0	18.2	30.0	21.9	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	43.5	8.2	0.1	225.1	25.5	0.1	59.3	1.5	0.4	13.3	3.6	2.3
Delay (s)	73.4	27.9	13.5	255.6	46.5	14.4	89.3	21.6	18.6	43.3	25.5	22.4
Level of Service	E	C	B	F	D	B	F	C	B	D	C	C
Approach Delay (s)		32.1			71.9			43.0			27.7	
Approach LOS		C			E			D			C	

Intersection Summary			
HCM Average Control Delay	47.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.93	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3279	
Flt Permitted		1.00	1.00	0.95	1.00		0.60		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1121		1583	1770	3279	
Volume (vph)	0	1099	69	399	1266	0	53	0	523	167	113	109
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1195	75	434	1376	0	58	0	568	182	123	118
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	143	0	30	0
Lane Group Flow (vph)	0	1195	55	434	1376	0	58	0	425	182	211	0
Turn Type			Perm	Prot			custom		custom	Prot		
Protected Phases		4		3	8					1	6	
Permitted Phases			4				2		2			
Actuated Green, G (s)		43.0	43.0	11.1	58.1		26.2		26.2	11.1	41.3	
Effective Green, g (s)		43.0	43.0	11.1	58.1		26.2		26.2	11.1	41.3	
Actuated g/C Ratio		0.40	0.40	0.10	0.54		0.24		0.24	0.10	0.38	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1417	634	183	1914		273		386	183	1261	
v/s Ratio Prot		c0.34		c0.25	0.39					c0.10	0.06	
v/s Ratio Perm			0.03				0.05		c0.27			
v/c Ratio		0.84	0.09	2.37	0.72		0.21		1.10	0.99	0.17	
Uniform Delay, d1		29.2	20.0	48.2	18.5		32.4		40.6	48.1	21.7	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		4.8	0.1	633.8	1.3		0.4		76.0	64.6	0.3	
Delay (s)		33.9	20.1	681.9	19.8		32.8		116.6	112.7	22.0	
Level of Service		C	C	F	B		C		F	F	C	
Approach Delay (s)		33.1			178.6			108.8			61.0	
Approach LOS		C			F			F			E	

Intersection Summary			
HCM Average Control Delay	111.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	107.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.90	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1498	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.41		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1498	1504	1479		1583
Volume (vph)	235	1165	0	0	957	698	616	17	900	209	0	390
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	255	1266	0	0	1040	759	670	18	978	227	0	424
RTOR Reduction (vph)	0	0	0	0	0	240	0	63	63	0	0	340
Lane Group Flow (vph)	255	1266	0	0	1040	519	502	549	489	227	0	84
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	16.7	37.9			17.2	17.2	19.0	19.0	19.0	16.0		16.0
Effective Green, g (s)	16.7	37.9			17.2	17.2	19.0	19.0	19.0	16.0		16.0
Actuated g/C Ratio	0.20	0.45			0.20	0.20	0.22	0.22	0.22	0.19		0.19
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	348	1580			717	321	376	335	337	279		298
v/s Ratio Prot	0.14	c0.36			0.29		0.30	c0.37				
v/s Ratio Perm						c0.33			0.33	c0.15		0.05
v/c Ratio	0.73	0.80			1.45	1.62	1.34	1.64	1.45	0.81		0.28
Uniform Delay, d1	32.0	20.3			33.8	33.8	33.0	33.0	33.0	33.0		29.5
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	7.8	3.0			210.5	291.5	167.9	300.8	219.1	22.3		2.4
Delay (s)	39.8	23.3			244.4	325.4	200.9	333.8	252.0	55.3		31.9
Level of Service	D	C			F	F	F	F	F	E		C
Approach Delay (s)		26.0			278.5			266.6			40.0	
Approach LOS		C			F			F			D	

Intersection Summary			
HCM Average Control Delay	179.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

2012 BASELINE PLUS PROJECT PHASES 1 & 2 WITH MITIGATION TRAFFIC CONDITION

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Volume (vph)	411	134	296	116	213	129	195	1398	206	200	1085	655
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	447	146	322	126	232	140	212	1520	224	217	1179	712
RTOR Reduction (vph)	0	0	24	0	0	3	0	0	148	0	0	247
Lane Group Flow (vph)	447	146	298	126	232	137	212	1520	76	217	1179	465
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.0	17.3	27.2	4.8	11.1	25.7	9.9	27.3	27.3	14.6	32.0	32.0
Effective Green, g (s)	11.0	17.3	27.2	4.8	11.1	25.7	9.9	27.3	27.3	14.6	32.0	32.0
Actuated g/C Ratio	0.14	0.22	0.34	0.06	0.14	0.32	0.12	0.34	0.34	0.18	0.40	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	472	765	617	206	491	588	425	1735	540	323	1416	633
v/s Ratio Prot	c0.13	0.04	c0.06	0.04	0.07	0.04	0.06	0.30		c0.12	c0.33	
v/s Ratio Perm			0.13			0.04			0.05			0.29
v/c Ratio	0.95	0.19	0.48	0.61	0.47	0.23	0.50	0.88	0.14	0.67	0.83	0.73
Uniform Delay, d1	34.2	25.6	20.8	36.7	31.8	19.9	32.7	24.8	18.2	30.5	21.6	20.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.2	0.1	0.6	5.3	0.7	0.2	0.9	6.6	0.5	5.4	5.9	7.4
Delay (s)	62.4	25.8	21.4	42.0	32.5	20.1	33.7	31.3	18.8	35.9	27.5	27.8
Level of Service	E	C	C	D	C	C	C	C	B	D	C	C
Approach Delay (s)		42.2			31.4			30.1			28.4	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	300	1021	578	121	1483	190	477	67	202	181	73	318
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	1110	628	132	1612	207	518	73	220	197	79	346
RTOR Reduction (vph)	0	0	216	0	0	107	0	0	139	0	0	5
Lane Group Flow (vph)	326	1110	412	132	1612	100	518	73	81	197	79	341
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	34.1	50.1	6.9	31.0	31.0	16.0	24.3	24.3	8.7	17.0	27.0
Effective Green, g (s)	10.0	34.1	50.1	6.9	31.0	31.0	16.0	24.3	24.3	8.7	17.0	27.0
Actuated g/C Ratio	0.11	0.38	0.56	0.08	0.34	0.34	0.18	0.27	0.27	0.10	0.19	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	381	1927	952	263	1752	545	610	503	427	332	352	545
v/s Ratio Prot	c0.09	c0.22	0.08	0.04	c0.32		c0.15	0.04		0.06	0.04	c0.07
v/s Ratio Perm			0.18			0.06			0.05			0.15
v/c Ratio	0.86	0.58	0.43	0.50	0.92	0.18	0.85	0.15	0.19	0.59	0.22	0.63
Uniform Delay, d1	39.3	22.2	11.7	39.9	28.3	20.6	35.8	25.0	25.3	39.0	30.9	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.9	0.4	0.3	1.5	8.4	0.2	13.8	0.6	1.0	2.8	0.3	2.2
Delay (s)	56.2	22.6	12.0	41.4	36.7	20.8	49.6	25.6	26.2	41.8	31.2	29.4
Level of Service	E	C	B	D	D	C	D	C	C	D	C	C
Approach Delay (s)		24.7			35.3			41.1			33.6	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	32.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	288	1390	184	95	1366	271	167	284	154	503	416	302
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	313	1511	200	103	1485	295	182	309	167	547	452	328
RTOR Reduction (vph)	0	0	101	0	0	67	0	0	94	0	0	93
Lane Group Flow (vph)	313	1511	99	103	1485	228	182	309	73	547	452	235
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	30.6	30.6	3.2	25.8	39.8	6.0	16.2	16.2	14.0	24.2	24.2
Effective Green, g (s)	8.0	30.6	30.6	3.2	25.8	39.8	6.0	16.2	16.2	14.0	24.2	24.2
Actuated g/C Ratio	0.10	0.38	0.38	0.04	0.32	0.50	0.08	0.20	0.20	0.18	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1945	605	137	1640	867	257	717	321	601	1071	479
v/s Ratio Prot	c0.09	0.30		0.03	c0.29	0.05	0.05	0.09		c0.16	0.13	
v/s Ratio Perm			0.06			0.10			0.05			c0.15
v/c Ratio	0.91	0.78	0.16	0.75	0.91	0.26	0.71	0.43	0.23	0.91	0.42	0.49
Uniform Delay, d1	35.7	21.7	16.3	38.0	25.9	11.6	36.1	27.9	26.7	32.4	22.3	22.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.6	2.0	0.1	20.5	7.5	0.2	8.6	1.9	1.6	18.0	1.2	3.6
Delay (s)	63.2	23.7	16.4	58.5	33.4	11.8	44.8	29.8	28.3	50.4	23.5	26.4
Level of Service	E	C	B	E	C	B	D	C	C	D	C	C
Approach Delay (s)		29.1			31.4			33.5			35.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	31.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	83	1827	242	378	1474	26	195	102	433	69	100	53
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	1986	263	411	1602	28	212	111	471	75	109	58
RTOR Reduction (vph)	0	0	100	0	0	9	0	0	172	0	0	47
Lane Group Flow (vph)	90	1986	163	411	1602	19	212	111	299	75	109	11
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.6	37.8	37.8	12.0	42.2	42.2	7.0	21.0	21.0	3.2	17.2	17.2
Effective Green, g (s)	7.6	37.8	37.8	12.0	42.2	42.2	7.0	21.0	21.0	3.2	17.2	17.2
Actuated g/C Ratio	0.08	0.42	0.42	0.13	0.47	0.47	0.08	0.23	0.23	0.04	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	149	2136	665	458	2384	742	267	435	369	122	356	303
v/s Ratio Prot	0.05	c0.39		c0.12	0.32		c0.06	0.06		0.02	0.06	
v/s Ratio Perm			0.10			0.01			c0.19			0.01
v/c Ratio	0.60	0.93	0.25	0.90	0.67	0.03	0.79	0.26	0.81	0.61	0.31	0.04
Uniform Delay, d1	39.7	24.8	16.9	38.4	18.5	12.8	40.8	28.1	32.6	42.8	31.3	29.7
Progression Factor	1.00	1.00	1.00	1.29	0.54	0.60	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	7.8	0.2	14.8	0.5	0.0	14.9	1.4	17.4	8.9	2.2	0.2
Delay (s)	46.5	32.6	17.1	64.2	10.5	7.7	55.7	29.5	50.0	51.7	33.5	29.9
Level of Service	D	C	B	E	B	A	E	C	D	D	C	C
Approach Delay (s)		31.4			21.3			48.7			38.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	128	2382	78	238	1651	259	155	143	275	232	167	163
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	139	2589	85	259	1795	282	168	155	299	252	182	177
RTOR Reduction (vph)	0	0	11	0	0	145	0	0	116	0	0	6
Lane Group Flow (vph)	139	2589	74	259	1795	137	168	155	183	252	182	171
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.3	44.0	44.0	7.0	42.7	42.7	6.0	16.0	16.0	7.0	17.0	25.3
Effective Green, g (s)	8.3	44.0	44.0	7.0	42.7	42.7	6.0	16.0	16.0	7.0	17.0	25.3
Actuated g/C Ratio	0.09	0.49	0.49	0.08	0.47	0.47	0.07	0.18	0.18	0.08	0.19	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	317	2486	774	267	2413	751	229	629	281	267	668	515
v/s Ratio Prot	0.04	c0.51		c0.08	0.35		0.05	0.04		c0.07	0.05	0.03
v/s Ratio Perm			0.05			0.09			c0.12			0.08
v/c Ratio	0.44	1.04	0.10	0.97	0.74	0.18	0.73	0.25	0.65	0.94	0.27	0.33
Uniform Delay, d1	38.6	23.0	12.3	41.4	19.2	13.6	41.2	31.8	34.4	41.3	31.2	25.6
Progression Factor	1.01	0.74	1.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	25.7	0.0	46.6	1.3	0.1	11.5	0.9	11.2	39.8	1.0	0.4
Delay (s)	39.7	42.7	13.5	88.0	20.5	13.7	52.7	32.7	45.6	81.1	32.2	26.0
Level of Service	D	D	B	F	C	B	D	C	D	F	C	C
Approach Delay (s)		41.7			27.2			44.3			50.6	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	37.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1748		1770	1863	1583	1770	1837		1770	1863	1583
Flt Permitted	0.70	1.00		0.62	1.00	1.00	0.62	1.00		0.58	1.00	1.00
Satd. Flow (perm)	1298	1748		1161	1863	1583	1158	1837		1083	1863	1583
Volume (vph)	56	117	82	43	86	74	66	244	25	62	201	29
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	127	89	47	93	80	72	265	27	67	218	32
RTOR Reduction (vph)	0	66	0	0	0	60	0	7	0	0	0	16
Lane Group Flow (vph)	61	150	0	47	93	20	72	285	0	67	218	16
Turn Type	Perm			Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)	8.7	8.7		8.7	8.7	8.7	17.7	17.7		17.7	17.7	17.7
Effective Green, g (s)	8.7	8.7		8.7	8.7	8.7	17.7	17.7		17.7	17.7	17.7
Actuated g/C Ratio	0.25	0.25		0.25	0.25	0.25	0.51	0.51		0.51	0.51	0.51
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	328	442		294	471	400	596	945		557	959	815
v/s Ratio Prot		c0.09			0.05			c0.15			0.12	
v/s Ratio Perm	0.05			0.04		0.01	0.06			0.06		0.01
v/c Ratio	0.19	0.34		0.16	0.20	0.05	0.12	0.30		0.12	0.23	0.02
Uniform Delay, d1	10.1	10.5		10.0	10.1	9.7	4.3	4.8		4.3	4.6	4.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.5		0.3	0.2	0.1	0.1	0.2		0.1	0.1	0.0
Delay (s)	10.3	11.0		10.3	10.3	9.8	4.4	5.0		4.4	4.7	4.1
Level of Service	B	B		B	B	A	A	A		A	A	A
Approach Delay (s)		10.8			10.1			4.9			4.6	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	34.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.55	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1016	1863	1770	1583
Volume (vph)	141	254	583	284	207	260
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	153	276	634	309	225	283
RTOR Reduction (vph)	0	188	0	0	0	223
Lane Group Flow (vph)	153	88	634	309	225	60
Turn Type		Perm	pm+pt			Perm
Protected Phases	6		5	2	4	
Permitted Phases		6	2			4
Actuated Green, G (s)	19.1	19.1	39.3	39.3	12.7	12.7
Effective Green, g (s)	19.1	19.1	39.3	39.3	12.7	12.7
Actuated g/C Ratio	0.32	0.32	0.65	0.65	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	593	504	869	1220	375	335
v/s Ratio Prot	0.08		c0.20	0.17	c0.13	
v/s Ratio Perm		0.06	c0.28			0.04
v/c Ratio	0.26	0.17	0.73	0.25	0.60	0.18
Uniform Delay, d1	15.2	14.8	5.8	4.3	21.4	19.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.8	3.1	0.5	2.7	0.3
Delay (s)	16.2	15.5	8.9	4.8	24.1	19.6
Level of Service	B	B	A	A	C	B
Approach Delay (s)	15.8			7.6	21.6	
Approach LOS	B			A	C	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	1863	1583
Flt Permitted	0.45	1.00	1.00	0.55	1.00	1.00	0.75	1.00	1.00	0.75	1.00	1.00
Satd. Flow (perm)	845	3539	1583	1025	3539	1583	1392	3539	1583	1393	1863	1583
Volume (vph)	20	307	42	29	490	33	194	13	21	108	15	55
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	334	46	32	533	36	211	14	23	117	16	60
RTOR Reduction (vph)	0	0	29	0	0	23	0	0	15	0	0	39
Lane Group Flow (vph)	22	334	17	32	533	13	211	14	8	117	16	21
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	10.0	10.0	10.0	10.0	10.0	10.0	9.6	9.6	9.6	9.6	9.6	9.6
Effective Green, g (s)	10.0	10.0	10.0	10.0	10.0	10.0	9.6	9.6	9.6	9.6	9.6	9.6
Actuated g/C Ratio	0.36	0.36	0.36	0.36	0.36	0.36	0.35	0.35	0.35	0.35	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	306	1282	574	371	1282	574	484	1231	551	485	648	551
v/s Ratio Prot		0.09			c0.15			0.00			0.01	
v/s Ratio Perm	0.03		0.01	0.03		0.01	c0.15		0.01	0.08		0.01
v/c Ratio	0.07	0.26	0.03	0.09	0.42	0.02	0.44	0.01	0.01	0.24	0.02	0.04
Uniform Delay, d1	5.8	6.2	5.7	5.8	6.6	5.7	6.9	5.9	5.9	6.4	5.9	5.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.0	0.1	0.2	0.0	0.6	0.0	0.0	0.3	0.0	0.0
Delay (s)	5.9	6.3	5.7	5.9	6.8	5.7	7.5	5.9	5.9	6.7	5.9	6.0
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		6.2			6.7			7.3			6.4	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	27.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3461		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3461		1770	3539	1583	1770	3539	1583
Volume (vph)	181	922	85	109	571	99	51	451	86	90	482	72
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	197	1002	92	118	621	108	55	490	93	98	524	78
RTOR Reduction (vph)	0	0	60	0	21	0	0	0	66	0	0	57
Lane Group Flow (vph)	197	1002	32	118	708	0	55	490	27	98	524	21
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	7.1	19.7	19.7	4.2	16.8		2.1	14.1	14.1	3.5	15.5	15.5
Effective Green, g (s)	7.1	19.7	19.7	4.2	16.8		2.1	14.1	14.1	3.5	15.5	15.5
Actuated g/C Ratio	0.12	0.34	0.34	0.07	0.29		0.04	0.25	0.25	0.06	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	219	1212	542	129	1011		65	868	388	108	954	427
v/s Ratio Prot	c0.11	c0.28		0.07	0.20		0.03	0.14		c0.06	c0.15	
v/s Ratio Perm			0.02						0.02			0.01
v/c Ratio	0.90	0.83	0.06	0.91	0.70		0.85	0.56	0.07	0.91	0.55	0.05
Uniform Delay, d1	24.8	17.3	12.7	26.5	18.1		27.5	19.0	16.7	26.8	18.0	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.4	4.8	0.0	53.5	2.2		60.5	0.8	0.1	57.6	0.7	0.0
Delay (s)	59.3	22.1	12.7	80.0	20.3		88.0	19.9	16.7	84.4	18.7	15.6
Level of Service	E	C	B	E	C		F	B	B	F	B	B
Approach Delay (s)		27.1			28.6			25.3			27.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.98			0.89			1.00	0.85		1.00	0.85
Flt Protected		0.97			1.00			1.00	1.00		0.99	1.00
Satd. Flow (prot)		1778			1658			1861	1583		1843	1583
Flt Permitted		0.83			0.98			0.99	1.00		0.87	1.00
Satd. Flow (perm)		1526			1636			1852	1583		1617	1583
Volume (vph)	64	32	15	5	17	86	8	408	6	58	219	27
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	35	16	5	18	93	9	443	7	63	238	29
RTOR Reduction (vph)	0	13	0	0	77	0	0	0	2	0	0	10
Lane Group Flow (vph)	0	108	0	0	39	0	0	452	5	0	301	19
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		8.0			8.0			30.2	30.2		30.2	30.2
Effective Green, g (s)		8.0			8.0			30.2	30.2		30.2	30.2
Actuated g/C Ratio		0.17			0.17			0.65	0.65		0.65	0.65
Clearance Time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		264			283			1211	1035		1057	1035
v/s Ratio Prot												
v/s Ratio Perm		c0.07			0.02			c0.24	0.00		0.19	0.01
v/c Ratio		0.41			0.14			0.37	0.00		0.28	0.02
Uniform Delay, d1		17.0			16.2			3.7	2.8		3.4	2.8
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		1.0			0.2			0.2	0.0		0.1	0.0
Delay (s)		18.0			16.4			3.9	2.8		3.6	2.8
Level of Service		B			B			A	A		A	A
Approach Delay (s)		18.0			16.4			3.8			3.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	46.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Volume (vph)	973	488	596	882	77	277
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1058	530	648	959	84	301
RTOR Reduction (vph)	0	306	0	0	0	244
Lane Group Flow (vph)	1058	224	648	959	84	57
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	27.2	27.2	33.8	65.0	17.0	17.0
Effective Green, g (s)	27.2	27.2	33.8	65.0	17.0	17.0
Actuated g/C Ratio	0.30	0.30	0.38	0.72	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1070	478	665	2556	334	299
v/s Ratio Prot	c0.30		c0.37	0.27	c0.05	
v/s Ratio Perm		0.14				0.04
v/c Ratio	0.99	0.47	0.97	0.38	0.25	0.19
Uniform Delay, d1	31.2	25.5	27.7	4.8	31.1	30.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	24.5	0.7	28.4	0.1	1.8	1.4
Delay (s)	55.8	26.2	56.0	4.9	32.9	32.1
Level of Service	E	C	E	A	C	C
Approach Delay (s)	45.9			25.5	32.3	
Approach LOS	D			C	C	

Intersection Summary			
HCM Average Control Delay	35.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	54	1031	39	383	1163	222	248	464	42	18	375	532
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	1121	42	416	1264	241	270	504	46	20	408	578
RTOR Reduction (vph)	0	0	21	0	0	108	0	0	33	0	0	16
Lane Group Flow (vph)	59	1121	21	416	1264	133	270	504	13	20	408	562
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		1	6		5	2	3
Permitted Phases			4			8			6			2
Actuated Green, G (s)	4.8	30.8	30.8	22.0	48.0	48.0	14.0	29.2	29.2	2.0	17.2	39.2
Effective Green, g (s)	4.8	30.8	30.8	22.0	48.0	48.0	14.0	29.2	29.2	2.0	17.2	39.2
Actuated g/C Ratio	0.05	0.31	0.31	0.22	0.48	0.48	0.14	0.29	0.29	0.02	0.17	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	85	1090	488	389	1699	760	248	1033	462	35	609	684
v/s Ratio Prot	0.03	c0.32		c0.24	0.36		c0.15	0.14		0.01	0.12	c0.18
v/s Ratio Perm			0.01			0.08			0.01			0.17
v/c Ratio	0.69	1.03	0.04	1.07	0.74	0.17	1.09	0.49	0.03	0.57	0.67	0.82
Uniform Delay, d1	46.9	34.6	24.3	39.0	21.0	14.8	43.0	29.2	25.3	48.6	38.7	27.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.7	34.8	0.0	65.3	1.8	0.1	82.8	1.6	0.1	20.6	5.8	7.9
Delay (s)	68.6	69.4	24.3	104.3	22.8	14.9	125.8	30.9	25.4	69.1	44.5	35.1
Level of Service	E	E	C	F	C	B	F	C	C	E	D	D
Approach Delay (s)		67.8			39.5			61.8			39.6	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM Average Control Delay	50.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	250	1520	105	150	1048	62	189	431	401	285	533	421
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1652	114	163	1139	67	205	468	436	310	579	458
RTOR Reduction (vph)	0	0	67	0	0	49	0	0	117	0	0	10
Lane Group Flow (vph)	272	1652	47	163	1139	18	205	468	319	310	579	448
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.7	22.0	22.0	4.0	17.3	17.3	6.0	17.0	17.0	6.0	17.0	25.7
Effective Green, g (s)	8.7	22.0	22.0	4.0	17.3	17.3	6.0	17.0	17.0	6.0	17.0	25.7
Actuated g/C Ratio	0.13	0.34	0.34	0.06	0.27	0.27	0.09	0.26	0.26	0.09	0.26	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	459	1721	536	211	1353	421	317	926	414	317	926	723
v/s Ratio Prot	0.08	c0.32		0.05	0.22		0.06	0.13		c0.09	0.16	c0.08
v/s Ratio Perm			0.03			0.01			c0.20			0.20
v/c Ratio	0.59	0.96	0.09	0.77	0.84	0.04	0.65	0.51	0.77	0.98	0.63	0.62
Uniform Delay, d1	26.5	21.1	14.7	30.1	22.6	17.7	28.5	20.4	22.2	29.4	21.2	15.7
Progression Factor	1.00	1.00	1.00	1.21	0.58	0.65	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	13.3	0.1	12.4	3.8	0.0	4.5	2.0	12.9	44.1	3.2	1.7
Delay (s)	28.5	34.3	14.7	48.9	16.8	11.6	33.0	22.4	35.1	73.5	24.4	17.4
Level of Service	C	C	B	D	B	B	C	C	D	E	C	B
Approach Delay (s)		32.5			20.3			29.3			33.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95			0.95	0.95	1.00	0.95	
Frt		1.00	0.85	1.00	1.00			0.86	0.85	1.00	0.89	
Flt Protected		1.00	1.00	0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539			1521	1504	1770	3142	
Flt Permitted		1.00	1.00	0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539			1521	1504	1770	3142	
Volume (vph)	0	1572	36	146	523	0	21	0	445	150	28	82
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1709	39	159	568	0	23	0	484	163	30	89
RTOR Reduction (vph)	0	0	7	0	0	0	0	177	177	0	75	0
Lane Group Flow (vph)	0	1709	32	159	568	0	0	85	68	163	44	0
Turn Type			Perm	Prot			Split		Perm	Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)		52.1	52.1	10.0	66.1			10.4	10.4	16.0	16.0	
Effective Green, g (s)		52.1	52.1	10.0	66.1			10.4	10.4	16.0	16.0	
Actuated g/C Ratio		0.50	0.50	0.10	0.63			0.10	0.10	0.15	0.15	
Clearance Time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1764	789	169	2239			151	150	271	481	
v/s Ratio Prot		c0.48		c0.09	0.16			c0.06		c0.09	0.01	
v/s Ratio Perm			0.02						0.04			
v/c Ratio		0.97	0.04	0.94	0.25			0.56	0.45	0.60	0.09	
Uniform Delay, d1		25.4	13.4	47.0	8.4			44.9	44.4	41.3	38.0	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		14.6	0.0	51.9	0.1			4.7	2.1	9.5	0.4	
Delay (s)		40.0	13.4	98.9	8.5			49.6	46.5	50.8	38.4	
Level of Service		D	B	F	A			D	D	D	D	
Approach Delay (s)		39.4			28.2			48.1			45.6	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	38.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	104.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Volume (vph)	643	255	207	559	243	476	154	1620	497	339	1430	531
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	699	277	225	608	264	517	167	1761	540	368	1554	577
RTOR Reduction (vph)	0	0	10	0	0	3	0	0	226	0	0	190
Lane Group Flow (vph)	699	277	215	608	264	514	167	1761	314	368	1554	387
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	24.0	15.7	23.8	22.0	13.7	40.0	8.1	40.0	40.0	26.3	58.2	58.2
Effective Green, g (s)	24.0	15.7	23.8	22.0	13.7	40.0	8.1	40.0	40.0	26.3	58.2	58.2
Actuated g/C Ratio	0.20	0.13	0.20	0.18	0.11	0.33	0.07	0.33	0.33	0.22	0.49	0.49
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	687	463	367	629	404	580	232	1695	528	388	1716	768
v/s Ratio Prot	c0.20	0.08	0.04	0.18	0.07	c0.19	0.05	c0.35		c0.21	0.44	
v/s Ratio Perm			0.10			0.13			0.20			0.24
v/c Ratio	1.02	0.60	0.58	0.97	0.65	0.89	0.72	1.04	0.59	0.95	0.91	0.50
Uniform Delay, d1	48.0	49.2	43.6	48.6	50.9	37.9	54.8	40.0	33.3	46.2	28.4	21.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.86	0.71	1.00	1.00	1.00
Incremental Delay, d2	38.8	2.1	2.4	27.4	3.8	15.1	1.0	19.8	0.4	32.3	8.4	2.4
Delay (s)	86.8	51.3	46.0	76.1	54.7	53.0	54.9	54.0	24.0	78.5	36.8	23.4
Level of Service	F	D	D	E	D	D	D	D	C	E	D	C
Approach Delay (s)		71.0			63.4			47.5			39.8	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM Average Control Delay	51.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	441	2038	559	145	1589	138	677	127	145	170	177	386
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	479	2215	608	158	1727	150	736	138	158	185	192	420
RTOR Reduction (vph)	0	0	62	0	0	65	0	0	88	0	0	2
Lane Group Flow (vph)	479	2215	546	158	1727	85	736	138	70	185	192	418
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.0	42.0	65.0	5.0	33.0	33.0	23.0	27.0	27.0	10.0	14.0	28.0
Effective Green, g (s)	14.0	42.0	65.0	5.0	33.0	33.0	23.0	27.0	27.0	10.0	14.0	28.0
Actuated g/C Ratio	0.14	0.42	0.65	0.05	0.33	0.33	0.23	0.27	0.27	0.10	0.14	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	481	2136	1029	172	1678	522	790	503	427	343	261	443
v/s Ratio Prot	c0.14	c0.44	0.12	0.05	0.34		c0.21	0.07		0.05	0.10	c0.13
v/s Ratio Perm			0.22			0.05			0.04			0.13
v/c Ratio	1.00	1.04	0.53	0.92	1.03	0.16	0.93	0.27	0.16	0.54	0.74	0.94
Uniform Delay, d1	43.0	29.0	9.4	47.3	33.5	23.7	37.7	28.8	27.9	42.8	41.2	35.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.7	29.8	0.5	45.2	29.8	0.1	19.1	1.3	0.8	1.6	10.3	28.7
Delay (s)	82.7	58.8	9.9	92.5	63.3	23.9	56.9	30.1	28.7	44.4	51.5	63.9
Level of Service	F	E	A	F	E	C	E	C	C	D	D	E
Approach Delay (s)		53.3			62.7			49.0			56.4	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM Average Control Delay	55.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	533	1838	193	107	1777	542	205	609	69	573	533	389
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	579	1998	210	116	1932	589	223	662	75	623	579	423
RTOR Reduction (vph)	0	0	56	0	0	4	0	0	32	0	0	3
Lane Group Flow (vph)	579	1998	154	116	1932	585	223	662	43	623	579	420
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	19.0	53.9	53.9	7.1	42.0	62.0	10.0	23.0	23.0	20.0	33.0	52.0
Effective Green, g (s)	19.0	53.9	53.9	7.1	42.0	62.0	10.0	23.0	23.0	20.0	33.0	52.0
Actuated g/C Ratio	0.16	0.45	0.45	0.06	0.35	0.52	0.08	0.19	0.19	0.17	0.28	0.43
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	544	2284	711	203	1780	818	286	678	303	572	973	739
v/s Ratio Prot	c0.17	0.39		0.03	c0.38	0.12	0.06	c0.19		c0.18	0.16	0.09
v/s Ratio Perm			0.10			0.25			0.03			0.18
v/c Ratio	1.06	0.87	0.22	0.57	1.09	0.72	0.78	0.98	0.14	1.09	0.60	0.57
Uniform Delay, d1	50.5	30.0	20.2	55.0	39.0	22.2	53.9	48.2	40.3	50.0	37.7	25.6
Progression Factor	1.00	1.00	1.00	0.70	0.56	0.50	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	56.8	4.1	0.2	2.6	45.8	2.1	12.6	29.3	1.0	64.2	2.7	1.0
Delay (s)	107.3	34.1	20.3	40.9	67.5	13.2	66.5	77.5	41.3	114.2	40.4	26.6
Level of Service	F	C	C	D	E	B	E	E	D	F	D	C
Approach Delay (s)		48.2			54.2			72.1			65.1	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	56.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Volume (vph)	75	2051	405	526	2080	66	368	102	440	29	89	75
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	2229	440	572	2261	72	400	111	478	32	97	82
RTOR Reduction (vph)	0	0	113	0	0	13	0	0	196	0	0	70
Lane Group Flow (vph)	82	2229	327	572	2261	59	400	111	282	32	97	12
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.8	52.0	52.0	20.0	64.2	64.2	14.0	29.6	29.6	2.4	18.0	18.0
Effective Green, g (s)	7.8	52.0	52.0	20.0	64.2	64.2	14.0	29.6	29.6	2.4	18.0	18.0
Actuated g/C Ratio	0.06	0.43	0.43	0.17	0.54	0.54	0.12	0.25	0.25	0.02	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	115	2204	686	572	2720	847	401	460	390	35	279	237
v/s Ratio Prot	0.05	c0.44		c0.17	0.44		c0.12	0.06		0.02	0.05	
v/s Ratio Perm			0.21			0.04			c0.18			0.01
v/c Ratio	0.71	1.01	0.48	1.00	0.83	0.07	1.00	0.24	0.72	0.91	0.35	0.05
Uniform Delay, d1	55.0	34.0	24.3	50.0	23.4	13.5	53.0	36.2	41.4	58.7	45.7	43.7
Progression Factor	1.13	0.66	0.74	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.2	18.6	0.4	37.6	2.3	0.0	44.0	1.2	11.1	116.7	3.4	0.4
Delay (s)	75.6	41.1	18.4	87.6	25.7	13.5	97.0	37.4	52.5	175.4	49.1	44.1
Level of Service	E	D	B	F	C	B	F	D	D	F	D	D
Approach Delay (s)		38.5			37.6			68.8			66.3	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	43.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	247	2308	144	351	2430	409	220	266	266	291	246	369
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	2509	157	382	2641	445	239	289	289	316	267	401
RTOR Reduction (vph)	0	0	17	0	0	129	0	0	135	0	0	4
Lane Group Flow (vph)	268	2509	140	382	2641	316	239	289	154	316	267	397
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.9	55.0	55.0	12.0	56.1	56.1	10.0	17.0	17.0	10.0	17.0	27.9
Effective Green, g (s)	10.9	55.0	55.0	12.0	56.1	56.1	10.0	17.0	17.0	10.0	17.0	27.9
Actuated g/C Ratio	0.10	0.50	0.50	0.11	0.51	0.51	0.09	0.15	0.15	0.09	0.15	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	340	2543	792	375	2593	807	312	547	245	312	547	459
v/s Ratio Prot	0.08	0.49		c0.11	c0.52		0.07	0.08		c0.09	0.08	c0.09
v/s Ratio Perm			0.09			0.20			0.10			0.17
v/c Ratio	0.79	0.99	0.18	1.02	1.02	0.39	0.77	0.53	0.63	1.01	0.49	0.87
Uniform Delay, d1	48.4	27.1	15.1	49.0	27.0	16.5	48.9	42.8	43.5	50.0	42.5	39.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.03	0.48	0.58	1.00	1.00	1.00
Incremental Delay, d2	11.5	14.7	0.1	51.3	22.5	0.3	4.6	1.5	4.9	54.2	3.1	15.6
Delay (s)	59.9	41.8	15.2	100.3	49.4	16.8	54.7	22.1	30.0	104.2	45.6	54.8
Level of Service	E	D	B	F	D	B	D	C	C	F	D	D
Approach Delay (s)		42.1			50.8			34.4			68.2	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM Average Control Delay	48.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1817		1770	1863	1583	1770	1837		1770	1863	1583
Flt Permitted	0.62	1.00		0.45	1.00	1.00	0.55	1.00		0.56	1.00	1.00
Satd. Flow (perm)	1155	1817		843	1863	1583	1027	1837		1034	1863	1583
Volume (vph)	39	308	60	15	203	70	81	270	28	88	300	55
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	335	65	16	221	76	88	293	30	96	326	60
RTOR Reduction (vph)	0	18	0	0	0	48	0	9	0	0	0	38
Lane Group Flow (vph)	42	382	0	16	221	28	88	314	0	96	326	22
Turn Type	Perm			Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)	11.2	11.2		11.2	11.2	11.2	11.5	11.5		11.5	11.5	11.5
Effective Green, g (s)	11.2	11.2		11.2	11.2	11.2	11.5	11.5		11.5	11.5	11.5
Actuated g/C Ratio	0.36	0.36		0.36	0.36	0.36	0.37	0.37		0.37	0.37	0.37
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	421	663		308	680	578	385	688		387	698	593
v/s Ratio Prot		c0.21			0.12			0.17			c0.18	
v/s Ratio Perm	0.04			0.02		0.02	0.09			0.09		0.01
v/c Ratio	0.10	0.58		0.05	0.32	0.05	0.23	0.46		0.25	0.47	0.04
Uniform Delay, d1	6.4	7.8		6.3	7.0	6.3	6.6	7.2		6.6	7.3	6.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	1.2		0.1	0.3	0.0	0.3	0.5		0.3	0.5	0.0
Delay (s)	6.5	9.1		6.4	7.3	6.3	6.9	7.7		7.0	7.8	6.1
Level of Service	A	A		A	A	A	A	A		A	A	A
Approach Delay (s)		8.8			7.0			7.5			7.4	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	30.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.17	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	324	1863	1770	1583
Volume (vph)	384	247	618	282	286	993
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	417	268	672	307	311	1079
RTOR Reduction (vph)	0	211	0	0	0	434
Lane Group Flow (vph)	417	57	672	307	311	645
Turn Type		Perm	pm+pt			Perm
Protected Phases	6		5	2	4	
Permitted Phases		6	2			4
Actuated Green, G (s)	19.0	19.0	50.0	50.0	32.0	32.0
Effective Green, g (s)	19.0	19.0	50.0	50.0	32.0	32.0
Actuated g/C Ratio	0.21	0.21	0.56	0.56	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	393	334	614	1035	629	563
v/s Ratio Prot	0.22		c0.33	0.16	0.18	
v/s Ratio Perm		0.04	c0.28			c0.41
v/c Ratio	1.06	0.17	1.09	0.30	0.49	1.15
Uniform Delay, d1	35.5	29.0	24.2	10.6	22.7	29.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	62.5	1.1	64.8	0.7	0.6	85.1
Delay (s)	98.0	30.1	89.0	11.4	23.3	114.1
Level of Service	F	C	F	B	C	F
Approach Delay (s)	71.4			64.6	93.8	
Approach LOS	E			E	F	

Intersection Summary			
HCM Average Control Delay	79.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	1863	1583
Flt Permitted	0.33	1.00	1.00	0.22	1.00	1.00	0.74	1.00	1.00	0.75	1.00	1.00
Satd. Flow (perm)	622	3539	1583	407	3539	1583	1385	3539	1583	1401	1863	1583
Volume (vph)	117	1037	65	65	733	50	65	7	10	88	19	31
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	127	1127	71	71	797	54	71	8	11	96	21	34
RTOR Reduction (vph)	0	0	33	0	0	25	0	0	8	0	0	26
Lane Group Flow (vph)	127	1127	38	71	797	29	71	8	3	96	21	8
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	18.3	18.3	18.3	18.3	18.3	18.3	8.0	8.0	8.0	8.0	8.0	8.0
Effective Green, g (s)	18.3	18.3	18.3	18.3	18.3	18.3	8.0	8.0	8.0	8.0	8.0	8.0
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.53	0.53	0.23	0.23	0.23	0.23	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	332	1888	845	217	1888	845	323	825	369	327	435	369
v/s Ratio Prot		c0.32			0.23			0.00			0.01	
v/s Ratio Perm	0.20		0.02	0.17		0.02	0.05		0.00	c0.07		0.01
v/c Ratio	0.38	0.60	0.04	0.33	0.42	0.03	0.22	0.01	0.01	0.29	0.05	0.02
Uniform Delay, d1	4.7	5.5	3.8	4.5	4.8	3.8	10.6	10.1	10.1	10.8	10.2	10.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.5	0.0	0.9	0.2	0.0	0.3	0.0	0.0	0.5	0.0	0.0
Delay (s)	5.4	6.0	3.8	5.4	5.0	3.8	11.0	10.1	10.1	11.3	10.2	10.2
Level of Service	A	A	A	A	A	A	B	B	B	B	B	B
Approach Delay (s)		5.8			4.9			10.8			10.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	34.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3498		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3498		1770	3539	1583	1770	3539	1583
Volume (vph)	190	750	82	175	915	76	188	883	167	87	878	132
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	815	89	190	995	83	204	960	182	95	954	143
RTOR Reduction (vph)	0	0	64	0	7	0	0	0	46	0	0	43
Lane Group Flow (vph)	207	815	25	190	1071	0	204	960	136	95	954	100
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	11.0	25.7	25.7	12.3	27.0		10.0	30.9	30.9	5.0	25.9	25.9
Effective Green, g (s)	11.0	25.7	25.7	12.3	27.0		10.0	30.9	30.9	5.0	25.9	25.9
Actuated g/C Ratio	0.12	0.29	0.29	0.14	0.30		0.11	0.34	0.34	0.06	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	217	1012	453	242	1051		197	1216	544	98	1020	456
v/s Ratio Prot	c0.12	0.23		0.11	c0.31		c0.12	0.27		0.05	c0.27	
v/s Ratio Perm			0.02						0.09			0.06
v/c Ratio	0.95	0.81	0.06	0.79	1.02		1.04	0.79	0.25	0.97	0.94	0.22
Uniform Delay, d1	39.2	29.8	23.3	37.5	31.4		40.0	26.6	21.2	42.4	31.2	24.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	47.8	4.7	0.1	15.3	32.6		73.7	3.5	0.2	80.0	15.0	0.2
Delay (s)	87.0	34.5	23.3	52.8	64.1		113.7	30.1	21.4	122.4	46.1	24.6
Level of Service	F	C	C	D	E		F	C	C	F	D	C
Approach Delay (s)		43.4			62.4			41.6			49.6	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	49.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.99			0.90			1.00	0.85		1.00	0.85
Flt Protected		0.97			1.00			1.00	1.00		0.99	1.00
Satd. Flow (prot)		1788			1675			1859	1583		1839	1583
Flt Permitted		0.60			0.99			0.97	1.00		0.78	1.00
Satd. Flow (perm)		1099			1667			1808	1583		1456	1583
Volume (vph)	46	27	7	5	56	171	19	436	2	152	443	60
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	29	8	5	61	186	21	474	2	165	482	65
RTOR Reduction (vph)	0	7	0	0	152	0	0	0	1	0	0	16
Lane Group Flow (vph)	0	80	0	0	100	0	0	495	1	0	647	49
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		8.6			8.6			30.1	30.1		30.1	30.1
Effective Green, g (s)		8.6			8.6			30.1	30.1		30.1	30.1
Actuated g/C Ratio		0.18			0.18			0.64	0.64		0.64	0.64
Clearance Time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		202			307			1165	1020		938	1020
v/s Ratio Prot												
v/s Ratio Perm		c0.07			0.06			0.27	0.00		c0.44	0.03
v/c Ratio		0.40			0.33			0.42	0.00		0.69	0.05
Uniform Delay, d1		16.8			16.5			4.1	3.0		5.3	3.0
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		1.3			0.6			0.3	0.0		2.1	0.0
Delay (s)		18.1			17.2			4.3	3.0		7.4	3.1
Level of Service		B			B			A	A		A	A
Approach Delay (s)		18.1			17.2			4.3			7.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	46.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Volume (vph)	869	285	532	1539	145	313
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	945	310	578	1673	158	340
RTOR Reduction (vph)	0	220	0	0	0	266
Lane Group Flow (vph)	945	90	578	1673	158	74
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	23.2	23.2	27.3	54.5	17.5	17.5
Effective Green, g (s)	23.2	23.2	27.3	54.5	17.5	17.5
Actuated g/C Ratio	0.29	0.29	0.34	0.68	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1026	459	604	2411	387	346
v/s Ratio Prot	c0.27		c0.33	0.47	c0.09	
v/s Ratio Perm		0.06				0.05
v/c Ratio	0.92	0.20	0.96	0.69	0.41	0.21
Uniform Delay, d1	27.5	21.4	25.8	7.7	26.8	25.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.1	0.2	26.0	0.9	3.2	1.4
Delay (s)	40.6	21.6	51.8	8.6	30.0	27.0
Level of Service	D	C	D	A	C	C
Approach Delay (s)	35.9			19.7	28.0	
Approach LOS	D			B	C	

Intersection Summary			
HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	66	1366	55	463	1830	408	316	406	58	47	698	884
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	1485	60	503	1989	443	343	441	63	51	759	961
RTOR Reduction (vph)	0	0	19	0	0	109	0	0	46	0	0	7
Lane Group Flow (vph)	72	1485	41	503	1989	334	343	441	17	51	759	954
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		1	6		5	2	3
Permitted Phases			4			8			6			2
Actuated Green, G (s)	4.0	39.0	39.0	25.0	60.0	60.0	17.0	33.2	33.2	6.8	23.0	48.0
Effective Green, g (s)	4.0	39.0	39.0	25.0	60.0	60.0	17.0	33.2	33.2	6.8	23.0	48.0
Actuated g/C Ratio	0.03	0.32	0.32	0.21	0.50	0.50	0.14	0.28	0.28	0.06	0.19	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	59	1150	514	369	1770	792	251	979	438	100	678	686
v/s Ratio Prot	0.04	c0.42		0.28	0.56		c0.19	0.12		0.03	0.21	c0.29
v/s Ratio Perm			0.03			0.21			0.01			0.31
v/c Ratio	1.22	1.29	0.08	1.36	1.12	0.42	1.37	0.45	0.04	0.51	1.12	1.39
Uniform Delay, d1	58.0	40.5	28.1	47.5	30.0	19.0	51.5	35.9	31.7	55.0	48.5	36.0
Progression Factor	1.00	1.00	1.00	1.07	0.41	0.05	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	188.2	137.7	0.1	170.5	59.2	0.1	188.4	1.5	0.2	4.3	72.3	184.6
Delay (s)	246.2	178.2	28.1	221.5	71.5	1.0	239.9	37.4	31.9	59.3	120.8	220.6
Level of Service	F	F	C	F	E	A	F	D	C	E	F	F
Approach Delay (s)		175.7			86.6			119.0			173.2	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	131.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	120.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	622	1646	232	323	1691	181	453	725	196	234	491	452
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	676	1789	252	351	1838	197	492	788	213	254	534	491
RTOR Reduction (vph)	0	0	80	0	0	69	0	0	87	0	0	2
Lane Group Flow (vph)	676	1789	172	351	1838	128	492	788	126	254	534	489
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.0	46.3	46.3	13.7	39.0	39.0	16.0	26.0	26.0	8.0	18.0	39.0
Effective Green, g (s)	21.0	46.3	46.3	13.7	39.0	39.0	16.0	26.0	26.0	8.0	18.0	39.0
Actuated g/C Ratio	0.19	0.42	0.42	0.12	0.35	0.35	0.15	0.24	0.24	0.07	0.16	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	655	2140	666	428	1803	561	499	836	374	250	579	619
v/s Ratio Prot	c0.20	0.35		0.10	c0.36		c0.14	c0.22		0.07	0.15	0.15
v/s Ratio Perm			0.11			0.08			0.08			0.16
v/c Ratio	1.03	0.84	0.26	0.82	1.02	0.23	0.99	0.94	0.34	1.02	0.92	0.79
Uniform Delay, d1	44.5	28.5	20.7	46.9	35.5	24.9	46.9	41.3	34.8	51.0	45.3	31.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.65	0.50
Incremental Delay, d2	43.7	3.0	0.2	11.9	26.2	0.2	36.3	19.9	2.4	58.7	21.1	6.3
Delay (s)	88.2	31.5	20.9	58.8	61.7	25.1	83.2	61.2	37.3	102.1	50.4	22.3
Level of Service	F	C	C	E	E	C	F	E	D	F	D	C
Approach Delay (s)		44.6			58.3			65.0			49.9	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM Average Control Delay	53.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95			0.95	0.95	1.00	0.95	
Frt		1.00	0.85	1.00	1.00			0.88	0.85	1.00	0.93	
Flt Protected		1.00	1.00	0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539			1540	1504	1770	3279	
Flt Permitted		1.00	1.00	0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539			1540	1504	1770	3279	
Volume (vph)	0	1099	69	399	1266	0	53	0	523	167	113	109
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1195	75	434	1376	0	58	0	568	182	123	118
RTOR Reduction (vph)	0	0	27	0	0	0	0	193	249	0	60	0
Lane Group Flow (vph)	0	1195	48	434	1376	0	0	115	69	182	181	0
Turn Type			Perm	Prot			Split		Perm	Split		
Protected Phases		4		3	8		2!	2!		6!	6!	
Permitted Phases			4						2			
Actuated Green, G (s)		28.5	28.5	21.0	53.5			17.0	17.0	17.0	17.0	
Effective Green, g (s)		28.5	28.5	21.0	53.5			17.0	17.0	17.0	17.0	
Actuated g/C Ratio		0.36	0.36	0.27	0.68			0.22	0.22	0.22	0.22	
Clearance Time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1285	575	474	2412			334	326	383	710	
v/s Ratio Prot		c0.34		c0.25	0.39			0.07		c0.10	0.06	
v/s Ratio Perm			0.03						0.05			
v/c Ratio		0.93	0.08	0.92	0.57			0.35	0.21	0.48	0.26	
Uniform Delay, d1		24.0	16.4	27.9	6.5			26.0	25.2	26.9	25.5	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		11.8	0.1	22.2	0.3			0.6	0.3	4.2	0.9	
Delay (s)		35.8	16.5	50.1	6.8			26.7	25.6	31.0	26.4	
Level of Service		D	B	D	A			C	C	C	C	
Approach Delay (s)		34.7			17.2			26.1			28.4	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	78.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

2017 BASELINE PLUS PROJECT PHASES 1-4 TRAFFIC CONDITION

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1795	1863	1583	3433	1583
Flt Permitted		0.82	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1528	1863	1583	3433	1583
Volume (vph)	93	29	12	24	316	136
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	32	13	26	343	148
RTOR Reduction (vph)	0	0	0	11	0	114
Lane Group Flow (vph)	0	133	13	15	343	34
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)		22.7	22.7	22.7	9.3	9.3
Effective Green, g (s)		22.7	22.7	22.7	9.3	9.3
Actuated g/C Ratio		0.57	0.57	0.57	0.23	0.23
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		867	1057	898	798	368
v/s Ratio Prot			0.01			
v/s Ratio Perm		c0.09		0.01	c0.10	0.02
v/c Ratio		0.15	0.01	0.02	0.43	0.09
Uniform Delay, d1		4.1	3.8	3.8	13.1	12.0
Progression Factor		1.00	0.90	0.82	1.00	1.00
Incremental Delay, d2		0.4	0.0	0.0	0.4	0.1
Delay (s)		4.5	3.4	3.1	13.5	12.2
Level of Service		A	A	A	B	B
Approach Delay (s)		4.5	3.2		13.1	
Approach LOS		A	A		B	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Volume (vph)	30	883	118	0	0	529
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	960	128	0	0	575
RTOR Reduction (vph)	0	542	0	0	0	0
Lane Group Flow (vph)	33	418	128	0	0	575
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	19.6	19.6	17.4			17.4
Effective Green, g (s)	19.6	19.6	17.4			17.4
Actuated g/C Ratio	0.44	0.44	0.39			0.39
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	771	1214	720			720
v/s Ratio Prot	0.02		0.07			c0.31
v/s Ratio Perm		c0.15				
v/c Ratio	0.04	0.34	0.18			0.80
Uniform Delay, d1	7.3	8.4	9.1			12.2
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	0.8	0.1			6.2
Delay (s)	7.4	9.2	9.2			18.4
Level of Service	A	A	A			B
Approach Delay (s)	9.2		9.2			18.4
Approach LOS	A		A			B

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3314		3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3314		3433	5085	1583	1770	3539	1583
Volume (vph)	546	237	142	40	147	109	30	731	223	141	364	387
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	593	258	154	43	160	118	33	795	242	153	396	421
RTOR Reduction (vph)	0	0	92	0	101	0	0	0	172	0	0	279
Lane Group Flow (vph)	593	258	62	43	177	0	33	795	70	153	396	142
Turn Type	Prot		pm+ov	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.9	21.8	28.0	2.4	10.3		6.2	18.4	18.4	11.4	23.6	23.6
Effective Green, g (s)	13.9	21.8	28.0	2.4	10.3		6.2	18.4	18.4	11.4	23.6	23.6
Actuated g/C Ratio	0.20	0.31	0.40	0.03	0.15		0.09	0.26	0.26	0.16	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	682	1102	724	118	488		304	1337	416	288	1193	534
v/s Ratio Prot	c0.17	0.07	0.01	0.01	c0.05		0.01	c0.16		c0.09	0.11	
v/s Ratio Perm			0.03						0.04			0.09
v/c Ratio	0.87	0.23	0.09	0.36	0.36		0.11	0.59	0.17	0.53	0.33	0.27
Uniform Delay, d1	27.2	17.9	13.0	33.1	26.9		29.4	22.5	19.9	26.9	17.3	16.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.99	1.65	5.01
Incremental Delay, d2	11.4	0.1	0.1	1.9	0.5		0.2	2.0	0.9	1.6	0.6	1.0
Delay (s)	38.6	18.0	13.1	35.0	27.4		29.5	24.5	20.8	28.3	29.3	85.7
Level of Service	D	B	B	C	C		C	C	C	C	C	F
Approach Delay (s)		29.4			28.4			23.8			53.6	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	34.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Weber/Herndon

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: A[10.0]

Street Name:	Weber									Herndon							
Approach:	North Bound					South Bound				East Bound					West Bound		
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	1	0	0	0	0	1	0	0	3	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	0	0	20			0	0	0			0	716	158			10	902	0		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	0	0	20			0	0	0			0	716	158			10	902	0		
Added Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	0	0	20			0	0	0			0	716	158			10	902	0		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	0	0	22			0	0	0			0	778	172			11	980	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
FinalVolume:	0	0	22			0	0	0			0	778	172			11	980	0		
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	6.9			xxxxx	xxxx	6.9			xxxxx	xxxx	xxxxx			4.1	xxxx	xxxxx		
FollowUpTim:	xxxxx	xxxx	3.3			xxxxx	xxxx	3.3			xxxxx	xxxx	xxxxx			2.2	xxxx	xxxxx		
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	259			xxxx	xxxx	327			xxxx	xxxx	xxxxx			950	xxxx	xxxxx		
Potent Cap.:	xxxx	xxxx	746			xxxx	xxxx	675			xxxx	xxxx	xxxxx			731	xxxx	xxxxx		
Move Cap.:	xxxx	xxxx	746			xxxx	xxxx	675			xxxx	xxxx	xxxxx			731	xxxx	xxxxx		
Volume/Cap:	xxxx	xxxx	0.03			xxxx	xxxx	0.00			xxxx	xxxx	xxxx			0.01	xxxx	xxxx		
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	0.1			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			0.0	xxxx	xxxxx		
Control Del:	xxxxx	xxxx	10.0			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			10.0	xxxx	xxxxx		
LOS by Move:	*	*	A			*	*	*			*	*	*			A	*	*		
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*			*	*	*			*	*	*			*	*	*		
ApproachDel:	10.0					xxxxxx					xxxxxx					xxxxxx				
ApproachLOS:	A					*					*					*				

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	267	205	363	101	602	190	332	102	163	181	123	257
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	290	223	395	110	654	207	361	111	177	197	134	279
RTOR Reduction (vph)	0	0	199	0	0	162	0	0	114	0	0	49
Lane Group Flow (vph)	290	223	196	110	654	45	361	111	63	197	134	230
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	17.2	34.8	4.0	15.2	15.2	17.6	24.9	24.9	7.9	15.2	21.2
Effective Green, g (s)	6.0	17.2	34.8	4.0	15.2	15.2	17.6	24.9	24.9	7.9	15.2	21.2
Actuated g/C Ratio	0.09	0.25	0.50	0.06	0.22	0.22	0.25	0.36	0.36	0.11	0.22	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	294	1249	877	196	1104	344	863	663	563	387	405	570
v/s Ratio Prot	c0.08	0.04	0.06	0.03	c0.13		c0.11	0.06		c0.06	0.07	c0.03
v/s Ratio Perm			0.07			0.03			0.04			0.11
v/c Ratio	0.99	0.18	0.22	0.56	0.59	0.13	0.42	0.17	0.11	0.51	0.33	0.40
Uniform Delay, d1	32.0	20.8	10.0	32.1	24.6	22.1	21.9	15.4	15.1	29.2	23.1	19.4
Progression Factor	1.20	1.09	0.63	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	43.6	0.1	0.1	3.6	0.9	0.2	1.5	0.5	0.4	1.1	0.5	0.5
Delay (s)	82.0	22.8	6.3	35.8	25.5	22.2	23.4	16.0	15.5	30.3	23.6	19.8
Level of Service	F	C	A	D	C	C	C	B	B	C	C	B
Approach Delay (s)		34.5			26.0			20.0			24.0	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91		0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3433	5085		3433	1760		3433	1863	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3433	5085		3433	1760		3433	1863	
Volume (vph)	50	416	15	156	680	0	46	187	109	50	288	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	452	16	170	739	0	50	203	118	54	313	0
RTOR Reduction (vph)	0	0	12	0	0	0	0	31	0	0	0	0
Lane Group Flow (vph)	54	452	4	170	739	0	50	290	0	54	313	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	3.6	14.0	14.0	4.8	15.2		2.7	22.5		2.7	22.5	
Effective Green, g (s)	3.6	14.0	14.0	4.8	15.2		2.7	22.5		2.7	22.5	
Actuated g/C Ratio	0.06	0.23	0.23	0.08	0.25		0.05	0.38		0.05	0.38	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	106	1187	369	275	1288		154	660		154	699	
v/s Ratio Prot	0.03	0.09		c0.05	c0.15		0.01	0.16		c0.02	c0.17	
v/s Ratio Perm			0.00									
v/c Ratio	0.51	0.38	0.01	0.62	0.57		0.32	0.44		0.35	0.45	
Uniform Delay, d1	27.3	19.4	17.7	26.7	19.6		27.8	14.0		27.8	14.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.8	0.2	0.0	4.1	0.6		1.2	2.1		1.4	2.1	
Delay (s)	31.2	19.6	17.7	30.8	20.2		29.0	16.1		29.2	16.2	
Level of Service	C	B	B	C	C		C	B		C	B	
Approach Delay (s)		20.7			22.2			17.9			18.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.91		0.97	0.91		0.76
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5085		3433	5085		3610
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5085		3433	5085		3610
Volume (vph)	619	0	1029	798	0	1016
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	673	0	1118	867	0	1104
RTOR Reduction (vph)	0	0	0	0	0	134
Lane Group Flow (vph)	673	0	1118	867	0	970
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	11.9		20.1	40.0		20.1
Effective Green, g (s)	11.9		20.1	40.0		20.1
Actuated g/C Ratio	0.30		0.50	1.00		0.50
Clearance Time (s)	4.0		4.0	3.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	1513		1725	5085		1814
v/s Ratio Prot	c0.13		c0.33	0.17		0.27
v/s Ratio Perm						
v/c Ratio	0.44		0.65	0.17		0.53
Uniform Delay, d1	11.4		7.3	0.0		6.8
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.2		0.8	0.0		0.3
Delay (s)	11.6		8.2	0.0		7.1
Level of Service	B		A	A		A
Approach Delay (s)	11.6			4.6	7.1	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1672		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1672		3433	1863	1583
Volume (vph)	6	1514	115	110	1704	102	99	98	212	119	133	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	1646	125	120	1852	111	108	107	230	129	145	26
RTOR Reduction (vph)	0	0	70	0	0	39	0	111	0	0	0	20
Lane Group Flow (vph)	7	1646	55	120	1852	72	108	226	0	129	145	6
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	28.5	28.5	3.2	30.9	30.9	3.2	14.1		3.2	14.1	14.1
Effective Green, g (s)	0.8	28.5	28.5	3.2	30.9	30.9	3.2	14.1		3.2	14.1	14.1
Actuated g/C Ratio	0.01	0.44	0.44	0.05	0.48	0.48	0.05	0.22		0.05	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	42	2230	694	169	2417	753	169	363		169	404	343
v/s Ratio Prot	0.00	0.32		c0.03	c0.36		0.03	c0.14		c0.04	0.08	
v/s Ratio Perm			0.03			0.05						0.00
v/c Ratio	0.17	0.74	0.08	0.71	0.77	0.10	0.64	0.62		0.76	0.36	0.02
Uniform Delay, d1	31.8	15.2	10.6	30.4	14.1	9.4	30.3	23.0		30.5	21.6	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.9	1.3	0.0	13.1	1.5	0.1	7.7	7.8		18.3	2.5	0.1
Delay (s)	33.6	16.5	10.7	43.6	15.6	9.4	38.0	30.8		48.8	24.1	20.1
Level of Service	C	B	B	D	B	A	D	C		D	C	C
Approach Delay (s)		16.1			16.9			32.6			34.4	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	293	1556	12	92	1391	142	159	217	172	284	306	351
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	318	1691	13	100	1512	154	173	236	187	309	333	382
RTOR Reduction (vph)	0	0	7	0	0	88	0	0	111	0	0	110
Lane Group Flow (vph)	318	1691	6	100	1512	66	173	236	76	309	333	272
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	27.6	27.6	3.2	22.8	29.8	5.0	16.2	16.2	7.0	18.2	18.2
Effective Green, g (s)	8.0	27.6	27.6	3.2	22.8	29.8	5.0	16.2	16.2	7.0	18.2	18.2
Actuated g/C Ratio	0.11	0.39	0.39	0.05	0.33	0.43	0.07	0.23	0.23	0.10	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	392	2005	624	157	1656	764	245	819	366	343	920	412
v/s Ratio Prot	c0.09	c0.33		0.03	0.30	0.01	0.05	0.07		c0.09	0.09	
v/s Ratio Perm			0.00			0.03			0.05			c0.17
v/c Ratio	0.81	0.84	0.01	0.64	0.91	0.09	0.71	0.29	0.21	0.90	0.36	0.66
Uniform Delay, d1	30.3	19.2	12.9	32.8	22.6	12.0	31.8	22.2	21.7	31.2	21.2	23.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.0	3.4	0.0	8.2	8.1	0.0	8.9	0.9	1.3	25.5	1.1	8.1
Delay (s)	42.3	22.7	12.9	41.0	30.7	12.0	40.7	23.0	23.0	56.6	22.3	31.2
Level of Service	D	C	B	D	C	B	D	C	C	E	C	C
Approach Delay (s)		25.7			29.7			28.2			36.0	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Volume (vph)	17	2005	1	2	1615	50	0	1	0	50	0	11
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	2179	1	2	1755	54	0	1	0	54	0	12
RTOR Reduction (vph)	0	0	0	0	0	16	0	0	0	0	0	10
Lane Group Flow (vph)	18	2179	1	2	1755	38	0	1	0	54	0	2
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	2.6	54.5	54.5	1.2	53.1	53.1		15.1		3.2		12.8
Effective Green, g (s)	2.6	54.5	54.5	1.2	53.1	53.1		15.1		3.2		12.8
Actuated g/C Ratio	0.03	0.61	0.61	0.01	0.59	0.59		0.17		0.04		0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	99	3079	959	46	3000	934		594		122		225
v/s Ratio Prot	c0.01	c0.43		0.00	0.35			0.00		c0.02		
v/s Ratio Perm			0.00			0.02						c0.00
v/c Ratio	0.18	0.71	0.00	0.04	0.58	0.04		0.00		0.44		0.01
Uniform Delay, d1	42.7	12.3	7.0	43.8	11.6	7.8		31.2		42.5		33.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2	0.9	0.8	0.0	0.4	0.3	0.0		0.0		2.6		0.0
Delay (s)	43.5	13.0	7.0	44.2	11.8	7.8		31.2		45.1		33.2
Level of Service	D	B	A	D	B	A		C		D		C
Approach Delay (s)		13.3			11.8			31.2			42.9	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	90	1917	249	396	1455	25	177	95	437	81	103	67
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	2084	271	430	1582	27	192	103	475	88	112	73
RTOR Reduction (vph)	0	0	81	0	0	7	0	0	286	0	0	62
Lane Group Flow (vph)	98	2084	190	430	1582	20	192	103	189	88	112	11
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.0	44.8	44.8	26.0	61.8	61.8	6.0	19.2	19.2	4.0	17.2	17.2
Effective Green, g (s)	9.0	44.8	44.8	26.0	61.8	61.8	6.0	19.2	19.2	4.0	17.2	17.2
Actuated g/C Ratio	0.08	0.41	0.41	0.24	0.56	0.56	0.05	0.17	0.17	0.04	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	145	2071	645	418	2857	889	187	325	276	125	291	248
v/s Ratio Prot	0.06	c0.41		c0.24	0.31		c0.06	0.06		0.03	0.06	
v/s Ratio Perm			0.12			0.01			c0.12			0.01
v/c Ratio	0.68	1.01	0.30	1.03	0.55	0.02	1.03	0.32	0.69	0.70	0.38	0.05
Uniform Delay, d1	49.1	32.6	22.0	42.0	15.3	10.7	52.0	39.7	42.6	52.4	41.7	39.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.8	21.3	0.3	51.6	0.2	0.0	73.0	2.5	13.1	16.5	3.8	0.3
Delay (s)	60.9	53.9	22.2	93.6	15.6	10.7	125.0	42.2	55.6	68.9	45.5	39.8
Level of Service	E	D	C	F	B	B	F	D	E	E	D	D
Approach Delay (s)		50.7			31.9			71.1			51.5	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM Average Control Delay	46.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	137	2165	341	204	1631	206	148	179	243	152	187	165
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	149	2353	371	222	1773	224	161	195	264	165	203	179
RTOR Reduction (vph)	0	0	52	0	0	41	0	0	120	0	0	4
Lane Group Flow (vph)	149	2353	319	222	1773	183	161	195	144	165	203	175
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.4	44.0	44.0	7.0	40.6	40.6	5.0	18.0	18.0	5.0	18.0	28.4
Effective Green, g (s)	10.4	44.0	44.0	7.0	40.6	40.6	5.0	18.0	18.0	5.0	18.0	28.4
Actuated g/C Ratio	0.12	0.49	0.49	0.08	0.45	0.45	0.06	0.20	0.20	0.06	0.20	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	205	2486	774	267	2294	714	191	708	317	191	708	570
v/s Ratio Prot	c0.08	c0.46		0.06	0.35		0.05	0.06		c0.05	0.06	0.04
v/s Ratio Perm			0.20			0.12			c0.09			0.08
v/c Ratio	0.73	0.95	0.41	0.83	0.77	0.26	0.84	0.28	0.45	0.86	0.29	0.31
Uniform Delay, d1	38.4	21.9	14.7	40.9	20.8	15.3	42.1	30.5	31.7	42.2	30.6	23.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.1	8.5	0.4	19.3	1.7	0.2	27.2	1.0	4.6	30.9	1.0	0.3
Delay (s)	50.5	30.4	15.1	60.2	22.5	15.5	69.3	31.4	36.3	73.0	31.6	23.6
Level of Service	D	C	B	E	C	B	E	C	D	E	C	C
Approach Delay (s)		29.5			25.6			43.3			41.5	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	61	2363	219	74	1906	207	87	139	269	238	213	46
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	2568	238	80	2072	225	95	151	292	259	232	50
RTOR Reduction (vph)	0	0	80	0	0	68	0	0	71	0	0	37
Lane Group Flow (vph)	66	2568	158	80	2072	157	95	151	221	259	232	13
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	50.6	50.6	3.2	50.6	50.6	4.8	16.2	16.2	14.0	25.4	25.4
Effective Green, g (s)	3.2	50.6	50.6	3.2	50.6	50.6	4.8	16.2	16.2	14.0	25.4	25.4
Actuated g/C Ratio	0.03	0.51	0.51	0.03	0.51	0.51	0.05	0.16	0.16	0.14	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	110	2573	801	110	2573	801	165	573	256	248	1292	402
v/s Ratio Prot	0.02	c0.50		c0.02	0.41		0.03	0.04		c0.15	0.05	
v/s Ratio Perm			0.10			0.10			c0.14			0.01
v/c Ratio	0.60	1.00	0.20	0.73	0.81	0.20	0.58	0.26	0.86	1.04	0.18	0.03
Uniform Delay, d1	47.8	24.7	13.6	48.0	20.6	13.5	46.6	36.7	40.8	43.0	29.2	28.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.9	17.2	0.1	21.1	1.9	0.1	4.8	1.1	29.8	69.2	0.3	0.1
Delay (s)	56.7	41.8	13.7	69.1	22.5	13.7	51.4	37.8	70.6	112.2	29.5	28.2
Level of Service	E	D	B	E	C	B	D	D	E	F	C	C
Approach Delay (s)		39.8			23.2			58.0			69.0	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM Average Control Delay	37.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Volume (vph)	776	2097	98	120	1299	313	154	1023	94	143	1248	575
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	843	2279	107	130	1412	340	167	1112	102	155	1357	625
RTOR Reduction (vph)	0	0	33	0	0	80	0	0	69	0	0	268
Lane Group Flow (vph)	843	2279	74	130	1412	261	167	1112	33	155	1357	357
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	26.0	51.0	51.0	5.0	30.0	30.0	5.0	38.6	38.6	9.4	43.0	43.0
Effective Green, g (s)	26.0	51.0	51.0	5.0	30.0	30.0	5.0	38.6	38.6	9.4	43.0	43.0
Actuated g/C Ratio	0.22	0.42	0.42	0.04	0.25	0.25	0.04	0.32	0.32	0.08	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	744	2161	673	143	1271	396	143	1636	509	269	1268	567
v/s Ratio Prot	c0.25	c0.45		0.04	0.28		c0.05	0.22		0.05	c0.38	
v/s Ratio Perm			0.05			0.16			0.02			0.23
v/c Ratio	1.13	1.05	0.11	0.91	1.11	0.66	1.17	0.68	0.06	0.58	1.07	0.63
Uniform Delay, d1	47.0	34.5	20.8	57.3	45.0	40.4	57.5	35.3	28.2	53.4	38.5	31.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	76.1	35.7	0.1	48.4	61.4	3.9	127.4	2.3	0.2	3.0	46.3	5.2
Delay (s)	123.1	70.2	20.9	105.7	106.4	44.3	184.9	37.6	28.4	56.4	84.8	37.2
Level of Service	F	E	C	F	F	D	F	D	C	E	F	D
Approach Delay (s)		82.3			95.2			54.8			68.8	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM Average Control Delay	77.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	315	1620	150	208	1659	354	26	276	108	197	678	127
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	342	1761	163	226	1803	385	28	300	117	214	737	138
RTOR Reduction (vph)	0	0	84	0	0	131	0	0	91	0	0	99
Lane Group Flow (vph)	342	1761	79	226	1803	254	28	300	26	214	737	39
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.0	33.0	33.0	7.0	31.0	31.0	1.6	18.0	18.0	6.0	22.4	22.4
Effective Green, g (s)	9.0	33.0	33.0	7.0	31.0	31.0	1.6	18.0	18.0	6.0	22.4	22.4
Actuated g/C Ratio	0.11	0.41	0.41	0.09	0.39	0.39	0.02	0.22	0.22	0.08	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	386	2098	653	300	1970	613	69	1144	356	257	1424	443
v/s Ratio Prot	c0.10	0.35		0.07	c0.35		0.01	0.06		c0.06	c0.14	
v/s Ratio Perm			0.05			0.16			0.02			0.02
v/c Ratio	0.89	0.84	0.12	0.75	0.92	0.41	0.41	0.26	0.07	0.83	0.52	0.09
Uniform Delay, d1	35.0	21.1	14.5	35.7	23.3	17.9	38.7	25.5	24.4	36.5	24.3	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.8	3.1	0.1	10.2	7.1	0.5	3.9	0.6	0.4	20.0	1.3	0.4
Delay (s)	55.8	24.2	14.6	45.9	30.4	18.3	42.6	26.1	24.8	56.5	25.6	21.6
Level of Service	E	C	B	D	C	B	D	C	C	E	C	C
Approach Delay (s)		28.3			29.9			26.8			31.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			3433	1583
Volume (vph)	474	82	0	0	78	189
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	515	89	0	0	85	205
RTOR Reduction (vph)	0	65	0	0	0	95
Lane Group Flow (vph)	515	24	0	0	85	110
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	10.8	10.8			21.2	21.2
Effective Green, g (s)	10.8	10.8			21.2	21.2
Actuated g/C Ratio	0.27	0.27			0.53	0.53
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	956	427			1819	839
v/s Ratio Prot	c0.15				0.02	
v/s Ratio Perm		0.02				c0.07
v/c Ratio	0.54	0.06			0.05	0.13
Uniform Delay, d1	12.5	10.8			4.5	4.7
Progression Factor	1.51	2.92			1.00	1.00
Incremental Delay, d2	0.6	0.1			0.0	0.3
Delay (s)	19.5	31.7			4.6	5.1
Level of Service	B	C			A	A
Approach Delay (s)	21.3			0.0	4.9	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1631		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1631		1770	1863	1583
Volume (vph)	190	192	2	297	328	48	106	23	112	3	8	356
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	209	2	323	357	52	115	25	122	3	9	387
RTOR Reduction (vph)	0	0	2	0	0	37	0	90	0	0	0	317
Lane Group Flow (vph)	207	209	0	323	357	15	115	57	0	3	9	70
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6						8
Actuated Green, G (s)	8.8	10.2	10.2	14.9	16.3	16.3	5.7	15.2		0.9	10.4	10.4
Effective Green, g (s)	8.8	10.2	10.2	14.9	16.3	16.3	5.7	15.2		0.9	10.4	10.4
Actuated g/C Ratio	0.15	0.18	0.18	0.26	0.28	0.28	0.10	0.27		0.02	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	272	631	282	461	1008	451	342	433		28	339	288
v/s Ratio Prot	0.12	0.06		c0.18	c0.10		c0.03	0.04		0.00	0.00	
v/s Ratio Perm			0.00			0.01						c0.04
v/c Ratio	0.76	0.33	0.00	0.70	0.35	0.03	0.34	0.13		0.11	0.03	0.24
Uniform Delay, d1	23.2	20.5	19.3	19.1	16.3	14.8	24.0	16.0		27.8	19.2	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	11.8	0.3	0.0	4.8	0.2	0.0	0.6	0.1		1.7	0.0	0.4
Delay (s)	35.0	20.8	19.3	23.9	16.5	14.8	24.6	16.1		29.4	19.3	20.5
Level of Service	D	C	B	C	B	B	C	B		C	B	C
Approach Delay (s)		27.9			19.6			19.8			20.5	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	57.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	244	272	184	250	151	206
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	265	296	200	272	164	224

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	265	296	472	388
Volume Left (vph)	265	0	0	164
Volume Right (vph)	0	296	272	0
Hadj (s)	0.53	-0.67	-0.31	0.12
Departure Headway (s)	7.5	6.3	5.9	6.4
Degree Utilization, x	0.55	0.52	0.77	0.69
Capacity (veh/h)	457	550	588	533
Control Delay (s)	18.2	14.6	26.0	22.7
Approach Delay (s)	16.3		26.0	22.7
Approach LOS	C		D	C

Intersection Summary			
Delay	21.3		
HCM Level of Service	C		
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1583	1770	5085	5085	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1583	1770	5085	5085	
Volume (vph)	20	284	242	996	1029	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	309	263	1083	1118	0
RTOR Reduction (vph)	0	264	0	0	0	0
Lane Group Flow (vph)	22	45	263	1083	1118	0
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	7.6	7.6	11.6	36.1	20.5	
Effective Green, g (s)	7.6	7.6	11.6	36.1	20.5	
Actuated g/C Ratio	0.15	0.15	0.22	0.70	0.40	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	260	233	397	3551	2016	
v/s Ratio Prot	0.01		c0.15	0.21	c0.22	
v/s Ratio Perm		c0.03				
v/c Ratio	0.08	0.19	0.66	0.30	0.55	
Uniform Delay, d1	19.0	19.4	18.3	3.0	12.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.4	4.1	0.2	1.1	
Delay (s)	19.2	19.8	22.4	3.2	13.2	
Level of Service	B	B	C	A	B	
Approach Delay (s)	19.7			7.0	13.2	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	51.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	69	150	382	255	204	55	409	1285	405	99	1249	171
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	163	415	277	222	60	445	1397	440	108	1358	186
RTOR Reduction (vph)	0	0	202	0	0	45	0	0	66	0	0	128
Lane Group Flow (vph)	75	163	213	277	222	15	445	1397	374	108	1358	58
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.1	13.1	13.1	7.0	17.0	17.0	10.8	28.7	28.7	3.1	21.0	21.0
Effective Green, g (s)	3.1	13.1	13.1	7.0	17.0	17.0	10.8	28.7	28.7	3.1	21.0	21.0
Actuated g/C Ratio	0.05	0.19	0.19	0.10	0.25	0.25	0.16	0.42	0.42	0.05	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	157	683	305	354	886	396	546	2149	669	157	1573	490
v/s Ratio Prot	0.02	0.05		c0.08	c0.06		c0.13	0.27		0.03	c0.27	
v/s Ratio Perm			c0.13			0.01			0.24			0.04
v/c Ratio	0.48	0.24	0.70	0.78	0.25	0.04	0.82	0.65	0.56	0.69	0.86	0.12
Uniform Delay, d1	31.6	23.2	25.6	29.7	20.4	19.3	27.6	15.6	14.8	31.9	22.1	16.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.2	6.8	10.7	0.1	0.0	9.1	1.5	3.3	11.8	6.5	0.5
Delay (s)	33.9	23.4	32.4	40.5	20.5	19.3	36.7	17.1	18.2	43.8	28.6	17.3
Level of Service	C	C	C	D	C	B	D	B	B	D	C	B
Approach Delay (s)		30.3			30.3			21.2			28.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	67.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEU	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863
Volume (vph)	12	74	346	223	60	271	5	81	13	16	26	67
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	80	376	242	65	295	5	88	14	17	28	73
RTOR Reduction (vph)	0	0	0	189	0	0	4	0	0	11	0	0
Lane Group Flow (vph)	0	93	376	53	65	295	1	88	14	6	28	73
Turn Type	Prot	Prot		Perm	Prot		Perm	Prot		Perm	Prot	
Protected Phases	7	7	4		3	8		5	2		1	6
Permitted Phases				4		8	8		2	2		
Actuated Green, G (s)		4.3	11.0	11.0	4.2	10.9	10.9	8.2	17.6	17.6	1.5	10.9
Effective Green, g (s)		4.3	11.0	11.0	4.2	10.9	10.9	8.2	17.6	17.6	1.5	10.9
Actuated g/C Ratio		0.09	0.22	0.22	0.08	0.22	0.22	0.16	0.35	0.35	0.03	0.22
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		151	774	346	148	767	343	289	652	554	53	404
v/s Ratio Prot		c0.05	c0.11		0.04	0.08		c0.05	0.01		0.02	c0.04
v/s Ratio Perm				0.03			0.00			0.00		
v/c Ratio		0.62	0.49	0.15	0.44	0.38	0.00	0.30	0.02	0.01	0.53	0.18
Uniform Delay, d1		22.2	17.2	15.9	21.9	16.8	15.4	18.5	10.7	10.7	24.1	16.1
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		7.3	0.5	0.2	2.1	0.3	0.0	0.6	0.0	0.0	9.2	0.2
Delay (s)		29.5	17.7	16.1	24.0	17.2	15.4	19.1	10.7	10.7	33.2	16.3
Level of Service		C	B	B	C	B	B	B	B	B	C	B
Approach Delay (s)			18.7			18.4			16.9			17.8
Approach LOS			B			B			B			B

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	50.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWR
Lane Configurations	
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Volume (vph)	153
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	166
RTOR Reduction (vph)	130
Lane Group Flow (vph)	36
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	10.9
Effective Green, g (s)	10.9
Actuated g/C Ratio	0.22
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	343
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.10
Uniform Delay, d1	15.8
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	15.9
Level of Service	B
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1751		1770	1863	1583	1770	1826		1770	1863	1583
Flt Permitted	0.58	1.00		0.58	1.00	1.00	0.74	1.00		0.68	1.00	1.00
Satd. Flow (perm)	1073	1751		1089	1863	1583	1375	1826		1265	1863	1583
Volume (vph)	48	158	105	16	278	96	132	97	15	88	27	127
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	172	114	17	302	104	143	105	16	96	29	138
RTOR Reduction (vph)	0	70	0	0	0	73	0	10	0	0	0	82
Lane Group Flow (vph)	52	216	0	17	302	31	143	111	0	96	29	56
Turn Type	Perm			Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)	7.9	7.9		7.9	7.9	7.9	10.8	10.8		10.8	10.8	10.8
Effective Green, g (s)	7.9	7.9		7.9	7.9	7.9	10.8	10.8		10.8	10.8	10.8
Actuated g/C Ratio	0.30	0.30		0.30	0.30	0.30	0.40	0.40		0.40	0.40	0.40
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	317	518		322	551	468	556	739		512	754	640
v/s Ratio Prot		0.12			c0.16			0.06			0.02	
v/s Ratio Perm	0.05			0.02		0.02	c0.10			0.08		0.04
v/c Ratio	0.16	0.42		0.05	0.55	0.07	0.26	0.15		0.19	0.04	0.09
Uniform Delay, d1	7.0	7.6		6.7	7.9	6.8	5.3	5.0		5.1	4.8	4.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.5		0.1	1.1	0.1	0.2	0.1		0.2	0.0	0.1
Delay (s)	7.2	8.1		6.8	9.0	6.8	5.5	5.1		5.3	4.8	5.0
Level of Service	A	A		A	A	A	A	A		A	A	A
Approach Delay (s)		8.0			8.4			5.4			5.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	26.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86		0.95	0.95		0.95	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.86		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.99	
Satd. Flow (prot)	1770	5085	1583	1770	6339		1681	1519		1681	1553	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.99		0.95	0.87	
Satd. Flow (perm)	1770	5085	1583	1770	6339		1681	1504		1681	1366	
Volume (vph)	306	2433	416	196	1993	155	126	0	173	277	0	197
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	333	2645	452	213	2166	168	137	0	188	301	0	214
RTOR Reduction (vph)	0	0	151	0	10	0	0	146	0	0	71	0
Lane Group Flow (vph)	333	2645	301	213	2324	0	121	58	0	225	219	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	23.0	59.0	59.0	14.0	50.0		12.7	26.6		15.0	31.2	
Effective Green, g (s)	23.0	59.0	59.0	14.0	50.0		12.7	26.6		15.0	31.2	
Actuated g/C Ratio	0.20	0.50	0.50	0.12	0.42		0.11	0.23		0.13	0.26	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	345	2545	792	210	2688		181	341		214	385	
v/s Ratio Prot	c0.19	c0.52		0.12	0.37		0.07	0.02		c0.13	c0.07	
v/s Ratio Perm			0.19					0.02			c0.08	
v/c Ratio	0.97	1.04	0.38	1.01	0.86		0.67	0.17		1.05	0.57	
Uniform Delay, d1	47.1	29.5	18.2	52.0	30.9		50.6	36.8		51.4	37.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	38.9	29.1	1.4	65.8	4.0		9.0	0.2		75.7	1.9	
Delay (s)	85.9	58.5	19.5	117.8	34.9		59.6	37.0		127.2	39.4	
Level of Service	F	E	B	F	C		E	D		F	D	
Approach Delay (s)		56.0			41.8			45.4			77.8	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM Average Control Delay	51.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	117.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	71	6	9	0	11	170	11	59	0	56	17	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	77	7	10	0	12	185	12	64	0	61	18	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	392	233	23	241	238	32	28			64		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	392	233	23	241	238	32	28			64		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	82	99	99	100	98	82	99			96		
cM capacity (veh/h)	423	635	1048	656	631	1034	1583			1536		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	77	7	10	0	12	185	12	32	32	0	61	28
Volume Left	77	0	0	0	0	0	12	0	0	0	61	0
Volume Right	0	0	10	0	0	185	0	0	0	0	0	10
cSH	423	635	1048	1700	631	1034	1583	1700	1700	1700	1536	1700
Volume to Capacity	0.18	0.01	0.01	0.00	0.02	0.18	0.01	0.02	0.02	0.00	0.04	0.02
Queue Length 95th (ft)	16	1	1	0	1	16	1	0	0	0	3	0
Control Delay (s)	15.4	10.7	8.5	0.0	10.8	9.2	7.3	0.0	0.0	0.0	7.4	0.0
Lane LOS	C	B	A	A	B	A	A				A	
Approach Delay (s)	14.3			9.3			1.1				5.1	
Approach LOS	B			A								

Intersection Summary				
Average Delay	8.2			
Intersection Capacity Utilization	27.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0				4.0		4.0
Lane Util. Factor		0.91			0.86	1.00				0.97		0.88
Frt		1.00			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085			6408	1583				3433		2787
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085			6408	1583				3433		2787
Volume (vph)	0	2036	0	0	2069	96	0	0	0	199	0	994
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2213	0	0	2249	104	0	0	0	216	0	1080
RTOR Reduction (vph)	0	0	0	0	0	55	0	0	0	0	0	1
Lane Group Flow (vph)	0	2213	0	0	2249	49	0	0	0	216	0	1079
Turn Type						Perm				custom		custom
Protected Phases		2			6							
Permitted Phases						6				8		8
Actuated Green, G (s)		28.0			28.0	28.0				24.0		24.0
Effective Green, g (s)		28.0			28.0	28.0				24.0		24.0
Actuated g/C Ratio		0.47			0.47	0.47				0.40		0.40
Clearance Time (s)		4.0			4.0	4.0				4.0		4.0
Vehicle Extension (s)		3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)		2373			2990	739				1373		1115
v/s Ratio Prot		c0.44			0.35							
v/s Ratio Perm						0.03				0.06		c0.39
v/c Ratio		0.93			0.75	0.07				0.16		0.97
Uniform Delay, d1		15.1			13.1	8.8				11.5		17.6
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		8.2			1.8	0.2				0.1		19.4
Delay (s)		23.4			14.9	9.0				11.6		37.0
Level of Service		C			B	A				B		D
Approach Delay (s)		23.4			14.7			0.0			32.7	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0		4.0			
Lane Util. Factor		0.91	1.00		0.91		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		5085	1583		5085		1770		1583			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		5085	1583		5085		1770		1583			
Volume (vph)	0	2253	362	0	1334	0	21	0	82	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2449	393	0	1450	0	23	0	89	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	38	0	0	0
Lane Group Flow (vph)	0	2449	393	0	1450	0	23	0	51	0	0	0
Turn Type			Free				custom		custom			
Protected Phases		2			6							
Permitted Phases			Free				4		4			
Actuated Green, G (s)		60.6	75.3		60.6		6.7		6.7			
Effective Green, g (s)		60.6	75.3		60.6		6.7		6.7			
Actuated g/C Ratio		0.80	1.00		0.80		0.09		0.09			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		4092	1583		4092		157		141			
v/s Ratio Prot		c0.48			0.29							
v/s Ratio Perm			c0.25				0.01		0.03			
v/c Ratio		0.60	0.25		0.35		0.15		0.36			
Uniform Delay, d1		2.8	0.0		2.0		31.7		32.3			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		0.7	0.4		0.2		0.4		1.6			
Delay (s)		3.4	0.4		2.2		32.1		33.9			
Level of Service		A	A		A		C		C			
Approach Delay (s)		3.0			2.2			33.5			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	3.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	75.3	Sum of lost time (s)	4.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.46	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	863	1863	1770	1583
Volume (vph)	425	179	539	578	270	409
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	462	195	586	628	293	445
RTOR Reduction (vph)	0	53	0	0	0	363
Lane Group Flow (vph)	462	142	586	628	293	82
Turn Type		Perm	Perm			Perm
Protected Phases	6			2	4	
Permitted Phases		6	2			4
Actuated Green, G (s)	65.4	65.4	65.4	65.4	16.6	16.6
Effective Green, g (s)	65.4	65.4	65.4	65.4	16.6	16.6
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1354	1150	627	1354	326	292
v/s Ratio Prot	0.25			0.34	c0.17	
v/s Ratio Perm		0.09	c0.68			0.05
v/c Ratio	0.34	0.12	0.93	0.46	0.90	0.28
Uniform Delay, d1	4.5	3.7	10.5	5.1	35.9	31.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.2	23.0	1.1	25.8	0.5
Delay (s)	5.2	3.9	33.5	6.2	61.7	32.1
Level of Service	A	A	C	A	E	C
Approach Delay (s)	4.8			19.4	43.8	
Approach LOS	A			B	D	

Intersection Summary			
HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0			4.0	
Lane Util. Factor		0.95			1.00	1.00		1.00			1.00	
Frt		0.99			1.00	0.85		1.00			0.92	
Flt Protected		0.98			1.00	1.00		0.95			0.98	
Satd. Flow (prot)		3432			1859	1583		1771			1685	
Flt Permitted		0.62			0.93	1.00		0.55			0.83	
Satd. Flow (perm)		2162			1742	1583		1013			1431	
Volume (vph)	403	609	94	17	387	272	54	0	1	311	4	398
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	438	662	102	18	421	296	59	0	1	338	4	433
RTOR Reduction (vph)	0	9	0	0	0	116	0	1	0	0	61	0
Lane Group Flow (vph)	0	1193	0	0	439	180	0	59	0	0	714	0
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2		2	4			8		
Actuated Green, G (s)		36.0			36.0	36.0		31.0			31.0	
Effective Green, g (s)		36.0			36.0	36.0		31.0			31.0	
Actuated g/C Ratio		0.48			0.48	0.48		0.41			0.41	
Clearance Time (s)		4.0			4.0	4.0		4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		1038			836	760		419			591	
v/s Ratio Prot												
v/s Ratio Perm		c0.55			0.25	0.11		0.06			c0.50	
v/c Ratio		1.23dl			0.53	0.24		0.14			1.21	
Uniform Delay, d1		19.5			13.6	11.4		13.7			22.0	
Progression Factor		1.00			1.00	1.00		1.00			1.00	
Incremental Delay, d2		78.5			2.4	0.7		0.2			108.9	
Delay (s)		98.0			15.9	12.2		13.9			130.9	
Level of Service		F			B	B		B			F	
Approach Delay (s)		98.0			14.4			13.9			130.9	
Approach LOS		F			B			B			F	

Intersection Summary			
HCM Average Control Delay	83.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	1863	1583
Flt Permitted	0.28	1.00	1.00	0.28	1.00	1.00	0.75	1.00	1.00	0.75	1.00	1.00
Satd. Flow (perm)	525	3539	1583	525	3539	1583	1394	3539	1583	1396	1863	1583
Volume (vph)	17	834	36	25	929	28	166	11	18	105	13	47
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	907	39	27	1010	30	180	12	20	114	14	51
RTOR Reduction (vph)	0	0	21	0	0	17	0	0	14	0	0	25
Lane Group Flow (vph)	18	907	18	27	1010	13	180	12	6	114	14	26
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	14.2	14.2	14.2	14.2	14.2	14.2	9.4	9.4	9.4	9.4	9.4	9.4
Effective Green, g (s)	14.2	14.2	14.2	14.2	14.2	14.2	9.4	9.4	9.4	9.4	9.4	9.4
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45	0.30	0.30	0.30	0.30	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	236	1590	711	236	1590	711	415	1053	471	415	554	471
v/s Ratio Prot		0.26			c0.29			0.00			0.01	
v/s Ratio Perm	0.03		0.01	0.05		0.01	c0.13		0.00	0.08		0.02
v/c Ratio	0.08	0.57	0.02	0.11	0.64	0.02	0.43	0.01	0.01	0.27	0.03	0.05
Uniform Delay, d1	5.0	6.4	4.8	5.1	6.7	4.8	9.0	7.8	7.8	8.5	7.9	7.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.5	0.0	0.2	0.8	0.0	0.7	0.0	0.0	0.4	0.0	0.0
Delay (s)	5.1	6.9	4.9	5.3	7.5	4.8	9.7	7.8	7.8	8.9	7.9	8.0
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		6.8			7.4			9.4			8.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	31.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3499		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3499		1770	3539	1583	1770	3539	1583
Volume (vph)	107	869	79	115	743	62	60	625	52	29	676	215
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	116	945	86	125	808	67	65	679	57	32	735	234
RTOR Reduction (vph)	0	0	59	0	10	0	0	0	41	0	0	170
Lane Group Flow (vph)	116	945	27	125	865	0	65	679	16	32	735	64
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	3.8	18.2	18.2	5.1	19.5		2.1	16.3	16.3	1.4	15.6	15.6
Effective Green, g (s)	3.8	18.2	18.2	5.1	19.5		2.1	16.3	16.3	1.4	15.6	15.6
Actuated g/C Ratio	0.07	0.32	0.32	0.09	0.34		0.04	0.29	0.29	0.02	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	118	1130	505	158	1197		65	1012	453	43	969	433
v/s Ratio Prot	0.07	c0.27		c0.07	0.25		c0.04	0.19		0.02	c0.21	
v/s Ratio Perm			0.02						0.01			0.04
v/c Ratio	0.98	0.84	0.05	0.79	0.72		1.00	0.67	0.04	0.74	0.76	0.15
Uniform Delay, d1	26.6	18.0	13.4	25.4	16.4		27.4	18.0	14.7	27.6	19.0	15.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	77.1	5.5	0.0	23.1	2.2		111.6	1.8	0.0	50.5	3.4	0.2
Delay (s)	103.7	23.5	13.5	48.5	18.6		139.1	19.7	14.7	78.1	22.4	15.8
Level of Service	F	C	B	D	B		F	B	B	E	C	B
Approach Delay (s)		30.9			22.3			29.1			22.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00		1.00	0.88	1.00	0.91		0.97	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583		1863	2787	1770	5085		3433	5085	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583		1863	2787	1770	5085		3433	5085	1583
Volume (vph)	233	22	7	0	16	867	7	1525	0	390	863	163
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	253	24	8	0	17	942	8	1658	0	424	938	177
RTOR Reduction (vph)	0	0	6	0	0	34	0	0	0	0	0	37
Lane Group Flow (vph)	253	24	2	0	17	908	8	1658	0	424	938	140
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.5	18.1	18.1		2.6	25.8	0.7	38.5		23.2	61.0	72.5
Effective Green, g (s)	11.5	18.1	18.1		2.6	25.8	0.7	38.5		23.2	61.0	72.5
Actuated g/C Ratio	0.13	0.20	0.20		0.03	0.28	0.01	0.42		0.25	0.66	0.79
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	430	367	312		53	905	13	2133		868	3379	1319
v/s Ratio Prot	c0.07	0.01			0.01	c0.25	0.00	c0.33		0.12	0.18	0.01
v/s Ratio Perm			0.00			0.07						0.08
v/c Ratio	0.59	0.07	0.01		0.32	1.00	0.62	0.78		0.49	0.28	0.11
Uniform Delay, d1	37.9	30.0	29.6		43.7	33.0	45.4	23.0		29.2	6.3	2.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	0.1	0.0		3.5	30.8	64.0	1.8		0.4	0.0	0.0
Delay (s)	40.0	30.0	29.6		47.2	63.8	109.5	24.8		29.7	6.4	2.2
Level of Service	D	C	C		D	E	F	C		C	A	A
Approach Delay (s)		38.8			63.5			25.2			12.3	
Approach LOS		D			E			C			B	

Intersection Summary			
HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	91.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.99			1.00			1.00	0.85		1.00	0.85
Flt Protected		1.00			1.00			0.96	1.00		1.00	1.00
Satd. Flow (prot)		1838			1853			1785	1583		1856	1583
Flt Permitted		0.99			0.99			0.85	1.00		0.99	1.00
Satd. Flow (perm)		1823			1831			1584	1583		1838	1583
Volume (vph)	7	235	24	3	94	3	12	2	4	1	11	4
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	255	26	3	102	3	13	2	4	1	12	4
RTOR Reduction (vph)	0	10	0	0	2	0	0	0	2	0	0	2
Lane Group Flow (vph)	0	279	0	0	106	0	0	15	2	0	13	2
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		8.0			8.0			9.7	9.7		9.7	9.7
Effective Green, g (s)		8.0			8.0			9.7	9.7		9.7	9.7
Actuated g/C Ratio		0.31			0.31			0.38	0.38		0.38	0.38
Clearance Time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		567			570			598	597		694	597
v/s Ratio Prot												
v/s Ratio Perm		c0.15			0.06			c0.01	0.00		0.01	0.00
v/c Ratio		0.49			0.19			0.03	0.00		0.02	0.00
Uniform Delay, d1		7.2			6.5			5.0	5.0		5.0	5.0
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		0.7			0.2			0.0	0.0		0.0	0.0
Delay (s)		7.9			6.6			5.0	5.0		5.0	5.0
Level of Service		A			A			A	A		A	A
Approach Delay (s)		7.9			6.6			5.0			5.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	25.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0					4.0		4.0
Lane Util. Factor		0.95	1.00		0.95					1.00		1.00
Frt		1.00	0.85		1.00					1.00		0.85
Flt Protected		1.00	1.00		1.00					0.95		1.00
Satd. Flow (prot)		3539	1583		3539					1770		1583
Flt Permitted		1.00	1.00		1.00					0.95		1.00
Satd. Flow (perm)		3539	1583		3539					1770		1583
Volume (vph)	0	661	62	0	709	0	0	0	0	227	0	38
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	718	67	0	771	0	0	0	0	247	0	41
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	23
Lane Group Flow (vph)	0	718	67	0	771	0	0	0	0	247	0	18
Turn Type			Free			Free				custom		custom
Protected Phases		4			8							
Permitted Phases			Free			Free				6		6
Actuated Green, G (s)		14.7	40.0		14.7					17.3		17.3
Effective Green, g (s)		14.7	40.0		14.7					17.3		17.3
Actuated g/C Ratio		0.37	1.00		0.37					0.43		0.43
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		1301	1583		1301					766		685
v/s Ratio Prot		0.20			c0.22							
v/s Ratio Perm			0.04							c0.14		0.01
v/c Ratio		0.55	0.04		0.59					0.32		0.03
Uniform Delay, d1		10.0	0.0		10.2					7.5		6.5
Progression Factor		1.00	1.00		1.24					1.00		1.00
Incremental Delay, d2		0.5	0.1		0.4					1.1		0.1
Delay (s)		10.5	0.1		13.1					8.6		6.6
Level of Service		B	A		B					A		A
Approach Delay (s)		9.7			13.1			0.0			8.3	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0		4.0			
Lane Util. Factor		0.95	1.00		0.95	1.00	1.00		1.00			
Frt		1.00	0.85		1.00	0.85	1.00		0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3539	1583		3539	1583	1770		1583			
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3539	1583		3539	1583	1770		1583			
Volume (vph)	0	602	22	0	903	447	573	0	129	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	654	24	0	982	486	623	0	140	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	72	0	0	0
Lane Group Flow (vph)	0	654	24	0	982	486	623	0	68	0	0	0
Turn Type			Free			Free	custom		custom			
Protected Phases		4			8							
Permitted Phases			Free			Free	2		2			
Actuated Green, G (s)		14.8	40.0		14.8	40.0	17.2		17.2			
Effective Green, g (s)		14.8	40.0		14.8	40.0	17.2		17.2			
Actuated g/C Ratio		0.37	1.00		0.37	1.00	0.43		0.43			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		1309	1583		1309	1583	761		681			
v/s Ratio Prot		0.18			c0.28							
v/s Ratio Perm			0.02			0.31	c0.35		0.04			
v/c Ratio		0.50	0.02		0.75	0.31	0.82		0.10			
Uniform Delay, d1		9.7	0.0		11.0	0.0	10.0		6.8			
Progression Factor		0.79	1.00		1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.3	0.0		2.5	0.5	9.6		0.3			
Delay (s)		8.0	0.0		13.5	0.5	19.6		7.1			
Level of Service		A	A		B	A	B		A			
Approach Delay (s)		7.7			9.2			17.3			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	9	631	41	349	802	379	563	389	3	16	331	594
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	686	45	379	872	412	612	423	3	17	360	646
RTOR Reduction (vph)	0	0	30	0	0	212	0	0	2	0	0	42
Lane Group Flow (vph)	10	686	15	379	872	200	612	423	1	17	360	604
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		1	6		5	2	3
Permitted Phases			4			8			6			2
Actuated Green, G (s)	0.8	26.2	26.2	25.0	50.4	50.4	40.0	50.8	50.8	2.0	12.8	37.8
Effective Green, g (s)	0.8	26.2	26.2	25.0	50.4	50.4	40.0	50.8	50.8	2.0	12.8	37.8
Actuated g/C Ratio	0.01	0.22	0.22	0.21	0.42	0.42	0.33	0.42	0.42	0.02	0.11	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	12	773	346	369	1486	665	590	1498	670	30	377	551
v/s Ratio Prot	0.01	c0.19		0.21	0.25		c0.35	0.12		0.01	0.10	c0.23
v/s Ratio Perm			0.01			0.13			0.00			0.15
v/c Ratio	0.83	0.89	0.04	1.03	0.59	0.30	1.04	0.28	0.00	0.57	0.95	1.10
Uniform Delay, d1	59.5	45.5	37.0	47.5	26.8	23.1	40.0	22.7	20.0	58.6	53.3	41.1
Progression Factor	1.00	1.00	1.00	0.89	1.41	3.46	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	168.3	12.0	0.1	44.0	0.4	0.2	47.0	0.5	0.0	22.3	36.3	67.4
Delay (s)	227.8	57.5	37.1	86.5	38.2	80.1	87.0	23.1	20.0	80.8	89.6	108.5
Level of Service	F	E	D	F	D	F	F	C	B	F	F	F
Approach Delay (s)		58.5			59.6			60.8			101.4	
Approach LOS		E			E			E			F	

Intersection Summary			
HCM Average Control Delay	69.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	92	1287	114	107	1230	58	195	157	87	13	742	129
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	1399	124	116	1337	63	212	171	95	14	807	140
RTOR Reduction (vph)	0	0	85	0	0	43	0	0	62	0	0	102
Lane Group Flow (vph)	100	1399	39	116	1337	20	212	171	33	14	807	39
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	18.9	18.9	3.2	18.9	18.9	5.4	21.1	21.1	0.8	16.5	16.5
Effective Green, g (s)	3.2	18.9	18.9	3.2	18.9	18.9	5.4	21.1	21.1	0.8	16.5	16.5
Actuated g/C Ratio	0.05	0.32	0.32	0.05	0.32	0.32	0.09	0.35	0.35	0.01	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1602	499	183	1602	499	309	1245	557	46	973	435
v/s Ratio Prot	0.03	c0.28		c0.03	0.26		c0.06	0.05		0.00	c0.23	
v/s Ratio Perm			0.02			0.01			0.02			0.02
v/c Ratio	0.55	0.87	0.08	0.63	0.83	0.04	0.69	0.14	0.06	0.30	0.83	0.09
Uniform Delay, d1	27.7	19.4	14.4	27.8	19.1	14.3	26.5	13.3	12.9	29.3	20.4	16.2
Progression Factor	1.04	0.99	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.5	0.0	7.0	3.9	0.0	6.2	0.2	0.2	3.7	8.1	0.4
Delay (s)	29.2	19.7	13.6	34.8	23.0	14.3	32.7	13.5	13.1	33.0	28.6	16.6
Level of Service	C	B	B	C	C	B	C	B	B	C	C	B
Approach Delay (s)		19.8			23.6			21.9			26.9	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	127	1719	92	141	1116	39	181	424	246	242	433	527
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	1868	100	153	1213	42	197	461	267	263	471	573
RTOR Reduction (vph)	0	0	45	0	0	29	0	0	96	0	0	7
Lane Group Flow (vph)	138	1868	55	153	1213	13	197	461	171	263	471	566
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.7	30.0	30.0	4.0	23.3	23.3	6.0	18.0	18.0	7.0	19.0	29.7
Effective Green, g (s)	10.7	30.0	30.0	4.0	23.3	23.3	6.0	18.0	18.0	7.0	19.0	29.7
Actuated g/C Ratio	0.14	0.40	0.40	0.05	0.31	0.31	0.08	0.24	0.24	0.09	0.25	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	490	2034	633	183	1580	492	275	849	380	320	897	711
v/s Ratio Prot	0.04	c0.37		0.04	0.24		0.06	0.13		c0.08	0.13	c0.11
v/s Ratio Perm			0.03			0.01			0.11			0.24
v/c Ratio	0.28	0.92	0.09	0.84	0.77	0.03	0.72	0.54	0.45	0.82	0.53	0.80
Uniform Delay, d1	28.7	21.3	14.0	35.2	23.4	18.0	33.7	24.9	24.3	33.4	24.1	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	7.1	0.1	26.8	2.3	0.0	8.6	2.5	3.8	15.5	2.2	6.2
Delay (s)	29.0	28.5	14.0	62.0	25.7	18.0	42.3	27.4	28.1	48.9	26.3	26.2
Level of Service	C	C	B	E	C	B	D	C	C	D	C	C
Approach Delay (s)		27.8			29.4			30.8			30.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	148	1668	146	104	1320	61	179	494	400	149	434	58
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	161	1813	159	113	1435	66	195	537	435	162	472	63
RTOR Reduction (vph)	0	0	87	0	0	39	0	0	97	0	0	47
Lane Group Flow (vph)	161	1813	72	113	1435	27	195	537	338	162	472	16
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	27.8	27.8	3.2	26.0	26.0	5.5	18.4	18.4	4.6	17.5	17.5
Effective Green, g (s)	5.0	27.8	27.8	3.2	26.0	26.0	5.5	18.4	18.4	4.6	17.5	17.5
Actuated g/C Ratio	0.07	0.40	0.40	0.05	0.37	0.37	0.08	0.26	0.26	0.07	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	245	2019	629	157	1889	588	270	930	416	226	885	396
v/s Ratio Prot	c0.05	c0.36		0.03	0.28		c0.06	0.15		0.05	0.13	
v/s Ratio Perm			0.05			0.02			c0.21			0.01
v/c Ratio	0.66	0.90	0.11	0.72	0.76	0.05	0.72	0.58	0.81	0.72	0.53	0.04
Uniform Delay, d1	31.7	19.8	13.3	33.0	19.3	14.1	31.5	22.4	24.2	32.1	22.7	19.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	5.7	0.1	14.6	1.8	0.0	9.2	2.6	15.7	10.3	2.3	0.2
Delay (s)	37.9	25.5	13.4	47.6	21.1	14.1	40.7	25.0	39.9	42.4	25.0	20.1
Level of Service	D	C	B	D	C	B	D	C	D	D	C	C
Approach Delay (s)		25.5			22.6			33.2			28.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95			0.95	0.95	1.00	0.95	
Frt		1.00	0.85	1.00	1.00			0.87	0.85	1.00	0.97	
Flt Protected		1.00	1.00	0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539			1527	1504	1770	3429	
Flt Permitted		1.00	1.00	0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539			1527	1504	1770	3429	
Volume (vph)	0	1285	31	107	579	0	29	0	448	178	354	93
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1397	34	116	629	0	32	0	487	193	385	101
RTOR Reduction (vph)	0	0	9	0	0	0	0	168	168	0	26	0
Lane Group Flow (vph)	0	1397	25	116	629	0	0	101	82	193	460	0
Turn Type			Perm	Prot			Split		Perm	Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)		36.1	36.1	6.0	46.1			10.4	10.4	16.0	16.0	
Effective Green, g (s)		36.1	36.1	6.0	46.1			10.4	10.4	16.0	16.0	
Actuated g/C Ratio		0.43	0.43	0.07	0.55			0.12	0.12	0.19	0.19	
Clearance Time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1512	676	126	1931			188	185	335	649	
v/s Ratio Prot		c0.39		c0.07	0.18			c0.07		0.11	c0.13	
v/s Ratio Perm			0.02						0.05			
v/c Ratio		0.92	0.04	0.92	0.33			0.54	0.44	0.58	0.71	
Uniform Delay, d1		22.9	14.1	39.0	10.6			34.8	34.4	31.2	32.1	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		9.8	0.0	56.2	0.1			2.9	1.7	7.0	6.4	
Delay (s)		32.7	14.1	95.2	10.7			37.7	36.0	38.2	38.5	
Level of Service		C	B	F	B			D	D	D	D	
Approach Delay (s)		32.3			23.9			36.9			38.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.91	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1515	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98	1.00	0.59		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1515	1504	2125		1583
Volume (vph)	363	1015	0	0	571	245	288	5	370	220	0	233
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	395	1103	0	0	621	266	313	5	402	239	0	253
RTOR Reduction (vph)	0	0	0	0	0	143	0	57	76	0	0	207
Lane Group Flow (vph)	395	1103	0	0	621	123	214	197	176	239	0	46
Turn Type	Prot					Prot	Split		Perm	custom		custom
Protected Phases	7	4			8	8	2	2				
Permitted Phases									2	6		6
Actuated Green, G (s)	21.8	43.4			17.6	17.6	17.0	17.0	17.0	16.0		16.0
Effective Green, g (s)	21.8	43.4			17.6	17.6	17.0	17.0	17.0	16.0		16.0
Actuated g/C Ratio	0.25	0.49			0.20	0.20	0.19	0.19	0.19	0.18		0.18
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	436	1737			705	315	323	291	289	385		287
v/s Ratio Prot	c0.22	0.31			c0.18	0.08	0.13	c0.13				
v/s Ratio Perm									0.12	c0.11		0.03
v/c Ratio	0.91	0.64			0.88	0.39	0.66	0.68	0.61	0.62		0.16
Uniform Delay, d1	32.3	16.6			34.4	30.7	33.0	33.1	32.7	33.4		30.5
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	22.0	0.8			12.4	0.8	10.2	11.9	9.2	7.3		1.2
Delay (s)	54.3	17.4			46.8	31.5	43.3	45.1	41.9	40.7		31.7
Level of Service	D	B			D	C	D	D	D	D		C
Approach Delay (s)		27.1			42.2			43.4			36.1	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	35.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		0.97	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1799	1863	1583	3433	1583
Flt Permitted		0.82	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1523	1863	1583	3433	1583
Volume (vph)	84	34	14	171	1479	111
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	37	15	186	1608	121
RTOR Reduction (vph)	0	0	0	105	0	69
Lane Group Flow (vph)	0	128	15	81	1608	52
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)		26.0	26.0	26.0	26.0	26.0
Effective Green, g (s)		26.0	26.0	26.0	26.0	26.0
Actuated g/C Ratio		0.43	0.43	0.43	0.43	0.43
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		660	807	686	1488	686
v/s Ratio Prot			0.01			
v/s Ratio Perm		c0.08		0.05	c0.47	0.03
v/c Ratio		0.19	0.02	0.12	1.08	0.08
Uniform Delay, d1		10.5	9.7	10.2	17.0	10.0
Progression Factor		1.00	1.00	1.00	1.54	2.36
Incremental Delay, d2		0.7	0.0	0.3	37.7	0.0
Delay (s)		11.2	9.8	10.5	63.8	23.6
Level of Service		B	A	B	E	C
Approach Delay (s)		11.2	10.4		61.0	
Approach LOS		B	B		E	

Intersection Summary			
HCM Average Control Delay	53.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Volume (vph)	46	1281	263	0	0	1617
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	1392	286	0	0	1758
RTOR Reduction (vph)	0	980	0	0	0	0
Lane Group Flow (vph)	50	412	286	0	0	1758
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	20.3	20.3	91.7			91.7
Effective Green, g (s)	20.3	20.3	91.7			91.7
Actuated g/C Ratio	0.17	0.17	0.76			0.76
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	299	471	1424			1424
v/s Ratio Prot	0.03		0.15			c0.94
v/s Ratio Perm		c0.15				
v/c Ratio	0.17	0.87	0.20			1.23
Uniform Delay, d1	42.6	48.6	3.9			14.2
Progression Factor	1.00	1.00	1.52			1.00
Incremental Delay, d2	1.2	19.7	0.1			111.8
Delay (s)	43.8	68.3	6.1			126.0
Level of Service	D	E	A			F
Approach Delay (s)	67.4		6.1			126.0
Approach LOS	E		A			F

Intersection Summary			
HCM Average Control Delay	91.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3193		3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3193		3433	5085	1583	1770	3539	1583
Volume (vph)	403	239	100	461	240	449	67	1059	375	410	1046	356
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	438	260	109	501	261	488	73	1151	408	446	1137	387
RTOR Reduction (vph)	0	0	92	0	326	0	0	0	161	0	0	209
Lane Group Flow (vph)	438	260	17	501	423	0	73	1151	247	446	1137	178
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.7	14.4	14.4	14.0	14.7		4.1	21.6	21.6	24.0	41.5	41.5
Effective Green, g (s)	13.7	14.4	14.4	14.0	14.7		4.1	21.6	21.6	24.0	41.5	41.5
Actuated g/C Ratio	0.15	0.16	0.16	0.16	0.16		0.05	0.24	0.24	0.27	0.46	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	523	566	253	534	522		156	1220	380	472	1632	730
v/s Ratio Prot	0.13	0.07		c0.15	c0.13		0.02	c0.23		c0.25	0.32	
v/s Ratio Perm			0.01						0.16			0.11
v/c Ratio	0.84	0.46	0.07	0.94	0.81		0.47	0.94	0.65	0.94	0.70	0.24
Uniform Delay, d1	37.1	34.3	32.1	37.6	36.3		41.9	33.6	30.8	32.4	19.3	14.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.2	0.6	0.1	24.3	9.0		2.2	15.4	8.3	27.8	2.5	0.8
Delay (s)	48.3	34.9	32.2	61.8	45.3		44.1	49.0	39.1	60.2	21.7	15.5
Level of Service	D	C	C	E	D		D	D	D	E	C	B
Approach Delay (s)		41.8			51.9			46.3			29.2	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	41.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

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                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Weber/Herndon
********************************************************************************
Average Delay (sec/veh):      1.0       Worst Case Level Of Service: B[ 11.9]
********************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  1    0  0  3  0  1    1  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0   168     0    0     0     0  817   295    22  964     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0   168     0    0     0     0  817   295    22  964     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0   168     0    0     0     0  817   295    22  964     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0   183     0    0     0     0  888   321    24 1048     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0   183     0    0     0     0  888   321    24 1048     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   296  xxxx xxxx   349  xxxx xxxx xxxxx  1209 xxxx xxxxx
Potent Cap.: xxxx xxxx   706  xxxx xxxx   653  xxxx xxxx xxxxx   584 xxxx xxxxx
Move Cap.:   xxxx xxxx   706  xxxx xxxx   653  xxxx xxxx xxxxx   584 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.26  xxxx xxxx  0.00  xxxx xxxx  xxxx  0.04 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   1.0  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx  11.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  11.4 xxxx xxxxx
LOS by Move:   *    *     B     *    *     *     *    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      11.9           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        B                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	313	436	261	50	252	137	528	250	123	170	354	252
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	340	474	284	54	274	149	574	272	134	185	385	274
RTOR Reduction (vph)	0	0	75	0	0	127	0	0	81	0	0	85
Lane Group Flow (vph)	340	474	209	54	274	22	574	272	53	185	385	189
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.0	17.5	40.2	2.4	10.9	10.9	22.7	29.7	29.7	9.4	16.4	25.4
Effective Green, g (s)	9.0	17.5	40.2	2.4	10.9	10.9	22.7	29.7	29.7	9.4	16.4	25.4
Actuated g/C Ratio	0.12	0.23	0.54	0.03	0.15	0.15	0.30	0.40	0.40	0.13	0.22	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	412	1187	933	110	739	230	1039	738	627	430	407	621
v/s Ratio Prot	c0.10	c0.09	0.07	0.02	0.05		c0.17	0.15		0.05	c0.21	0.04
v/s Ratio Perm			0.06			0.01			0.03			0.08
v/c Ratio	0.83	0.40	0.22	0.49	0.37	0.09	0.55	0.37	0.08	0.43	0.95	0.30
Uniform Delay, d1	32.2	24.3	9.2	35.7	29.0	27.8	21.9	16.0	14.2	30.3	28.9	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.7	0.2	0.1	3.4	0.3	0.2	2.1	1.4	0.3	0.7	30.8	0.3
Delay (s)	44.9	24.5	9.3	39.1	29.3	28.0	24.0	17.4	14.4	31.0	59.7	18.6
Level of Service	D	C	A	D	C	C	C	B	B	C	E	B
Approach Delay (s)		26.9			30.0			20.9			40.1	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	1770	5085		1770	1817		1770	1863	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	1770	5085		1770	1817		1770	1863	
Volume (vph)	50	664	15	156	414	0	31	306	61	50	288	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	722	16	170	450	0	34	333	66	54	313	0
RTOR Reduction (vph)	0	0	12	0	0	0	0	11	0	0	0	0
Lane Group Flow (vph)	54	722	4	170	450	0	34	388	0	54	313	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	3.6	15.4	15.4	7.9	19.7		1.6	17.9		2.8	19.1	
Effective Green, g (s)	3.6	15.4	15.4	7.9	19.7		1.6	17.9		2.8	19.1	
Actuated g/C Ratio	0.06	0.26	0.26	0.13	0.33		0.03	0.30		0.05	0.32	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	106	1305	406	233	1670		47	542		83	593	
v/s Ratio Prot	0.03	c0.14		c0.10	0.09		0.02	c0.21		c0.03	0.17	
v/s Ratio Perm			0.00									
v/c Ratio	0.51	0.55	0.01	0.73	0.27		0.72	0.72		0.65	0.53	
Uniform Delay, d1	27.3	19.3	16.6	25.0	14.8		29.0	18.8		28.1	16.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.8	0.5	0.0	10.9	0.1		42.4	7.9		16.8	3.3	
Delay (s)	31.2	19.8	16.6	35.9	14.9		71.4	26.6		44.9	20.1	
Level of Service	C	B	B	D	B		E	C		D	C	
Approach Delay (s)		20.5			20.7			30.2			23.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.91		0.97	0.91		0.76
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5085		3433	5085		3610
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5085		3433	5085		3610
Volume (vph)	1204	0	1315	691	0	1051
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1309	0	1429	751	0	1142
RTOR Reduction (vph)	0	0	0	0	0	4
Lane Group Flow (vph)	1309	0	1429	751	0	1138
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	16.3		25.7	50.0		25.7
Effective Green, g (s)	16.3		25.7	50.0		25.7
Actuated g/C Ratio	0.33		0.51	1.00		0.51
Clearance Time (s)	4.0		4.0	3.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	1658		1765	5085		1856
v/s Ratio Prot	c0.26		c0.42	0.15		0.32
v/s Ratio Perm						
v/c Ratio	0.79		0.81	0.15		0.61
Uniform Delay, d1	15.3		10.1	0.0		8.6
Progression Factor	1.00		0.81	1.00		1.00
Incremental Delay, d2	2.6		1.8	0.0		0.6
Delay (s)	17.9		10.0	0.0		9.2
Level of Service	B		A	A		A
Approach Delay (s)	17.9			6.5	9.2	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1752		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1752		3433	1863	1583
Volume (vph)	41	1873	341	270	1610	135	359	260	170	190	436	37
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	2036	371	293	1750	147	390	283	185	207	474	40
RTOR Reduction (vph)	0	0	159	0	0	39	0	24	0	0	0	23
Lane Group Flow (vph)	45	2036	212	293	1750	108	390	444	0	207	474	17
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	2.4	40.6	40.6	9.0	47.2	47.2	11.0	27.4		7.0	23.4	23.4
Effective Green, g (s)	2.4	40.6	40.6	9.0	47.2	47.2	11.0	27.4		7.0	23.4	23.4
Actuated g/C Ratio	0.02	0.41	0.41	0.09	0.47	0.47	0.11	0.27		0.07	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	82	2065	643	309	2400	747	378	480		240	436	370
v/s Ratio Prot	0.01	c0.40		c0.09	0.34		c0.11	c0.25		0.06	c0.25	
v/s Ratio Perm			0.13			0.07						0.01
v/c Ratio	0.55	0.99	0.33	0.95	0.73	0.14	1.03	0.93		0.86	1.09	0.05
Uniform Delay, d1	48.3	29.4	20.4	45.3	21.3	15.0	44.5	35.3		46.0	38.3	29.7
Progression Factor	0.97	0.95	1.14	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.1	13.3	0.2	37.2	1.1	0.1	54.7	26.1		25.8	68.6	0.2
Delay (s)	52.2	41.3	23.5	82.4	22.4	15.0	99.2	61.4		71.8	106.9	29.9
Level of Service	D	D	C	F	C	B	F	E		E	F	C
Approach Delay (s)		38.8			29.9			78.6			92.6	
Approach LOS		D			C			E			F	

Intersection Summary			
HCM Average Control Delay	47.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	475	1661	104	140	1560	253	72	287	86	167	333	387
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	516	1805	113	152	1696	275	78	312	93	182	362	421
RTOR Reduction (vph)	0	0	49	0	0	63	0	0	73	0	0	210
Lane Group Flow (vph)	516	1805	64	152	1696	212	78	312	20	182	362	211
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.9	37.0	37.0	5.0	28.1	33.1	3.2	17.0	17.0	5.0	18.8	18.8
Effective Green, g (s)	13.9	37.0	37.0	5.0	28.1	33.1	3.2	17.0	17.0	5.0	18.8	18.8
Actuated g/C Ratio	0.17	0.46	0.46	0.06	0.35	0.41	0.04	0.21	0.21	0.06	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	596	2352	732	215	1786	734	137	752	336	215	832	372
v/s Ratio Prot	c0.15	0.35		0.04	c0.33	0.02	0.02	0.09		c0.05	0.10	
v/s Ratio Perm			0.04			0.12			0.01			c0.13
v/c Ratio	0.87	0.77	0.09	0.71	0.95	0.29	0.57	0.41	0.06	0.85	0.44	0.57
Uniform Delay, d1	32.1	17.9	12.0	36.8	25.3	15.6	37.7	27.2	25.1	37.1	26.1	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.5	1.6	0.1	10.1	11.4	0.2	5.3	1.7	0.3	25.2	1.7	6.2
Delay (s)	44.7	19.5	12.1	46.9	36.7	15.8	43.1	28.9	25.5	62.3	27.7	33.2
Level of Service	D	B	B	D	D	B	D	C	C	E	C	C
Approach Delay (s)		24.5			34.7			30.5			36.6	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Volume (vph)	0	1910	1	4	1956	60	2	0	4	60	1	13
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2076	1	4	2126	65	2	0	4	65	1	14
RTOR Reduction (vph)	0	0	0	0	0	13	0	3	0	0	0	12
Lane Group Flow (vph)	0	2076	1	4	2126	52	2	1	0	65	1	2
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		53.0	53.0	1.2	58.2	58.2	5.6	15.8		4.0	14.2	14.2
Effective Green, g (s)		53.0	53.0	1.2	58.2	58.2	5.6	15.8		4.0	14.2	14.2
Actuated g/C Ratio		0.59	0.59	0.01	0.65	0.65	0.06	0.18		0.04	0.16	0.16
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		2995	932	46	3288	1024	214	528		153	294	250
v/s Ratio Prot		c0.41		0.00	c0.42		0.00	0.00		c0.02	0.00	
v/s Ratio Perm			0.00			0.03						c0.00
v/c Ratio		0.69	0.00	0.09	0.65	0.05	0.01	0.00		0.42	0.00	0.01
Uniform Delay, d1		12.9	7.6	43.9	9.7	5.8	39.6	30.6		41.9	31.9	32.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.7	0.0	0.8	0.4	0.0	0.0	0.0		1.9	0.0	0.0
Delay (s)		13.6	7.6	44.7	10.1	5.8	39.6	30.6		43.8	31.9	32.0
Level of Service		B	A	D	B	A	D	C		D	C	C
Approach Delay (s)		13.6			10.0			33.6			41.6	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	104	1774	287	381	1863	71	345	148	307	31	128	102
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	113	1928	312	414	2025	77	375	161	334	34	139	111
RTOR Reduction (vph)	0	0	93	0	0	15	0	0	244	0	0	94
Lane Group Flow (vph)	113	1928	220	414	2025	62	375	161	90	34	139	17
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	12.3	45.0	45.0	28.0	60.7	60.7	13.0	28.6	28.6	2.4	18.0	18.0
Effective Green, g (s)	12.3	45.0	45.0	28.0	60.7	60.7	13.0	28.6	28.6	2.4	18.0	18.0
Actuated g/C Ratio	0.10	0.38	0.38	0.23	0.51	0.51	0.11	0.24	0.24	0.02	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	181	1907	594	413	2572	801	372	444	377	69	279	237
v/s Ratio Prot	0.06	c0.38		c0.23	0.40		c0.11	0.09		0.01	c0.07	
v/s Ratio Perm			0.14			0.04			0.06			0.01
v/c Ratio	0.62	1.01	0.37	1.00	0.79	0.08	1.01	0.36	0.24	0.49	0.50	0.07
Uniform Delay, d1	51.6	37.5	27.2	46.0	24.3	15.3	53.5	38.1	36.9	58.2	46.9	43.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.6	23.3	0.4	44.9	1.7	0.0	48.7	2.3	1.5	5.4	6.2	0.6
Delay (s)	58.2	60.8	27.6	90.9	26.0	15.3	102.2	40.4	38.4	63.6	53.1	44.4
Level of Service	E	E	C	F	C	B	F	D	D	E	D	D
Approach Delay (s)		56.3			36.4			66.3			50.9	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM Average Control Delay	49.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	269	1795	213	226	1907	342	207	293	187	196	263	515
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	292	1951	232	246	2073	372	225	318	203	213	286	560
RTOR Reduction (vph)	0	0	39	0	0	59	0	0	153	0	0	1
Lane Group Flow (vph)	292	1951	193	246	2073	313	225	318	50	213	286	559
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.0	43.1	43.1	8.9	37.0	37.0	6.0	16.0	16.0	6.0	16.0	31.0
Effective Green, g (s)	15.0	43.1	43.1	8.9	37.0	37.0	6.0	16.0	16.0	6.0	16.0	31.0
Actuated g/C Ratio	0.17	0.48	0.48	0.10	0.41	0.41	0.07	0.18	0.18	0.07	0.18	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	295	2435	758	339	2091	651	229	629	281	229	629	616
v/s Ratio Prot	c0.17	0.38		0.07	c0.41		c0.07	0.09		0.06	0.08	c0.15
v/s Ratio Perm			0.12			0.20			0.03			0.20
v/c Ratio	0.99	0.80	0.25	0.73	0.99	0.48	0.98	0.51	0.18	0.93	0.45	0.91
Uniform Delay, d1	37.4	19.8	13.9	39.4	26.3	19.5	41.9	33.4	31.4	41.8	33.1	28.1
Progression Factor	1.00	1.00	1.00	0.69	1.58	1.91	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	49.1	2.0	0.2	3.3	10.8	0.2	54.2	2.9	1.4	40.6	2.4	17.0
Delay (s)	86.5	21.8	14.1	30.5	52.4	37.4	96.2	36.3	32.8	82.4	35.5	45.1
Level of Service	F	C	B	C	D	D	F	D	C	F	D	D
Approach Delay (s)		28.7			48.3			53.4			50.0	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	42.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	90	1871	96	172	2256	170	173	338	88	153	294	141
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	2034	104	187	2452	185	188	367	96	166	320	153
RTOR Reduction (vph)	0	0	49	0	0	52	0	0	72	0	0	78
Lane Group Flow (vph)	98	2034	55	187	2452	133	188	367	24	166	320	75
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	41.8	41.8	7.0	45.6	45.6	8.6	16.2	16.2	9.0	16.6	16.6
Effective Green, g (s)	3.2	41.8	41.8	7.0	45.6	45.6	8.6	16.2	16.2	9.0	16.6	16.6
Actuated g/C Ratio	0.04	0.46	0.46	0.08	0.51	0.51	0.10	0.18	0.18	0.10	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	122	2362	735	267	2576	802	328	637	285	177	938	292
v/s Ratio Prot	0.03	0.40		c0.05	c0.48		0.05	c0.10		c0.09	0.06	
v/s Ratio Perm			0.03			0.08			0.02			0.05
v/c Ratio	0.80	0.86	0.07	0.70	0.95	0.17	0.57	0.58	0.08	0.94	0.34	0.26
Uniform Delay, d1	43.1	21.5	13.4	40.5	21.2	12.0	38.9	33.8	30.7	40.2	31.9	31.4
Progression Factor	0.70	1.67	3.20	1.00	1.00	1.00	0.95	0.60	0.99	1.00	1.00	1.00
Incremental Delay, d2	19.9	2.1	0.0	8.0	9.0	0.1	1.9	3.0	0.5	49.3	1.0	2.1
Delay (s)	50.1	38.0	42.8	48.5	30.1	12.1	39.1	23.2	30.8	89.5	32.9	33.5
Level of Service	D	D	D	D	C	B	D	C	C	F	C	C
Approach Delay (s)		38.7			30.2			28.9			47.8	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM Average Control Delay	34.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Volume (vph)	800	1307	97	91	1984	151	242	1087	62	250	1321	616
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	870	1421	105	99	2157	164	263	1182	67	272	1436	670
RTOR Reduction (vph)	0	0	52	0	0	42	0	0	48	0	0	0
Lane Group Flow (vph)	870	1421	53	99	2157	122	263	1182	19	272	1436	670
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.0	52.1	52.1	6.9	38.0	38.0	7.0	33.2	33.2	11.8	38.0	59.0
Effective Green, g (s)	21.0	52.1	52.1	6.9	38.0	38.0	7.0	33.2	33.2	11.8	38.0	59.0
Actuated g/C Ratio	0.18	0.43	0.43	0.06	0.32	0.32	0.06	0.28	0.28	0.10	0.32	0.49
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	601	2208	687	197	1610	501	200	1407	438	338	1121	831
v/s Ratio Prot	c0.25	0.28		0.03	c0.42		c0.08	0.23		0.08	c0.41	0.14
v/s Ratio Perm			0.03			0.08			0.01			0.28
v/c Ratio	1.45	0.64	0.08	0.50	1.34	0.24	1.32	0.84	0.04	0.80	1.28	0.81
Uniform Delay, d1	49.5	26.7	19.9	54.9	41.0	30.3	56.5	40.9	31.8	53.0	41.0	25.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	210.7	0.7	0.0	2.0	157.2	0.3	172.6	6.2	0.2	13.0	133.4	5.8
Delay (s)	260.2	27.3	19.9	56.9	198.2	30.6	229.1	47.1	31.9	66.0	174.4	31.4
Level of Service	F	C	B	E	F	C	F	D	C	E	F	C
Approach Delay (s)		111.5			181.0			78.1			121.7	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM Average Control Delay	127.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	117.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	128	1293	322	475	1430	330	139	852	250	190	1115	239
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	139	1405	350	516	1554	359	151	926	272	207	1212	260
RTOR Reduction (vph)	0	0	103	0	0	106	0	0	195	0	0	120
Lane Group Flow (vph)	139	1405	247	516	1554	253	151	926	77	207	1212	140
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	22.0	22.0	12.0	29.0	29.0	4.0	19.0	19.0	6.0	21.0	21.0
Effective Green, g (s)	5.0	22.0	22.0	12.0	29.0	29.0	4.0	19.0	19.0	6.0	21.0	21.0
Actuated g/C Ratio	0.07	0.29	0.29	0.16	0.39	0.39	0.05	0.25	0.25	0.08	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	229	1492	464	549	1966	612	183	1288	401	275	1424	443
v/s Ratio Prot	0.04	c0.28		c0.15	0.31		0.04	0.18		c0.06	c0.24	
v/s Ratio Perm			0.16			0.16			0.05			0.09
v/c Ratio	0.61	0.94	0.53	0.94	0.79	0.41	0.83	0.72	0.19	0.75	0.85	0.32
Uniform Delay, d1	34.0	25.9	22.2	31.1	20.3	16.8	35.2	25.6	22.0	33.8	25.5	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.5	12.1	1.2	24.1	2.2	0.5	25.1	3.5	1.1	11.1	6.6	1.9
Delay (s)	38.5	37.9	23.4	55.2	22.6	17.2	60.2	29.0	23.0	44.8	32.1	23.2
Level of Service	D	D	C	E	C	B	E	C	C	D	C	C
Approach Delay (s)		35.3			28.7			31.3			32.3	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	1863	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	1863	1583			3433	1583
Volume (vph)	1157	392	0	0	211	146
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1258	426	0	0	229	159
RTOR Reduction (vph)	0	115	0	0	0	93
Lane Group Flow (vph)	1258	311	0	0	229	66
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	65.8	65.8			16.2	16.2
Effective Green, g (s)	65.8	65.8			16.2	16.2
Actuated g/C Ratio	0.73	0.73			0.18	0.18
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1362	1157			618	285
v/s Ratio Prot	c0.68				c0.07	
v/s Ratio Perm		0.20				0.04
v/c Ratio	0.92	0.27			0.37	0.23
Uniform Delay, d1	10.0	4.1			32.4	31.6
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	10.6	0.1			1.7	1.9
Delay (s)	20.7	4.2			34.1	33.5
Level of Service	C	A			C	C
Approach Delay (s)	16.5			0.0	33.9	
Approach LOS	B			A	C	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	0.97	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.91		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583		1770	3539	1583	3433	1690		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583		1770	3539	1583	3433	1690		1770	1863
Volume (vph)	453	557	8	10	70	638	162	456	171	276	3	178
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	492	605	9	11	76	693	176	496	186	300	3	193
RTOR Reduction (vph)	0	0	5	0	0	0	100	0	44	0	0	0
Lane Group Flow (vph)	492	605	4	0	87	693	76	496	442	0	3	193
Turn Type	Prot		Perm	Prot	Prot		Perm	Prot			Prot	
Protected Phases	5	2		1	1	6		7	4		3	8
Permitted Phases			2				6					
Actuated Green, G (s)	33.2	49.8	49.8		8.4	25.0	25.0	20.4	37.3		2.9	19.8
Effective Green, g (s)	33.2	49.8	49.8		8.4	25.0	25.0	20.4	37.3		2.9	19.8
Actuated g/C Ratio	0.29	0.44	0.44		0.07	0.22	0.22	0.18	0.33		0.03	0.17
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	514	1541	689		130	773	346	612	551		45	322
v/s Ratio Prot	c0.28	0.17			0.05	c0.20		0.14	c0.26		0.00	c0.10
v/s Ratio Perm			0.00				0.05					
v/c Ratio	0.96	0.39	0.01		0.67	0.90	0.22	0.81	0.80		0.07	0.60
Uniform Delay, d1	39.9	22.0	18.3		51.6	43.4	36.7	45.1	35.2		54.4	43.6
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	28.8	0.2	0.0		12.3	13.0	0.3	8.0	8.3		0.6	3.0
Delay (s)	68.7	22.2	18.3		64.0	56.4	37.0	53.1	43.4		55.1	46.6
Level of Service	E	C	B		E	E	D	D	D		E	D
Approach Delay (s)		42.9				53.5			48.3			44.7
Approach LOS		D				D			D			D

Intersection Summary			
HCM Average Control Delay	47.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	114.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWR
Lane Configurations	
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Volume (vph)	71
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	77
RTOR Reduction (vph)	64
Lane Group Flow (vph)	13
Turn Type	Perm
Protected Phases	
Permitted Phases	8
Actuated Green, G (s)	19.8
Effective Green, g (s)	19.8
Actuated g/C Ratio	0.17
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	274
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.05
Uniform Delay, d1	39.4
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	39.5
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	310	83	273	303	140	161
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	337	90	297	329	152	175

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	337	90	626	327
Volume Left (vph)	337	0	0	152
Volume Right (vph)	0	90	329	0
Hadj (s)	0.53	-0.67	-0.28	0.13
Departure Headway (s)	7.6	6.4	5.8	6.6
Degree Utilization, x	0.72	0.16	1.01	0.60
Capacity (veh/h)	461	548	613	537
Control Delay (s)	26.4	9.5	62.6	18.9
Approach Delay (s)	22.8		62.6	18.9
Approach LOS	C		F	C

Intersection Summary			
Delay	40.0		
HCM Level of Service	E		
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	5085	5085	1583
Volume (vph)	76	304	399	975	1192	123
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	330	434	1060	1296	134
RTOR Reduction (vph)	0	280	0	0	0	88
Lane Group Flow (vph)	83	50	434	1060	1296	46
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	8.7	8.7	17.1	41.1	20.0	20.0
Effective Green, g (s)	8.7	8.7	17.1	41.1	20.0	20.0
Actuated g/C Ratio	0.15	0.15	0.30	0.71	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	266	238	524	3616	1760	548
v/s Ratio Prot	c0.05		c0.25	0.21	c0.25	
v/s Ratio Perm		0.03				0.03
v/c Ratio	0.31	0.21	0.83	0.29	0.74	0.08
Uniform Delay, d1	21.9	21.5	19.0	3.0	16.6	12.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.4	10.4	0.2	2.8	0.3
Delay (s)	22.6	22.0	29.4	3.3	19.4	13.0
Level of Service	C	C	C	A	B	B
Approach Delay (s)	22.1			10.8	18.8	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	57.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	220	411	760	825	327	191	689	1432	676	71	1489	165
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	447	826	897	355	208	749	1557	735	77	1618	179
RTOR Reduction (vph)	0	0	187	0	0	60	0	0	62	0	0	63
Lane Group Flow (vph)	239	447	639	897	355	148	749	1557	673	77	1618	116
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	12.7	31.0	31.0	23.0	41.3	41.3	19.0	46.0	46.0	4.0	31.0	31.0
Effective Green, g (s)	12.7	31.0	31.0	23.0	41.3	41.3	19.0	46.0	46.0	4.0	31.0	31.0
Actuated g/C Ratio	0.11	0.26	0.26	0.19	0.34	0.34	0.16	0.38	0.38	0.03	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	363	914	409	658	1218	545	544	1949	607	114	1314	409
v/s Ratio Prot	0.07	0.13		c0.26	0.10		c0.22	0.31		0.02	c0.32	
v/s Ratio Perm			c0.40			0.09			0.43			0.07
v/c Ratio	0.66	0.49	1.56	1.36	0.29	0.27	1.38	0.80	1.11	0.68	1.23	0.28
Uniform Delay, d1	51.6	37.8	44.5	48.5	28.7	28.5	50.5	32.9	37.0	57.4	44.5	35.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.3	0.4	264.9	173.1	0.1	0.3	180.9	3.5	70.2	14.7	111.0	1.7
Delay (s)	55.8	38.2	309.4	221.6	28.8	28.7	231.4	36.4	107.2	72.0	155.5	37.3
Level of Service	E	D	F	F	C	C	F	D	F	E	F	D
Approach Delay (s)		189.1			147.3			101.6			140.7	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	136.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	109.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEU	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863
Volume (vph)	10	330	769	92	44	799	26	230	134	58	83	6
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	359	836	100	48	868	28	250	146	63	90	7
RTOR Reduction (vph)	0	0	0	48	0	0	16	0	0	51	0	0
Lane Group Flow (vph)	0	370	836	52	48	868	12	250	146	12	90	7
Turn Type	Prot	Prot		Perm	Prot		Perm	Prot		Perm	Prot	
Protected Phases	7	7	4		3	8		5	2		1	6
Permitted Phases				4		8	8		2	2		
Actuated Green, G (s)		19.1	38.2	38.2	5.1	24.2	24.2	14.5	16.2	16.2	7.2	8.9
Effective Green, g (s)		19.1	38.2	38.2	5.1	24.2	24.2	14.5	16.2	16.2	7.2	8.9
Actuated g/C Ratio		0.23	0.46	0.46	0.06	0.29	0.29	0.18	0.20	0.20	0.09	0.11
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		409	1635	731	109	1036	463	310	365	310	154	200
v/s Ratio Prot		c0.21	0.24		0.03	c0.25		c0.14	c0.08		0.05	0.00
v/s Ratio Perm				0.03			0.01			0.01		
v/c Ratio		0.90	0.51	0.07	0.44	0.84	0.03	0.81	0.40	0.04	0.58	0.04
Uniform Delay, d1		30.9	15.7	12.4	37.4	27.4	20.8	32.8	29.0	26.9	36.3	33.1
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		22.9	0.3	0.0	2.8	6.0	0.0	14.2	0.7	0.1	5.6	0.1
Delay (s)		53.8	15.9	12.4	40.3	33.4	20.9	46.9	29.7	27.0	41.9	33.1
Level of Service		D	B	B	D	C	C	D	C	C	D	C
Approach Delay (s)			26.4			33.4			38.7			35.9
Approach LOS			C			C			D			D

Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWR
Lane Configurations	
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Volume (vph)	280
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	304
RTOR Reduction (vph)	271
Lane Group Flow (vph)	33
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	8.9
Effective Green, g (s)	8.9
Actuated g/C Ratio	0.11
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	170
v/s Ratio Prot	
v/s Ratio Perm	0.02
v/c Ratio	0.19
Uniform Delay, d1	33.6
Progression Factor	1.00
Incremental Delay, d2	0.6
Delay (s)	34.2
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1804		1770	1863	1583	1770	1808		1770	1863	1583
Flt Permitted	0.55	1.00		0.19	1.00	1.00	0.66	1.00		0.67	1.00	1.00
Satd. Flow (perm)	1024	1804		357	1863	1583	1229	1808		1239	1863	1583
Volume (vph)	90	572	151	36	309	120	156	107	26	127	141	168
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	622	164	39	336	130	170	116	28	138	153	183
RTOR Reduction (vph)	0	18	0	0	0	60	0	16	0	0	0	134
Lane Group Flow (vph)	98	768	0	39	336	70	170	128	0	138	153	49
Turn Type	Perm			Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)	22.2	22.2		22.2	22.2	22.2	10.9	10.9		10.9	10.9	10.9
Effective Green, g (s)	22.2	22.2		22.2	22.2	22.2	10.9	10.9		10.9	10.9	10.9
Actuated g/C Ratio	0.54	0.54		0.54	0.54	0.54	0.27	0.27		0.27	0.27	0.27
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	553	974		193	1006	855	326	479		329	494	420
v/s Ratio Prot		c0.43			0.18			0.07			0.08	
v/s Ratio Perm	0.10			0.11		0.04	c0.14			0.11		0.03
v/c Ratio	0.18	0.79		0.20	0.33	0.08	0.52	0.27		0.42	0.31	0.12
Uniform Delay, d1	4.8	7.6		4.9	5.3	4.5	12.9	11.9		12.5	12.1	11.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	4.3		0.5	0.2	0.0	1.5	0.3		0.9	0.4	0.1
Delay (s)	5.0	11.9		5.4	5.5	4.6	14.4	12.2		13.4	12.4	11.6
Level of Service	A	B		A	A	A	B	B		B	B	B
Approach Delay (s)		11.1			5.3			13.4			12.4	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	41.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86		0.95	0.95		0.95	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.87		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.99		0.95	0.99	
Satd. Flow (prot)	1770	5085	1583	1770	6312		1681	1533		1681	1544	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.26		0.95	0.15	
Satd. Flow (perm)	1770	5085	1583	1770	6312		1681	408		1681	236	
Volume (vph)	613	2674	291	358	3320	370	455	0	747	434	0	459
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	666	2907	316	389	3609	402	495	0	812	472	0	499
RTOR Reduction (vph)	0	0	98	0	16	0	0	137	0	0	96	0
Lane Group Flow (vph)	666	2907	218	389	3995	0	348	822	0	340	535	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	25.0	57.0	57.0	15.0	47.0		16.0	34.0		14.0	30.0	
Effective Green, g (s)	25.0	57.0	57.0	15.0	47.0		16.0	34.0		14.0	30.0	
Actuated g/C Ratio	0.21	0.48	0.48	0.12	0.39		0.13	0.28		0.12	0.25	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	369	2415	752	221	2472		224	266		196	212	
v/s Ratio Prot	c0.38	0.57		0.22	c0.63		0.21	c0.41		0.20	0.30	
v/s Ratio Perm			0.14					c0.46			0.34	
v/c Ratio	1.80	1.20	0.29	1.76	1.62		1.55	3.09		1.73	2.52	
Uniform Delay, d1	47.5	31.5	19.2	52.5	36.5		52.0	43.0		53.0	45.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	372.8	95.9	1.0	360.0	279.2		269.9	950.7		351.0	699.4	
Delay (s)	420.3	127.4	20.1	412.5	315.7		321.9	993.7		404.0	744.4	
Level of Service	F	F	C	F	F		F	F		F	F	
Approach Delay (s)		168.8			324.2			814.8			625.2	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	355.4	HCM Level of Service	F
HCM Volume to Capacity ratio	2.18		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	163.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	48	5	6	1	24	59	23	127	0	56	237	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	5	7	1	26	64	25	138	0	61	258	54
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	603	595	285	577	622	69	312			138		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	603	595	285	577	622	69	312			138		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	84	99	99	100	93	93	98			96		
cM capacity (veh/h)	323	391	712	374	377	980	1245			1443		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	52	5	7	1	26	64	25	69	69	0	61	312
Volume Left	52	0	0	1	0	0	25	0	0	0	61	0
Volume Right	0	0	7	0	0	64	0	0	0	0	0	54
cSH	323	391	712	374	377	980	1245	1700	1700	1700	1443	1700
Volume to Capacity	0.16	0.01	0.01	0.00	0.07	0.07	0.02	0.04	0.04	0.00	0.04	0.18
Queue Length 95th (ft)	14	1	1	0	6	5	2	0	0	0	3	0
Control Delay (s)	18.3	14.3	10.1	14.7	15.3	8.9	8.0	0.0	0.0	0.0	7.6	0.0
Lane LOS	C	B	B	B	C	A	A				A	
Approach Delay (s)	17.1			10.8			1.2				1.2	
Approach LOS	C			B								

Intersection Summary				
Average Delay	4.0			
Intersection Capacity Utilization	38.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0				4.0		4.0
Lane Util. Factor		0.91			0.86	1.00				0.97		0.88
Frt		0.96			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		4891			6408	1583				3433		2787
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		4891			6408	1583				3433		2787
Volume (vph)	0	2004	683	0	3892	174	0	0	0	213	0	1119
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2178	742	0	4230	189	0	0	0	232	0	1216
RTOR Reduction (vph)	0	51	0	0	0	75	0	0	0	0	0	6
Lane Group Flow (vph)	0	2869	0	0	4230	114	0	0	0	232	0	1210
Turn Type						Perm				custom		custom
Protected Phases		2			6							
Permitted Phases						6				8		8
Actuated Green, G (s)		68.0			68.0	68.0				44.0		44.0
Effective Green, g (s)		68.0			68.0	68.0				44.0		44.0
Actuated g/C Ratio		0.57			0.57	0.57				0.37		0.37
Clearance Time (s)		4.0			4.0	4.0				4.0		4.0
Vehicle Extension (s)		3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)		2772			3631	897				1259		1022
v/s Ratio Prot		0.59			c0.66							
v/s Ratio Perm						0.07				0.07		c0.43
v/c Ratio		1.03			1.16	0.13				0.18		1.18
Uniform Delay, d1		26.0			26.0	12.1				25.8		38.0
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		26.9			77.6	0.3				0.1		93.0
Delay (s)		52.9			103.6	12.4				25.9		131.0
Level of Service		D			F	B				C		F
Approach Delay (s)		52.9			99.7			0.0			114.2	
Approach LOS		D			F			A			F	

Intersection Summary			
HCM Average Control Delay	86.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	99.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0		4.0			
Lane Util. Factor		0.91	1.00		0.91		1.00		1.00			
Frt		1.00	0.85		0.94		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		5085	1583		4791		1770		1583			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		5085	1583		4791		1770		1583			
Volume (vph)	0	2541	109	0	2519	1586	146	0	456	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2762	118	0	2738	1724	159	0	496	0	0	0
RTOR Reduction (vph)	0	0	0	0	103	0	0	0	3	0	0	0
Lane Group Flow (vph)	0	2762	118	0	4359	0	159	0	493	0	0	0
Turn Type			Free				custom		custom			
Protected Phases		2			6							
Permitted Phases			Free				4		4			
Actuated Green, G (s)		75.0	110.0		75.0		27.0		27.0			
Effective Green, g (s)		75.0	110.0		75.0		27.0		27.0			
Actuated g/C Ratio		0.68	1.00		0.68		0.25		0.25			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		3467	1583		3267		434		389			
v/s Ratio Prot		0.54			c0.91							
v/s Ratio Perm			0.07				0.09		c0.31			
v/c Ratio		0.80	0.07		1.43dr		0.37		1.27			
Uniform Delay, d1		12.2	0.0		17.5		34.4		41.5			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		2.0	0.1		152.6		0.5		139.2			
Delay (s)		14.2	0.1		170.1		34.9		180.7			
Level of Service		B	A		F		C		F			
Approach Delay (s)		13.6			170.1			145.3			0.0	
Approach LOS		B			F			F			A	

Intersection Summary			
HCM Average Control Delay	111.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	119.1%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.20	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	365	1863	1770	1583
Volume (vph)	845	307	555	476	498	455
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	918	334	603	517	541	495
RTOR Reduction (vph)	0	100	0	0	0	150
Lane Group Flow (vph)	918	234	603	517	541	345
Turn Type		Perm	Perm			Perm
Protected Phases	6			2	4	
Permitted Phases		6	2			4
Actuated Green, G (s)	84.0	84.0	84.0	84.0	28.0	28.0
Effective Green, g (s)	84.0	84.0	84.0	84.0	28.0	28.0
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1304	1108	256	1304	413	369
v/s Ratio Prot	0.49			0.28	c0.31	
v/s Ratio Perm		0.15	c1.65			0.22
v/c Ratio	0.70	0.21	2.36	0.40	1.31	0.93
Uniform Delay, d1	10.6	6.3	18.0	7.5	46.0	45.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	0.4	621.9	0.9	155.9	30.4
Delay (s)	13.9	6.8	639.9	8.4	201.9	75.5
Level of Service	B	A	F	A	F	E
Approach Delay (s)	12.0			348.4	141.5	
Approach LOS	B			F	F	

Intersection Summary			
HCM Average Control Delay	161.9	HCM Level of Service	F
HCM Volume to Capacity ratio	2.10		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	112.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0			4.0	
Lane Util. Factor		0.95			1.00	1.00		1.00			1.00	
Frt		0.98			1.00	0.85		0.98			0.93	
Flt Protected		0.99			1.00	1.00		0.96			0.98	
Satd. Flow (prot)		3451			1860	1583		1753			1689	
Flt Permitted		0.53			0.71	1.00		0.44			0.77	
Satd. Flow (perm)		1835			1327	1583		799			1327	
Volume (vph)	263	915	132	27	901	673	228	1	36	390	8	464
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	286	995	143	29	979	732	248	1	39	424	9	504
RTOR Reduction (vph)	0	9	0	0	0	94	0	6	0	0	42	0
Lane Group Flow (vph)	0	1416	0	0	1008	638	0	282	0	0	895	0
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2		2	4			8		
Actuated Green, G (s)		50.0			50.0	50.0		42.0			42.0	
Effective Green, g (s)		50.0			50.0	50.0		42.0			42.0	
Actuated g/C Ratio		0.50			0.50	0.50		0.42			0.42	
Clearance Time (s)		4.0			4.0	4.0		4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		918			664	792		336			557	
v/s Ratio Prot												
v/s Ratio Perm		c0.77			0.76	0.40		0.35			c0.67	
v/c Ratio		3.45dl			1.52	0.81		0.84			1.61	
Uniform Delay, d1		25.0			25.0	20.9		26.0			29.0	
Progression Factor		1.00			1.00	1.00		1.00			1.00	
Incremental Delay, d2		249.3			240.8	8.6		16.6			281.6	
Delay (s)		274.3			265.8	29.5		42.6			310.6	
Level of Service		F			F	C		D			F	
Approach Delay (s)		274.3			166.4			42.6			310.6	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM Average Control Delay	224.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.57		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	143.8%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	1863	1583
Flt Permitted	0.22	1.00	1.00	0.18	1.00	1.00	0.74	1.00	1.00	0.75	1.00	1.00
Satd. Flow (perm)	418	3539	1583	343	3539	1583	1374	3539	1583	1392	1863	1583
Volume (vph)	101	1132	56	56	942	53	56	14	9	201	28	31
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	1230	61	61	1024	58	61	15	10	218	30	34
RTOR Reduction (vph)	0	0	29	0	0	27	0	0	7	0	0	25
Lane Group Flow (vph)	110	1230	32	61	1024	31	61	15	3	218	30	9
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	21.7	21.7	21.7	21.7	21.7	21.7	11.4	11.4	11.4	11.4	11.4	11.4
Effective Green, g (s)	21.7	21.7	21.7	21.7	21.7	21.7	11.4	11.4	11.4	11.4	11.4	11.4
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.53	0.53	0.28	0.28	0.28	0.28	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	221	1869	836	181	1869	836	381	982	439	386	517	439
v/s Ratio Prot		c0.35			0.29			0.00			0.02	
v/s Ratio Perm	0.26		0.02	0.18		0.02	0.04		0.00	c0.16		0.01
v/c Ratio	0.50	0.66	0.04	0.34	0.55	0.04	0.16	0.02	0.01	0.56	0.06	0.02
Uniform Delay, d1	6.2	7.0	4.7	5.6	6.4	4.7	11.2	10.8	10.7	12.7	10.9	10.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.8	0.0	1.1	0.3	0.0	0.2	0.0	0.0	1.9	0.0	0.0
Delay (s)	8.0	7.9	4.7	6.7	6.8	4.7	11.4	10.8	10.8	14.6	11.0	10.8
Level of Service	A	A	A	A	A	A	B	B	B	B	B	B
Approach Delay (s)		7.7			6.7			11.2			13.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	41.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3502		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3502		1770	3539	1583	1770	3539	1583
Volume (vph)	397	649	111	35	1225	91	51	898	417	79	1094	365
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	432	705	121	38	1332	99	55	976	453	86	1189	397
RTOR Reduction (vph)	0	0	59	0	5	0	0	0	176	0	0	210
Lane Group Flow (vph)	432	705	62	38	1426	0	55	976	277	86	1189	187
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	24.0	62.0	62.0	3.6	41.6		4.0	34.0	34.0	6.0	36.0	36.0
Effective Green, g (s)	24.0	62.0	62.0	3.6	41.6		4.0	34.0	34.0	6.0	36.0	36.0
Actuated g/C Ratio	0.20	0.51	0.51	0.03	0.34		0.03	0.28	0.28	0.05	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	349	1804	807	52	1198		58	990	443	87	1048	469
v/s Ratio Prot	c0.24	0.20		0.02	c0.41		0.03	0.28		c0.05	c0.34	
v/s Ratio Perm			0.04						0.17			0.12
v/c Ratio	1.24	0.39	0.08	0.73	1.19		0.95	0.99	0.62	0.99	1.13	0.40
Uniform Delay, d1	48.8	18.2	15.2	58.5	40.0		58.7	43.6	38.2	57.8	42.8	34.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	129.2	0.1	0.0	40.9	94.3		98.4	24.9	2.7	91.8	72.6	0.6
Delay (s)	178.0	18.4	15.2	99.4	134.3		157.1	68.5	41.0	149.6	115.4	34.7
Level of Service	F	B	B	F	F		F	E	D	F	F	C
Approach Delay (s)		72.9			133.4			63.4			98.0	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM Average Control Delay	92.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	105.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00		1.00	0.88	1.00	0.91		0.97	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583		1863	2787	1770	5085		3433	5085	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583		1863	2787	1770	5085		3433	5085	1583
Volume (vph)	188	33	19	0	76	822	23	1580	0	967	1714	295
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	204	36	21	0	83	893	25	1717	0	1051	1863	321
RTOR Reduction (vph)	0	0	16	0	0	38	0	0	0	0	0	80
Lane Group Flow (vph)	204	36	5	0	83	855	25	1717	0	1051	1863	241
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.9	24.6	24.6		8.7	43.0	2.8	40.0		34.3	71.5	83.4
Effective Green, g (s)	11.9	24.6	24.6		8.7	43.0	2.8	40.0		34.3	71.5	83.4
Actuated g/C Ratio	0.11	0.22	0.22		0.08	0.39	0.03	0.36		0.31	0.64	0.75
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	368	413	351		146	1181	45	1834		1062	3278	1248
v/s Ratio Prot	c0.06	0.02			0.04	c0.22	0.01	c0.34		c0.31	0.37	0.02
v/s Ratio Perm			0.00			0.08						0.13
v/c Ratio	0.55	0.09	0.01		0.57	0.72	0.56	0.94		0.99	0.57	0.19
Uniform Delay, d1	47.0	34.2	33.7		49.3	28.9	53.4	34.2		38.1	11.0	4.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.8	0.1	0.0		5.0	2.2	14.0	9.6		24.8	0.2	0.1
Delay (s)	48.8	34.3	33.7		54.3	31.1	67.5	43.8		62.9	11.3	4.1
Level of Service	D	C	C		D	C	E	D		E	B	A
Approach Delay (s)		45.6			33.1			44.1			27.3	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	33.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	110.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	4.0
Lane Util. Factor		1.00			1.00			1.00			1.00	1.00
Frt		0.98			1.00			1.00			1.00	0.85
Flt Protected		0.99			1.00			0.98			1.00	1.00
Satd. Flow (prot)		1822			1858			1826			1859	1583
Flt Permitted		0.95			1.00			0.86			0.99	1.00
Satd. Flow (perm)		1742			1858			1607			1848	1583
Volume (vph)	14	93	15	0	154	3	79	120	0	5	114	27
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	101	16	0	167	3	86	130	0	5	124	29
RTOR Reduction (vph)	0	13	0	0	2	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	119	0	0	168	0	0	216	0	0	129	18
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		8.5			8.5			25.3			25.3	25.3
Effective Green, g (s)		8.5			8.5			25.3			25.3	25.3
Actuated g/C Ratio		0.20			0.20			0.61			0.61	0.61
Clearance Time (s)		4.0			4.0			4.0			4.0	4.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		354			378			973			1119	958
v/s Ratio Prot					c0.09							
v/s Ratio Perm		0.07						c0.13			0.07	0.01
v/c Ratio		0.34			0.44			0.22			0.12	0.02
Uniform Delay, d1		14.2			14.6			3.8			3.5	3.3
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.6			0.8			0.1			0.0	0.0
Delay (s)		14.8			15.4			3.9			3.5	3.3
Level of Service		B			B			A			A	A
Approach Delay (s)		14.8			15.4			3.9			3.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	41.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0				4.0		4.0
Lane Util. Factor		0.95	1.00		0.95	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3539	1583		3539	1583				1770		1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3539	1583		3539	1583				1770		1583
Volume (vph)	0	788	97	0	910	100	0	0	0	259	0	55
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	857	105	0	989	109	0	0	0	282	0	60
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	24
Lane Group Flow (vph)	0	857	105	0	989	109	0	0	0	282	0	36
Turn Type			Free			Free				custom		custom
Protected Phases		4			8							
Permitted Phases			Free			Free				6		6
Actuated Green, G (s)		16.3	40.0		16.3	40.0				15.7		15.7
Effective Green, g (s)		16.3	40.0		16.3	40.0				15.7		15.7
Actuated g/C Ratio		0.41	1.00		0.41	1.00				0.39		0.39
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		1442	1583		1442	1583				695		621
v/s Ratio Prot		0.24			c0.28							
v/s Ratio Perm			0.07			0.07				c0.16		0.02
v/c Ratio		0.59	0.07		0.69	0.07				0.41		0.06
Uniform Delay, d1		9.3	0.0		9.7	0.0				8.8		7.6
Progression Factor		1.00	1.00		1.00	1.00				1.00		1.00
Incremental Delay, d2		0.7	0.1		1.4	0.1				1.8		0.2
Delay (s)		9.9	0.1		11.1	0.1				10.5		7.7
Level of Service		A	A		B	A				B		A
Approach Delay (s)		8.9			10.0			0.0			10.0	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0		4.0			
Lane Util. Factor		0.95			0.95	1.00	1.00		1.00			
Frt		1.00			1.00	0.85	1.00		0.85			
Flt Protected		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3539			3539	1583	1770		1583			
Flt Permitted		1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3539			3539	1583	1770		1583			
Volume (vph)	0	631	0	0	1106	959	640	0	237	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	686	0	0	1202	1042	696	0	258	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	59	0	0	0
Lane Group Flow (vph)	0	686	0	0	1202	1042	696	0	199	0	0	0
Turn Type			Free			Free	custom		custom			
Protected Phases		4			8							
Permitted Phases			Free			Free	2		2			
Actuated Green, G (s)		23.5			23.5	60.0	28.5		28.5			
Effective Green, g (s)		23.5			23.5	60.0	28.5		28.5			
Actuated g/C Ratio		0.39			0.39	1.00	0.48		0.48			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		1386			1386	1583	841		752			
v/s Ratio Prot		0.19			c0.34							
v/s Ratio Perm						0.66	c0.39		0.13			
v/c Ratio		0.49			0.87	0.66	0.83		0.26			
Uniform Delay, d1		13.8			16.8	0.0	13.6		9.5			
Progression Factor		1.00			1.14	1.00	1.00		1.00			
Incremental Delay, d2		0.3			3.2	1.1	9.2		0.9			
Delay (s)		14.1			22.4	1.1	22.8		10.3			
Level of Service		B			C	A	C		B			
Approach Delay (s)		14.1			12.5			19.4			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Volume (vph)	7	998	59	429	1546	852	587	760	11	49	886	794
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	1085	64	466	1680	926	638	826	12	53	963	863
RTOR Reduction (vph)	0	0	27	0	0	247	0	0	6	0	0	8
Lane Group Flow (vph)	8	1085	37	466	1680	679	638	826	6	53	963	855
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		1	6		5	2	3
Permitted Phases			4			8			6			2
Actuated Green, G (s)	0.8	31.2	31.2	21.0	51.4	51.4	28.0	44.9	44.9	6.9	23.8	44.8
Effective Green, g (s)	0.8	31.2	31.2	21.0	51.4	51.4	28.0	44.9	44.9	6.9	23.8	44.8
Actuated g/C Ratio	0.01	0.26	0.26	0.18	0.43	0.43	0.23	0.37	0.37	0.06	0.20	0.37
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	12	920	412	310	1516	678	413	1324	592	102	702	644
v/s Ratio Prot	0.00	0.31		c0.26	c0.47		c0.36	0.23		0.03	0.27	c0.23
v/s Ratio Perm			0.02			0.43			0.00			0.31
v/c Ratio	0.67	1.18	0.09	1.50	1.11	1.00	1.54	0.62	0.01	0.52	1.37	1.33
Uniform Delay, d1	59.5	44.4	33.6	49.5	34.3	34.3	46.0	30.7	23.6	54.9	48.1	37.6
Progression Factor	1.08	1.19	1.35	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	86.0	91.5	0.1	242.6	58.8	34.9	256.9	2.2	0.0	4.4	176.3	157.9
Delay (s)	150.3	144.1	45.6	292.1	93.1	69.2	302.9	32.9	23.6	59.4	224.4	195.5
Level of Service	F	F	D	F	F	E	F	C	C	E	F	F
Approach Delay (s)		138.7			116.1			149.5			206.5	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	148.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	121.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	260	1606	216	208	1895	178	419	687	124	381	476	150
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	1746	235	226	2060	193	455	747	135	414	517	163
RTOR Reduction (vph)	0	0	82	0	0	53	0	0	62	0	0	122
Lane Group Flow (vph)	283	1746	153	226	2060	140	455	747	73	414	517	41
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	39.0	39.0	9.0	40.0	40.0	15.6	24.0	24.0	12.0	20.4	20.4
Effective Green, g (s)	8.0	39.0	39.0	9.0	40.0	40.0	15.6	24.0	24.0	12.0	20.4	20.4
Actuated g/C Ratio	0.08	0.39	0.39	0.09	0.40	0.40	0.16	0.24	0.24	0.12	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	275	1983	617	309	2034	633	536	849	380	412	722	323
v/s Ratio Prot	c0.08	0.34		0.07	c0.41		0.13	c0.21		c0.12	0.15	
v/s Ratio Perm			0.10			0.09			0.05			0.03
v/c Ratio	1.03	0.88	0.25	0.73	1.01	0.22	0.85	0.88	0.19	1.00	0.72	0.13
Uniform Delay, d1	46.0	28.3	20.6	44.3	30.0	19.7	41.1	36.6	30.3	44.0	37.1	32.5
Progression Factor	1.00	1.00	1.00	0.95	1.42	1.95	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	62.0	4.9	0.2	0.8	9.6	0.0	11.9	12.6	1.1	45.6	6.0	0.8
Delay (s)	108.0	33.3	20.8	42.9	52.2	38.5	53.0	49.2	31.4	89.6	43.1	33.3
Level of Service	F	C	C	D	D	D	D	D	C	F	D	C
Approach Delay (s)		41.3			50.2			48.7			59.2	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM Average Control Delay	48.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	699	1364	300	556	1352	190	398	479	612	176	292	835
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	760	1483	326	604	1470	207	433	521	665	191	317	908
RTOR Reduction (vph)	0	0	137	0	0	100	0	0	310	0	0	1
Lane Group Flow (vph)	760	1483	189	604	1470	107	433	521	355	191	317	907
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	29.0	35.8	35.8	20.2	27.0	27.0	12.0	22.0	22.0	6.0	16.0	45.0
Effective Green, g (s)	29.0	35.8	35.8	20.2	27.0	27.0	12.0	22.0	22.0	6.0	16.0	45.0
Actuated g/C Ratio	0.29	0.36	0.36	0.20	0.27	0.27	0.12	0.22	0.22	0.06	0.16	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	996	1820	567	693	1373	427	412	779	348	206	566	776
v/s Ratio Prot	0.22	0.29		0.18	c0.29		c0.13	0.15		0.06	0.09	c0.34
v/s Ratio Perm			0.12			0.07			0.22			0.23
v/c Ratio	0.76	0.81	0.33	0.87	1.07	0.25	1.05	0.67	1.02	0.93	0.56	1.17
Uniform Delay, d1	32.4	29.1	23.4	38.6	36.5	28.6	44.0	35.7	39.0	46.8	38.8	27.5
Progression Factor	1.43	0.93	1.25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	1.8	0.2	11.6	45.6	0.3	58.3	4.5	53.1	42.3	4.0	89.5
Delay (s)	48.6	28.9	29.5	50.3	82.1	28.9	102.3	40.2	92.1	89.1	42.7	117.0
Level of Service	D	C	C	D	F	C	F	D	F	F	D	F
Approach Delay (s)		34.8			68.9			78.1			96.6	
Approach LOS		C			E			E			F	

Intersection Summary			
HCM Average Control Delay	64.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	347	1278	214	30	1374	131	309	303	74	407	752	23
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	377	1389	233	33	1493	142	336	329	80	442	817	25
RTOR Reduction (vph)	0	0	124	0	0	61	0	0	63	0	0	14
Lane Group Flow (vph)	377	1389	109	33	1493	81	336	329	17	442	817	11
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.0	39.2	39.2	2.4	30.6	30.6	10.0	18.7	18.7	13.7	22.4	22.4
Effective Green, g (s)	11.0	39.2	39.2	2.4	30.6	30.6	10.0	18.7	18.7	13.7	22.4	22.4
Actuated g/C Ratio	0.12	0.44	0.44	0.03	0.34	0.34	0.11	0.21	0.21	0.15	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	420	2215	689	92	1729	538	381	735	329	523	881	394
v/s Ratio Prot	c0.11	0.27		0.01	c0.29		0.10	0.09		c0.13	c0.23	
v/s Ratio Perm			0.07			0.05			0.01			0.01
v/c Ratio	0.90	0.63	0.16	0.36	0.86	0.15	0.88	0.45	0.05	0.85	0.93	0.03
Uniform Delay, d1	38.9	19.7	15.4	43.0	27.7	20.7	39.4	31.1	28.5	37.1	33.0	25.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.21	0.72	0.61
Incremental Delay, d2	21.2	0.6	0.1	2.4	4.7	0.1	20.6	2.0	0.3	11.8	17.0	0.1
Delay (s)	60.1	20.3	15.5	45.4	32.5	20.8	60.0	33.1	28.8	56.8	40.7	15.8
Level of Service	E	C	B	D	C	C	E	C	C	E	D	B
Approach Delay (s)		27.2			31.8			44.8			45.8	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	35.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95			0.95	0.95	1.00	0.95	
Frt		1.00	0.85	1.00	1.00			0.97	0.85	1.00	0.95	
Flt Protected		1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539			1650	1504	1770	3351	
Flt Permitted		1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539			1650	1504	1770	3351	
Volume (vph)	0	907	179	415	766	0	218	0	568	385	226	124
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	986	195	451	833	0	237	0	617	418	246	135
RTOR Reduction (vph)	0	0	56	0	0	0	0	7	314	0	62	0
Lane Group Flow (vph)	0	986	139	451	833	0	0	291	242	418	319	0
Turn Type			Perm	Prot			Split		Perm	Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)		30.0	30.0	27.0	61.0			22.0	22.0	25.0	25.0	
Effective Green, g (s)		30.0	30.0	27.0	61.0			22.0	22.0	25.0	25.0	
Actuated g/C Ratio		0.25	0.25	0.22	0.51			0.18	0.18	0.21	0.21	
Clearance Time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		885	396	398	1799			303	276	369	698	
v/s Ratio Prot		c0.28		c0.25	0.24			c0.18		c0.24	0.10	
v/s Ratio Perm			0.09						0.16			
v/c Ratio		1.11	0.35	1.13	0.46			0.96	0.88	1.13	0.46	
Uniform Delay, d1		45.0	37.0	46.5	19.0			48.6	47.7	47.5	41.6	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		66.7	0.5	86.6	0.2			40.3	25.4	88.0	2.2	
Delay (s)		111.7	37.5	133.1	19.2			88.8	73.1	135.5	43.7	
Level of Service		F	D	F	B			F	E	F	D	
Approach Delay (s)		99.4			59.2			78.6			91.7	
Approach LOS		F			E			E			F	

Intersection Summary			
HCM Average Control Delay	81.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.92	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1557	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.55		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1557	1504	1991		1583
Volume (vph)	348	1187	0	0	1249	411	166	134	430	333	0	458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	378	1290	0	0	1358	447	180	146	467	362	0	498
RTOR Reduction (vph)	0	0	0	0	0	82	0	35	42	0	0	310
Lane Group Flow (vph)	378	1290	0	0	1358	365	180	284	252	362	0	188
Turn Type	Prot					Prot	Split		Perm	custom		custom
Protected Phases	7	4			8	8	2	2				
Permitted Phases									2	6		6
Actuated Green, G (s)	23.0	68.0			41.0	41.0	21.0	21.0	21.0	19.0		19.0
Effective Green, g (s)	23.0	68.0			41.0	41.0	21.0	21.0	21.0	19.0		19.0
Actuated g/C Ratio	0.19	0.57			0.34	0.34	0.18	0.18	0.18	0.16		0.16
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	339	2005			1209	541	294	272	263	315		251
v/s Ratio Prot	c0.21	0.36			c0.38	0.23	0.11	c0.18				
v/s Ratio Perm									0.17	c0.18		0.12
v/c Ratio	1.12	0.64			1.12	0.67	0.61	1.04	0.96	1.15		0.75
Uniform Delay, d1	48.5	17.7			39.5	33.8	45.7	49.5	49.1	50.5		48.2
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	83.6	0.7			66.7	3.3	9.2	66.1	45.7	97.5		18.5
Delay (s)	132.1	18.4			106.2	37.1	54.9	115.6	94.7	148.0		66.7
Level of Service	F	B			F	D	D	F	F	F		E
Approach Delay (s)		44.2			89.1			94.1			100.9	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	77.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

2017 BASELINE PLUS PROJECT PHASES 1-4 WITH MITIGATION TRAFFIC CONDITION

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	776	2097	98	120	1299	313	154	1023	94	143	1248	575
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	843	2279	107	130	1412	340	167	1112	102	155	1357	625
RTOR Reduction (vph)	0	0	40	0	0	80	0	0	64	0	0	1
Lane Group Flow (vph)	843	2279	67	130	1412	260	167	1112	38	155	1357	624
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	24.0	47.0	47.0	4.0	27.0	27.0	5.0	27.0	27.0	6.0	28.0	52.0
Effective Green, g (s)	24.0	47.0	47.0	4.0	27.0	27.0	5.0	27.0	27.0	6.0	28.0	52.0
Actuated g/C Ratio	0.24	0.47	0.47	0.04	0.27	0.27	0.05	0.27	0.27	0.06	0.28	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	824	2390	744	137	1373	427	172	1373	427	206	1424	886
v/s Ratio Prot	c0.25	c0.45		0.04	0.28		c0.05	0.22		0.05	c0.27	c0.17
v/s Ratio Perm			0.04			0.16			0.02			0.23
v/c Ratio	1.02	0.95	0.09	0.95	1.03	0.61	0.97	0.81	0.09	0.75	0.95	0.70
Uniform Delay, d1	38.0	25.5	14.7	47.9	36.5	31.9	47.4	34.1	27.3	46.3	35.4	18.2
Progression Factor	1.21	1.13	2.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.7	3.8	0.0	60.6	31.8	2.5	59.8	5.3	0.4	14.4	15.0	2.6
Delay (s)	69.7	32.5	30.0	108.5	68.3	34.3	107.2	39.4	27.7	60.6	50.3	20.7
Level of Service	E	C	C	F	E	C	F	D	C	E	D	C
Approach Delay (s)		42.1			65.0			46.7			42.4	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	47.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	244	272	184	250	151	206
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	265	296	200	272	164	224

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1
Volume Total (vph)	265	296	200	272	388
Volume Left (vph)	265	0	0	0	164
Volume Right (vph)	0	296	0	272	0
Hadj (s)	0.53	-0.67	0.03	-0.67	0.12
Departure Headway (s)	7.4	6.2	6.9	6.2	6.7
Degree Utilization, x	0.55	0.51	0.39	0.47	0.72
Capacity (veh/h)	463	560	501	559	517
Control Delay (s)	17.9	14.4	13.0	13.4	25.2
Approach Delay (s)	16.0		13.3		25.2
Approach LOS	C		B		D

Intersection Summary			
Delay	17.6		
HCM Level of Service	C		
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	3433	1583
Volume (vph)	425	179	539	578	270	409
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	462	195	586	628	293	445
RTOR Reduction (vph)	0	131	0	0	0	375
Lane Group Flow (vph)	462	64	586	628	293	70
Turn Type		Perm	Prot			Perm
Protected Phases	6		5	2	4	
Permitted Phases		6				4
Actuated Green, G (s)	26.2	26.2	29.2	59.4	12.6	12.6
Effective Green, g (s)	26.2	26.2	29.2	59.4	12.6	12.6
Actuated g/C Ratio	0.33	0.33	0.36	0.74	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	610	518	646	1383	541	249
v/s Ratio Prot	c0.25		c0.33	0.34	c0.09	
v/s Ratio Perm		0.04				0.04
v/c Ratio	0.76	0.12	0.91	0.45	0.54	0.28
Uniform Delay, d1	24.1	18.9	24.1	4.0	31.0	29.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.5	0.5	16.4	1.1	1.1	0.6
Delay (s)	32.6	19.3	40.5	5.1	32.2	30.3
Level of Service	C	B	D	A	C	C
Approach Delay (s)	28.7			22.2	31.1	
Approach LOS	C			C	C	

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00		1.00		1.00	1.00	
Frt		0.99			1.00	0.85		1.00		1.00	0.85	
Flt Protected		0.98			1.00	1.00		0.95		0.95	1.00	
Satd. Flow (prot)		3432			1859	1583		1771		1770	1586	
Flt Permitted		0.65			0.94	1.00		0.35		0.74	1.00	
Satd. Flow (perm)		2270			1748	1583		656		1377	1586	
Volume (vph)	403	609	94	17	387	272	54	0	1	311	4	398
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	438	662	102	18	421	296	59	0	1	338	4	433
RTOR Reduction (vph)	0	9	0	0	0	112	0	1	0	0	312	0
Lane Group Flow (vph)	0	1193	0	0	439	184	0	59	0	338	125	0
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2		2	4			8		
Actuated Green, G (s)		46.1			46.1	46.1		20.9		20.9	20.9	
Effective Green, g (s)		46.1			46.1	46.1		20.9		20.9	20.9	
Actuated g/C Ratio		0.61			0.61	0.61		0.28		0.28	0.28	
Clearance Time (s)		4.0			4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		1395			1074	973		183		384	442	
v/s Ratio Prot											0.08	
v/s Ratio Perm		c0.53			0.25	0.12		0.09		c0.25		
v/c Ratio		0.86			0.41	0.19		0.32		0.88	0.28	
Uniform Delay, d1		11.7			7.4	6.3		21.4		25.9	21.2	
Progression Factor		1.00			0.61	0.54		1.00		1.00	1.00	
Incremental Delay, d2		6.9			1.0	0.4		1.0		20.2	0.4	
Delay (s)		18.6			5.6	3.8		22.5		46.1	21.5	
Level of Service		B			A	A		C		D	C	
Approach Delay (s)		18.6			4.9			22.5			32.2	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3499		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3499		1770	3539	1583	1770	3539	1583
Volume (vph)	107	869	79	115	743	62	60	625	52	29	676	215
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	116	945	86	125	808	67	65	679	57	32	735	234
RTOR Reduction (vph)	0	0	59	0	10	0	0	0	41	0	0	170
Lane Group Flow (vph)	116	945	27	125	865	0	65	679	16	32	735	64
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	3.0	18.1	18.1	5.1	20.2		2.1	16.3	16.3	1.4	15.6	15.6
Effective Green, g (s)	3.0	18.1	18.1	5.1	20.2		2.1	16.3	16.3	1.4	15.6	15.6
Actuated g/C Ratio	0.05	0.32	0.32	0.09	0.36		0.04	0.29	0.29	0.02	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	181	1126	504	159	1242		65	1014	453	44	970	434
v/s Ratio Prot	0.03	c0.27		c0.07	0.25		c0.04	0.19		0.02	c0.21	
v/s Ratio Perm			0.02						0.01			0.04
v/c Ratio	0.64	0.84	0.05	0.79	0.70		1.00	0.67	0.04	0.73	0.76	0.15
Uniform Delay, d1	26.4	18.0	13.5	25.4	15.7		27.4	17.9	14.6	27.6	18.9	15.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.5	5.6	0.0	22.1	1.7		111.6	1.7	0.0	45.3	3.4	0.2
Delay (s)	34.0	23.7	13.5	47.4	17.4		139.0	19.6	14.7	72.8	22.4	15.8
Level of Service	C	C	B	D	B		F	B	B	E	C	B
Approach Delay (s)		24.0			21.2			29.0			22.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	56.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Volume (vph)	9	631	41	349	802	379	563	389	3	16	331	594
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	686	45	379	872	412	612	423	3	17	360	646
RTOR Reduction (vph)	0	0	33	0	0	240	0	0	2	0	0	9
Lane Group Flow (vph)	10	686	12	379	872	172	612	423	1	17	360	637
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		1	6		5	2	3
Permitted Phases			4			8			6			2
Actuated Green, G (s)	0.8	19.2	19.2	12.9	31.3	31.3	14.1	26.1	26.1	0.8	12.8	25.7
Effective Green, g (s)	0.8	19.2	19.2	12.9	31.3	31.3	14.1	26.1	26.1	0.8	12.8	25.7
Actuated g/C Ratio	0.01	0.26	0.26	0.17	0.42	0.42	0.19	0.35	0.35	0.01	0.17	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	19	906	405	590	1477	661	645	1232	551	19	604	627
v/s Ratio Prot	0.01	c0.19		0.11	0.25		c0.18	0.12		0.01	0.10	c0.17
v/s Ratio Perm			0.01			0.11			0.00			0.23
v/c Ratio	0.53	0.76	0.03	0.64	0.59	0.26	0.95	0.34	0.00	0.89	0.60	1.02
Uniform Delay, d1	36.9	25.7	20.9	28.9	16.9	14.3	30.1	18.1	16.0	37.1	28.7	24.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	0.99	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.9	3.7	0.0	2.4	0.6	0.2	14.8	0.4	0.0	155.2	4.3	40.2
Delay (s)	60.8	29.4	20.9	31.3	17.5	14.5	46.2	18.3	16.0	192.2	33.0	64.8
Level of Service	E	C	C	C	B	B	D	B	B	F	C	E
Approach Delay (s)		29.3			19.9			34.7			55.8	
Approach LOS		C			B			C			E	

Intersection Summary			
HCM Average Control Delay	33.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95			0.95	0.95	0.97	0.95	
Frt		1.00	0.85	1.00	1.00			0.87	0.85	1.00	0.97	
Flt Protected		1.00	1.00	0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539			1527	1504	3433	3429	
Flt Permitted		1.00	1.00	0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539			1527	1504	3433	3429	
Volume (vph)	0	1285	31	107	579	0	29	0	448	178	354	93
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1397	34	116	629	0	32	0	487	193	385	101
RTOR Reduction (vph)	0	0	9	0	0	0	0	168	168	0	26	0
Lane Group Flow (vph)	0	1397	25	116	629	0	0	101	82	193	460	0
Turn Type			Perm	Prot			Split		Perm	Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)		36.1	36.1	6.0	46.1			10.4	10.4	16.0	16.0	
Effective Green, g (s)		36.1	36.1	6.0	46.1			10.4	10.4	16.0	16.0	
Actuated g/C Ratio		0.43	0.43	0.07	0.55			0.12	0.12	0.19	0.19	
Clearance Time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1512	676	126	1931			188	185	650	649	
v/s Ratio Prot		c0.39		c0.07	0.18			c0.07		0.06	c0.13	
v/s Ratio Perm			0.02						0.05			
v/c Ratio		0.92	0.04	0.92	0.33			0.54	0.44	0.30	0.71	
Uniform Delay, d1		22.9	14.1	39.0	10.6			34.8	34.4	29.4	32.1	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		9.8	0.0	56.2	0.1			2.9	1.7	1.2	6.4	
Delay (s)		32.7	14.1	95.2	10.7			37.7	36.0	30.6	38.5	
Level of Service		C	B	F	B			D	D	C	D	
Approach Delay (s)		32.3			23.9			36.9			36.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	31.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.91	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98	1.00	0.95		1.00
Satd. Flow (prot)	3433	3539			3539	1583	1681	1515	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98	1.00	0.59		1.00
Satd. Flow (perm)	3433	3539			3539	1583	1681	1515	1504	2125		1583
Volume (vph)	363	1015	0	0	571	245	288	5	370	220	0	233
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	395	1103	0	0	621	266	313	5	402	239	0	253
RTOR Reduction (vph)	0	0	0	0	0	141	0	56	74	0	0	203
Lane Group Flow (vph)	395	1103	0	0	621	125	214	198	178	239	0	50
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	14.4	35.6			17.2	17.2	17.1	17.1	17.1	16.0		16.0
Effective Green, g (s)	14.4	35.6			17.2	17.2	17.1	17.1	17.1	16.0		16.0
Actuated g/C Ratio	0.18	0.44			0.21	0.21	0.21	0.21	0.21	0.20		0.20
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	613	1561			754	337	356	321	319	421		314
v/s Ratio Prot	0.12	c0.31			c0.18		0.13	c0.13				
v/s Ratio Perm						0.08			0.12	c0.11		0.03
v/c Ratio	0.64	0.71			0.82	0.37	0.60	0.62	0.56	0.57		0.16
Uniform Delay, d1	30.8	18.3			30.3	27.1	28.7	28.8	28.4	29.2		26.8
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	2.3	1.5			7.3	0.7	7.3	8.6	6.9	5.5		1.1
Delay (s)	33.1	19.8			37.6	27.8	36.0	37.4	35.3	34.7		27.9
Level of Service	C	B			D	C	D	D	D	C		C
Approach Delay (s)		23.3			34.6			36.3			31.2	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	800	1307	97	91	1984	151	242	1087	62	250	1321	616
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	870	1421	105	99	2157	164	263	1182	67	272	1436	670
RTOR Reduction (vph)	0	0	52	0	0	42	0	0	50	0	0	1
Lane Group Flow (vph)	870	1421	53	99	2157	122	263	1182	17	272	1436	669
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	24.0	58.1	58.1	6.9	41.0	41.0	8.0	30.0	30.0	9.0	31.0	55.0
Effective Green, g (s)	24.0	58.1	58.1	6.9	41.0	41.0	8.0	30.0	30.0	9.0	31.0	55.0
Actuated g/C Ratio	0.20	0.48	0.48	0.06	0.34	0.34	0.07	0.25	0.25	0.08	0.26	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	687	2462	766	197	1737	541	229	1271	396	257	1314	778
v/s Ratio Prot	c0.25	0.28		0.03	c0.42		0.08	0.23		c0.08	c0.28	0.17
v/s Ratio Perm			0.03			0.08			0.01			0.25
v/c Ratio	1.27	0.58	0.07	0.50	1.24	0.23	1.15	0.93	0.04	1.06	1.09	0.86
Uniform Delay, d1	48.0	22.2	16.5	54.9	39.5	28.2	56.0	44.0	34.1	55.5	44.5	29.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	131.2	0.3	0.0	2.0	113.9	0.2	105.4	13.2	0.2	72.4	54.2	9.6
Delay (s)	179.2	22.5	16.6	56.9	153.4	28.4	161.4	57.2	34.3	127.9	98.7	38.7
Level of Service	F	C	B	E	F	C	F	E	C	F	F	D
Approach Delay (s)		79.1			141.0			74.3			85.1	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM Average Control Delay	97.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	310	83	273	303	140	161
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	337	90	297	329	152	175

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1
Volume Total (vph)	337	90	297	329	327
Volume Left (vph)	337	0	0	0	152
Volume Right (vph)	0	90	0	329	0
Hadj (s)	0.53	-0.67	0.03	-0.67	0.13
Departure Headway (s)	7.5	6.3	6.7	6.0	6.8
Degree Utilization, x	0.71	0.16	0.55	0.55	0.62
Capacity (veh/h)	461	545	523	586	514
Control Delay (s)	25.4	9.3	16.4	14.8	20.1
Approach Delay (s)	22.0		15.6		20.1
Approach LOS	C		C		C

Intersection Summary			
Delay	18.6		
HCM Level of Service	C		
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	3433	1583
Volume (vph)	845	307	555	476	498	455
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	918	334	603	517	541	495
RTOR Reduction (vph)	0	131	0	0	0	411
Lane Group Flow (vph)	918	203	603	517	541	84
Turn Type		Perm	Prot			Perm
Protected Phases	6		5	2	4	
Permitted Phases		6				4
Actuated Green, G (s)	49.0	49.0	33.0	86.0	16.0	16.0
Effective Green, g (s)	49.0	49.0	33.0	86.0	16.0	16.0
Actuated g/C Ratio	0.45	0.45	0.30	0.78	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	830	705	531	1457	499	230
v/s Ratio Prot	c0.49		c0.34	0.28	c0.16	
v/s Ratio Perm		0.13				0.05
v/c Ratio	1.11	0.29	1.14	0.35	1.08	0.37
Uniform Delay, d1	30.5	19.4	38.5	3.6	47.0	42.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	64.5	1.0	82.1	0.7	65.0	1.0
Delay (s)	95.0	20.4	120.6	4.3	112.0	43.4
Level of Service	F	C	F	A	F	D
Approach Delay (s)	75.1			66.9	79.2	
Approach LOS	E			E	E	

Intersection Summary			
HCM Average Control Delay	73.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00		1.00		1.00	1.00	
Frt		0.98			1.00	0.85		0.98		1.00	0.85	
Flt Protected		0.99			1.00	1.00		0.96		0.95	1.00	
Satd. Flow (prot)		3451			1860	1583		1753		1770	1588	
Flt Permitted		0.52			0.87	1.00		0.19		0.67	1.00	
Satd. Flow (perm)		1826			1627	1583		343		1251	1588	
Volume (vph)	263	915	132	27	901	673	228	1	36	390	8	464
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	286	995	143	29	979	732	248	1	39	424	9	504
RTOR Reduction (vph)	0	11	0	0	0	117	0	7	0	0	67	0
Lane Group Flow (vph)	0	1413	0	0	1008	615	0	281	0	424	446	0
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2		2	4			8		
Actuated Green, G (s)		44.0			44.0	44.0		28.0		28.0	28.0	
Effective Green, g (s)		44.0			44.0	44.0		28.0		28.0	28.0	
Actuated g/C Ratio		0.55			0.55	0.55		0.35		0.35	0.35	
Clearance Time (s)		4.0			4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		1004			895	871		120		438	556	
v/s Ratio Prot											0.28	
v/s Ratio Perm		c0.77			0.62	0.39		c0.82		0.34		
v/c Ratio		2.75dl			1.13	0.71		2.34		0.97	0.80	
Uniform Delay, d1		18.0			18.0	13.2		26.0		25.6	23.5	
Progression Factor		1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		189.4			71.1	4.8		628.3		34.4	8.2	
Delay (s)		207.4			89.1	18.0		654.3		59.9	31.7	
Level of Service		F			F	B		F		E	C	
Approach Delay (s)		207.4			59.2			654.3			44.5	
Approach LOS		F			E			F			D	

Intersection Summary			
HCM Average Control Delay	143.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	143.4%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3502		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3502		1770	3539	1583	1770	3539	1583
Volume (vph)	397	649	111	35	1225	91	51	898	417	79	1094	365
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	432	705	121	38	1332	99	55	976	453	86	1189	397
RTOR Reduction (vph)	0	0	63	0	4	0	0	0	160	0	0	181
Lane Group Flow (vph)	432	705	58	38	1427	0	55	976	294	86	1189	216
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	15.6	58.0	58.0	3.6	46.0		4.0	38.0	38.0	6.0	40.0	40.0
Effective Green, g (s)	15.6	58.0	58.0	3.6	46.0		4.0	38.0	38.0	6.0	40.0	40.0
Actuated g/C Ratio	0.13	0.48	0.48	0.03	0.38		0.03	0.31	0.31	0.05	0.33	0.33
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	440	1688	755	52	1325		58	1106	495	87	1164	521
v/s Ratio Prot	c0.13	0.20		0.02	c0.41		0.03	0.28		c0.05	c0.34	
v/s Ratio Perm			0.04						0.19			0.14
v/c Ratio	0.98	0.42	0.08	0.73	1.08		0.95	0.88	0.59	0.99	1.02	0.42
Uniform Delay, d1	52.9	20.8	17.3	58.5	37.8		58.7	39.7	35.3	57.8	40.8	31.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	37.9	0.2	0.0	40.9	48.2		98.4	8.5	1.9	91.8	31.9	0.5
Delay (s)	90.8	20.9	17.3	99.4	86.0		157.1	48.2	37.2	149.6	72.7	32.3
Level of Service	F	C	B	F	F		F	D	D	F	E	C
Approach Delay (s)		44.6			86.3			48.9			67.1	
Approach LOS		D			F			D			E	

Intersection Summary			
HCM Average Control Delay	62.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	121.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Volume (vph)	7	998	59	429	1546	852	587	760	11	49	886	794
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	1085	64	466	1680	926	638	826	12	53	963	863
RTOR Reduction (vph)	0	0	27	0	0	210	0	0	6	0	0	2
Lane Group Flow (vph)	8	1085	37	466	1680	716	638	826	6	53	963	861
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		1	6		5	2	3
Permitted Phases			4			8			6			2
Actuated Green, G (s)	0.8	35.2	35.2	23.0	57.4	57.4	19.0	38.9	38.9	6.9	26.8	49.8
Effective Green, g (s)	0.8	35.2	35.2	23.0	57.4	57.4	19.0	38.9	38.9	6.9	26.8	49.8
Actuated g/C Ratio	0.01	0.29	0.29	0.19	0.48	0.48	0.16	0.32	0.32	0.06	0.22	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	12	1038	464	658	1693	757	544	1147	513	102	790	710
v/s Ratio Prot	0.00	0.31		0.14	c0.47		c0.19	0.23		0.03	0.27	c0.23
v/s Ratio Perm			0.02			0.45			0.00			0.31
v/c Ratio	0.67	1.05	0.08	0.71	0.99	0.95	1.17	0.72	0.01	0.52	1.22	1.21
Uniform Delay, d1	59.5	42.4	30.7	45.4	31.1	29.8	50.5	35.8	27.5	54.9	46.6	35.1
Progression Factor	0.99	1.07	1.37	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	86.1	39.8	0.1	3.5	20.0	20.4	96.0	3.9	0.0	4.4	109.9	108.3
Delay (s)	144.9	85.1	42.2	48.9	51.0	50.2	146.5	39.7	27.5	59.4	156.5	143.4
Level of Service	F	F	D	D	D	D	F	D	C	E	F	F
Approach Delay (s)		83.2			50.4			85.7			147.7	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	86.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	103.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95			0.95	0.95	0.97	0.95	
Frt		1.00	0.85	1.00	1.00			0.97	0.85	1.00	0.95	
Flt Protected		1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539			1655	1504	3433	3351	
Flt Permitted		1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539			1655	1504	3433	3351	
Volume (vph)	0	907	179	415	766	0	218	0	568	385	226	124
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	986	195	451	833	0	237	0	617	418	246	135
RTOR Reduction (vph)	0	0	62	0	0	0	0	7	345	0	67	0
Lane Group Flow (vph)	0	986	133	451	833	0	0	280	222	418	314	0
Turn Type			Perm	Prot			Split		Perm	Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)		30.0	30.0	28.0	62.0			19.9	19.9	16.0	16.0	
Effective Green, g (s)		30.0	30.0	28.0	62.0			19.9	19.9	16.0	16.0	
Actuated g/C Ratio		0.27	0.27	0.25	0.56			0.18	0.18	0.15	0.15	
Clearance Time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		966	432	451	1997			300	272	500	488	
v/s Ratio Prot		c0.28		c0.25	0.24			c0.17		c0.12	0.09	
v/s Ratio Perm			0.08						0.15			
v/c Ratio		1.02	0.31	1.00	0.42			0.93	0.82	0.84	0.64	
Uniform Delay, d1		40.0	31.7	41.0	13.7			44.4	43.3	45.7	44.3	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		34.3	0.4	42.4	0.1			34.9	17.0	15.2	6.4	
Delay (s)		74.2	32.1	83.3	13.8			79.3	60.3	60.9	50.7	
Level of Service		E	C	F	B			E	E	E	D	
Approach Delay (s)		67.3			38.2			66.7			56.0	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM Average Control Delay	55.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	109.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.92	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3433	3539			3539	1583	1681	1556	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.55		1.00
Satd. Flow (perm)	3433	3539			3539	1583	1681	1556	1504	1985		1583
Volume (vph)	348	1187	0	0	1249	411	166	134	430	333	0	458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	378	1290	0	0	1358	447	180	146	467	362	0	498
RTOR Reduction (vph)	0	0	0	0	0	99	0	39	39	0	0	219
Lane Group Flow (vph)	378	1290	0	0	1358	348	180	283	252	362	0	279
Turn Type	Prot					Prot	Split		Perm	custom		custom
Protected Phases	7	4			8	8	2	2				
Permitted Phases									2	6		6
Actuated Green, G (s)	11.0	52.0			37.0	37.0	18.0	18.0	18.0	18.0		18.0
Effective Green, g (s)	11.0	52.0			37.0	37.0	18.0	18.0	18.0	18.0		18.0
Actuated g/C Ratio	0.11	0.52			0.37	0.37	0.18	0.18	0.18	0.18		0.18
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	378	1840			1309	586	303	280	271	357		285
v/s Ratio Prot	c0.11	0.36			c0.38	0.22	0.11	c0.18				
v/s Ratio Perm									0.17	c0.18		0.18
v/c Ratio	1.00	0.70			1.04	0.59	0.59	1.01	0.93	1.01		0.98
Uniform Delay, d1	44.5	18.1			31.5	25.4	37.6	41.0	40.4	41.0		40.8
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	46.3	1.2			35.1	1.6	8.3	56.2	39.0	51.2		48.3
Delay (s)	90.8	19.4			66.6	27.1	46.0	97.2	79.4	92.2		89.1
Level of Service	F	B			E	C	D	F	E	F		F
Approach Delay (s)		35.5			56.8			79.0			90.4	
Approach LOS		D			E			E			F	

Intersection Summary			
HCM Average Control Delay	59.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

2019 BASELINE PLUS PROJECT PHASES 1-5 TRAFFIC CONDITION

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1795	1863	1583	3433	1583
Flt Permitted		0.79	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1465	1863	1583	3433	1583
Volume (vph)	92	29	12	98	330	136
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	32	13	107	359	148
RTOR Reduction (vph)	0	0	0	68	0	100
Lane Group Flow (vph)	0	132	13	39	359	48
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)		9.4	9.4	9.4	8.4	8.4
Effective Green, g (s)		9.4	9.4	9.4	8.4	8.4
Actuated g/C Ratio		0.36	0.36	0.36	0.33	0.33
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		534	679	577	1118	515
v/s Ratio Prot			0.01			
v/s Ratio Perm		c0.09		0.02	c0.10	0.03
v/c Ratio		0.25	0.02	0.07	0.32	0.09
Uniform Delay, d1		5.7	5.2	5.3	6.6	6.1
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	0.0	0.0	0.2	0.1
Delay (s)		6.0	5.3	5.4	6.7	6.1
Level of Service		A	A	A	A	A
Approach Delay (s)		6.0	5.4		6.5	
Approach LOS		A	A		A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	25.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Volume (vph)	35	979	192	0	0	538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	1064	209	0	0	585
RTOR Reduction (vph)	0	738	0	0	0	0
Lane Group Flow (vph)	38	326	209	0	0	585
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	10.1	10.1	14.9			14.9
Effective Green, g (s)	10.1	10.1	14.9			14.9
Actuated g/C Ratio	0.31	0.31	0.45			0.45
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	542	853	841			841
v/s Ratio Prot	0.02		0.11			c0.31
v/s Ratio Perm		c0.12				
v/c Ratio	0.07	0.38	0.25			0.70
Uniform Delay, d1	8.1	9.0	5.6			7.2
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	0.3	0.2			2.5
Delay (s)	8.2	9.3	5.7			9.8
Level of Service	A	A	A			A
Approach Delay (s)	9.2		5.7			9.8
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	33.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3308		3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3308		3433	5085	1583	1770	3539	1583
Volume (vph)	588	240	145	41	146	113	33	1212	299	151	369	374
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	639	261	158	45	159	123	36	1317	325	164	401	407
RTOR Reduction (vph)	0	0	97	0	107	0	0	0	124	0	0	250
Lane Group Flow (vph)	639	261	61	45	175	0	36	1317	201	164	401	157
Turn Type	Prot		pm+ov	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	16.0	24.3	30.7	2.4	10.7		6.4	24.8	24.8	12.5	30.9	30.9
Effective Green, g (s)	16.0	24.3	30.7	2.4	10.7		6.4	24.8	24.8	12.5	30.9	30.9
Actuated g/C Ratio	0.20	0.30	0.38	0.03	0.13		0.08	0.31	0.31	0.16	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	687	1075	687	103	442		275	1576	491	277	1367	611
v/s Ratio Prot	c0.19	0.07	0.01	0.01	c0.05		0.01	c0.26		c0.09	0.11	
v/s Ratio Perm			0.03						0.13			0.10
v/c Ratio	0.93	0.24	0.09	0.44	0.40		0.13	0.84	0.41	0.59	0.29	0.26
Uniform Delay, d1	31.5	20.9	15.7	38.1	31.7		34.2	25.7	21.8	31.4	17.0	16.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.2	0.1	0.1	2.9	0.6		0.2	5.4	2.5	3.4	0.5	1.0
Delay (s)	50.7	21.1	15.8	41.1	32.3		34.4	31.1	24.3	34.8	17.5	17.7
Level of Service	D	C	B	D	C		C	C	C	C	B	B
Approach Delay (s)		38.2			33.5			29.9			20.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

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                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Weber/Herndon
********************************************************************************
Average Delay (sec/veh):      0.2       Worst Case Level Of Service: B[ 10.6]
********************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  1    0  0  3  0  1    1  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    20     0    0     0     0  838   158    10  908     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0    20     0    0     0     0  838   158    10  908     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0    20     0    0     0     0  838   158    10  908     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    22     0    0     0     0  911   172    11  987     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    22     0    0     0     0  911   172    11  987     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   304  xxxx xxxx   329  xxxx xxxx xxxxx  1083 xxxx xxxxx
Potent Cap.: xxxx xxxx   698  xxxx xxxx   673  xxxx xxxx xxxxx   652 xxxx xxxxx
Move Cap.:   xxxx xxxx   698  xxxx xxxx   673  xxxx xxxx xxxxx   652 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.03  xxxx xxxx  0.00  xxxx xxxx  xxxx  0.02 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.1  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx  10.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  10.6 xxxx xxxxx
LOS by Move:   *    *     B     *    *     *     *    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      10.3           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        B                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	267	233	377	101	618	190	335	109	164	181	131	257
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	290	253	410	110	672	207	364	118	178	197	142	279
RTOR Reduction (vph)	0	0	205	0	0	162	0	0	115	0	0	48
Lane Group Flow (vph)	290	253	205	110	672	45	364	118	63	197	142	231
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	17.3	34.8	4.0	15.3	15.3	17.5	24.9	24.9	7.8	15.2	21.2
Effective Green, g (s)	6.0	17.3	34.8	4.0	15.3	15.3	17.5	24.9	24.9	7.8	15.2	21.2
Actuated g/C Ratio	0.09	0.25	0.50	0.06	0.22	0.22	0.25	0.36	0.36	0.11	0.22	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	294	1257	877	196	1111	346	858	663	563	383	405	570
v/s Ratio Prot	c0.08	0.05	0.06	0.03	c0.13		c0.11	0.06		c0.06	0.08	c0.03
v/s Ratio Perm			0.07			0.03			0.04			0.11
v/c Ratio	0.99	0.20	0.23	0.56	0.60	0.13	0.42	0.18	0.11	0.51	0.35	0.41
Uniform Delay, d1	32.0	20.9	10.0	32.1	24.6	22.0	22.0	15.5	15.1	29.3	23.2	19.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	48.3	0.1	0.1	3.6	0.9	0.2	1.5	0.6	0.4	1.2	0.5	0.5
Delay (s)	80.3	21.0	10.2	35.8	25.6	22.2	23.6	16.1	15.5	30.5	23.7	19.9
Level of Service	F	C	B	D	C	C	C	B	B	C	C	B
Approach Delay (s)		34.4			26.0			20.1			24.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91		0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.93		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	1770	5085		3433	1732		3433	1863	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	1770	5085		3433	1732		3433	1863	
Volume (vph)	50	462	25	155	487	0	48	133	117	50	297	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	502	27	168	529	0	52	145	127	54	323	0
RTOR Reduction (vph)	0	0	21	0	0	0	0	48	0	0	0	0
Lane Group Flow (vph)	54	502	6	168	529	0	52	224	0	54	323	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	2.4	12.8	12.8	7.8	18.2		3.8	19.6		3.8	19.6	
Effective Green, g (s)	2.4	12.8	12.8	7.8	18.2		3.8	19.6		3.8	19.6	
Actuated g/C Ratio	0.04	0.21	0.21	0.13	0.30		0.06	0.33		0.06	0.33	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	137	1085	338	230	1542		217	566		217	609	
v/s Ratio Prot	0.02	c0.10		c0.09	0.10		0.02	0.13		c0.02	c0.17	
v/s Ratio Perm			0.00									
v/c Ratio	0.39	0.46	0.02	0.73	0.34		0.24	0.39		0.25	0.53	
Uniform Delay, d1	28.1	20.6	18.6	25.1	16.3		26.7	15.6		26.7	16.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	0.3	0.0	11.3	0.1		0.6	2.1		0.6	3.3	
Delay (s)	30.0	20.9	18.7	36.4	16.4		27.3	17.7		27.3	19.7	
Level of Service	C	C	B	D	B		C	B		C	B	
Approach Delay (s)		21.6			21.2			19.2			20.8	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.91		0.97	0.91		0.76
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5085		3433	5085		3610
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5085		3433	5085		3610
Volume (vph)	626	0	1196	594	0	1050
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	680	0	1300	646	0	1141
RTOR Reduction (vph)	0	0	0	0	0	64
Lane Group Flow (vph)	680	0	1300	646	0	1077
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	14.1		27.9	50.0		27.9
Effective Green, g (s)	14.1		27.9	50.0		27.9
Actuated g/C Ratio	0.28		0.56	1.00		0.56
Clearance Time (s)	4.0		4.0	3.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	1434		1916	5085		2014
v/s Ratio Prot	c0.13		c0.38	0.13		0.30
v/s Ratio Perm						
v/c Ratio	0.47		0.68	0.13		0.53
Uniform Delay, d1	14.9		7.9	0.0		7.0
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.2		1.0	0.0		0.3
Delay (s)	15.1		8.8	0.0		7.2
Level of Service	B		A	A		A
Approach Delay (s)	15.1			5.9	7.2	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1673		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1673		3433	1863	1583
Volume (vph)	6	1534	136	160	1669	113	97	107	225	121	143	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	1667	148	174	1814	123	105	116	245	132	155	26
RTOR Reduction (vph)	0	0	86	0	0	43	0	115	0	0	0	21
Lane Group Flow (vph)	7	1667	62	174	1814	80	105	246	0	132	155	5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	27.2	27.2	5.0	31.4	31.4	3.2	13.6		3.2	13.6	13.6
Effective Green, g (s)	0.8	27.2	27.2	5.0	31.4	31.4	3.2	13.6		3.2	13.6	13.6
Actuated g/C Ratio	0.01	0.42	0.42	0.08	0.48	0.48	0.05	0.21		0.05	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	42	2128	662	264	2456	765	169	350		169	390	331
v/s Ratio Prot	0.00	0.33		c0.05	c0.36		0.03	c0.15		c0.04	0.08	
v/s Ratio Perm			0.04			0.05						0.00
v/c Ratio	0.17	0.78	0.09	0.66	0.74	0.10	0.62	0.70		0.78	0.40	0.02
Uniform Delay, d1	31.8	16.4	11.4	29.2	13.5	9.1	30.3	23.8		30.6	22.2	20.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.9	2.0	0.1	5.8	1.2	0.1	6.9	11.2		20.5	3.0	0.1
Delay (s)	33.6	18.3	11.5	35.0	14.7	9.2	37.2	35.0		51.1	25.2	20.5
Level of Service	C	B	B	D	B	A	D	C		D	C	C
Approach Delay (s)		17.8			16.0			35.5			35.7	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	292	1587	17	112	1432	147	163	239	183	321	334	333
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	317	1725	18	122	1557	160	177	260	199	349	363	362
RTOR Reduction (vph)	0	0	8	0	0	86	0	0	102	0	0	100
Lane Group Flow (vph)	317	1725	10	122	1557	74	177	260	97	349	363	262
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	30.6	30.6	3.2	25.8	34.8	6.0	16.2	16.2	9.0	19.2	19.2
Effective Green, g (s)	8.0	30.6	30.6	3.2	25.8	34.8	6.0	16.2	16.2	9.0	19.2	19.2
Actuated g/C Ratio	0.11	0.41	0.41	0.04	0.34	0.46	0.08	0.22	0.22	0.12	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	366	2075	646	146	1749	819	275	764	342	412	906	405
v/s Ratio Prot	c0.09	c0.34		0.04	0.31	0.01	0.05	0.07		c0.10	0.10	
v/s Ratio Perm			0.01			0.04			0.06			c0.17
v/c Ratio	0.87	0.83	0.02	0.84	0.89	0.09	0.64	0.34	0.28	0.85	0.40	0.65
Uniform Delay, d1	33.0	19.9	13.2	35.6	23.3	11.2	33.5	24.9	24.6	32.3	23.1	24.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.8	3.0	0.0	31.9	6.1	0.0	5.1	1.2	2.1	14.8	1.3	7.7
Delay (s)	51.8	22.9	13.2	67.5	29.4	11.3	38.6	26.1	26.6	47.1	24.5	32.6
Level of Service	D	C	B	E	C	B	D	C	C	D	C	C
Approach Delay (s)		27.2			30.3			29.7			34.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Volume (vph)	17	2083	1	2	1682	50	0	1	0	50	0	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	2264	1	2	1828	54	0	1	0	54	0	11
RTOR Reduction (vph)	0	0	0	0	0	15	0	0	0	0	0	9
Lane Group Flow (vph)	18	2264	1	2	1828	39	0	1	0	54	0	2
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	2.6	54.5	54.5	1.2	53.1	53.1		15.1		3.2		12.8
Effective Green, g (s)	2.6	54.5	54.5	1.2	53.1	53.1		15.1		3.2		12.8
Actuated g/C Ratio	0.03	0.61	0.61	0.01	0.59	0.59		0.17		0.04		0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	99	3079	959	46	3000	934		594		122		225
v/s Ratio Prot	c0.01	c0.45		0.00	0.36			0.00		c0.02		
v/s Ratio Perm			0.00			0.02						c0.00
v/c Ratio	0.18	0.74	0.00	0.04	0.61	0.04		0.00		0.44		0.01
Uniform Delay, d1	42.7	12.6	7.0	43.8	11.8	7.8		31.2		42.5		33.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2	0.9	0.9	0.0	0.4	0.4	0.0		0.0		2.6		0.0
Delay (s)	43.5	13.6	7.0	44.2	12.2	7.8		31.2		45.1		33.2
Level of Service	D	B	A	D	B	A		C		D		C
Approach Delay (s)		13.8			12.1			31.2			43.1	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	92	1997	252	344	1542	24	153	101	409	84	109	72
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	2171	274	374	1676	26	166	110	445	91	118	78
RTOR Reduction (vph)	0	0	86	0	0	7	0	0	248	0	0	65
Lane Group Flow (vph)	100	2171	188	374	1676	19	166	110	197	91	118	13
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.8	41.8	41.8	21.0	54.0	54.0	5.0	18.0	18.0	3.2	16.2	16.2
Effective Green, g (s)	8.8	41.8	41.8	21.0	54.0	54.0	5.0	18.0	18.0	3.2	16.2	16.2
Actuated g/C Ratio	0.09	0.42	0.42	0.21	0.54	0.54	0.05	0.18	0.18	0.03	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	156	2126	662	372	2746	855	172	335	285	110	302	256
v/s Ratio Prot	0.06	c0.43		c0.21	0.33		c0.05	0.06		0.03	0.06	
v/s Ratio Perm			0.12			0.01			c0.12			0.01
v/c Ratio	0.64	1.02	0.28	1.01	0.61	0.02	0.97	0.33	0.69	0.83	0.39	0.05
Uniform Delay, d1	44.1	29.1	19.2	39.5	15.8	10.7	47.4	35.7	38.4	48.1	37.5	35.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	25.1	0.2	48.0	0.4	0.0	57.8	2.6	12.9	37.6	3.8	0.4
Delay (s)	52.8	54.2	19.5	87.5	16.2	10.7	105.3	38.3	51.2	85.7	41.3	35.8
Level of Service	D	D	B	F	B	B	F	D	D	F	D	D
Approach Delay (s)		50.4			29.0			61.7			53.9	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM Average Control Delay	44.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	141	2153	375	202	1672	204	151	208	227	151	208	164
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	153	2340	408	220	1817	222	164	226	247	164	226	178
RTOR Reduction (vph)	0	0	57	0	0	40	0	0	120	0	0	3
Lane Group Flow (vph)	153	2340	351	220	1817	182	164	226	127	164	226	175
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.5	44.0	44.0	7.0	40.5	40.5	5.0	18.0	18.0	5.0	18.0	28.5
Effective Green, g (s)	10.5	44.0	44.0	7.0	40.5	40.5	5.0	18.0	18.0	5.0	18.0	28.5
Actuated g/C Ratio	0.12	0.49	0.49	0.08	0.45	0.45	0.06	0.20	0.20	0.06	0.20	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	2486	774	267	2288	712	191	708	317	191	708	572
v/s Ratio Prot	c0.09	c0.46		0.06	0.36		c0.05	0.06		0.05	0.06	0.04
v/s Ratio Perm			0.22			0.12			c0.08			0.07
v/c Ratio	0.74	0.94	0.45	0.82	0.79	0.26	0.86	0.32	0.40	0.86	0.32	0.31
Uniform Delay, d1	38.4	21.8	15.1	40.9	21.2	15.4	42.1	30.8	31.3	42.1	30.8	23.3
Progression Factor	1.00	1.00	1.00	0.59	1.89	2.44	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.9	8.0	0.4	10.4	1.1	0.1	29.7	1.2	3.7	29.7	1.2	0.3
Delay (s)	51.3	29.8	15.5	34.4	41.2	37.6	71.8	32.0	35.1	71.8	32.0	23.6
Level of Service	D	C	B	C	D	D	E	C	D	E	C	C
Approach Delay (s)		28.9			40.2			43.4			40.8	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Volume (vph)	60	2324	207	70	1957	187	89	177	272	215	225	46
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	2526	225	76	2127	203	97	192	296	234	245	50
RTOR Reduction (vph)	0	0	85	0	0	67	0	0	77	0	0	37
Lane Group Flow (vph)	65	2526	140	76	2127	136	97	192	219	234	245	13
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	43.6	43.6	3.2	43.6	43.6	4.0	16.2	16.2	11.0	23.2	23.2
Effective Green, g (s)	3.2	43.6	43.6	3.2	43.6	43.6	4.0	16.2	16.2	11.0	23.2	23.2
Actuated g/C Ratio	0.04	0.48	0.48	0.04	0.48	0.48	0.04	0.18	0.18	0.12	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	122	2463	767	122	2463	767	153	637	285	216	1311	408
v/s Ratio Prot	0.02	c0.50		c0.02	0.42		0.03	0.05		c0.13	0.05	
v/s Ratio Perm			0.09			0.09			c0.14			0.01
v/c Ratio	0.53	1.03	0.18	0.62	0.86	0.18	0.63	0.30	0.77	1.08	0.19	0.03
Uniform Delay, d1	42.7	23.2	13.1	42.8	20.6	13.1	42.3	32.0	35.1	39.5	26.0	25.0
Progression Factor	0.77	1.46	2.50	0.86	1.72	2.92	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	19.3	0.1	3.4	1.2	0.0	8.3	1.2	17.9	85.2	0.3	0.1
Delay (s)	35.0	53.2	32.9	40.2	36.6	38.3	50.6	33.2	53.0	124.7	26.4	25.1
Level of Service	C	D	C	D	D	D	D	C	D	F	C	C
Approach Delay (s)		51.2			36.8			46.1			69.7	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM Average Control Delay	46.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	633	2064	114	212	1450	329	150	1150	75	140	1144	583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	688	2243	124	230	1576	358	163	1250	82	152	1243	634
RTOR Reduction (vph)	0	0	52	0	0	76	0	0	59	0	0	2
Lane Group Flow (vph)	688	2243	72	230	1576	282	163	1250	23	152	1243	632
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	18.0	39.0	39.0	6.0	27.0	27.0	5.0	25.0	25.0	4.0	24.0	42.0
Effective Green, g (s)	18.0	39.0	39.0	6.0	27.0	27.0	5.0	25.0	25.0	4.0	24.0	42.0
Actuated g/C Ratio	0.20	0.43	0.43	0.07	0.30	0.30	0.06	0.28	0.28	0.04	0.27	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	687	2204	686	229	1526	475	191	1413	440	153	1356	809
v/s Ratio Prot	c0.20	c0.44		0.07	0.31		c0.05	c0.25		0.04	0.24	c0.16
v/s Ratio Perm			0.05			0.18			0.01			0.24
v/c Ratio	1.00	1.02	0.10	1.00	1.03	0.59	0.85	0.88	0.05	0.99	0.92	0.78
Uniform Delay, d1	36.0	25.5	15.1	42.0	31.5	26.8	42.1	31.1	23.8	43.0	32.0	20.2
Progression Factor	0.98	1.44	2.72	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.6	11.0	0.0	60.6	31.9	2.0	29.0	8.4	0.2	70.5	11.2	4.9
Delay (s)	45.9	47.8	41.2	102.6	63.4	28.8	71.1	39.5	24.0	113.5	43.3	25.1
Level of Service	D	D	D	F	E	C	E	D	C	F	D	C
Approach Delay (s)		47.1			61.9			42.1			42.8	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	48.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	211	1692	151	155	1757	404	21	377	53	192	715	263
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	1839	164	168	1910	439	23	410	58	209	777	286
RTOR Reduction (vph)	0	0	86	0	0	145	0	0	44	0	0	147
Lane Group Flow (vph)	229	1839	78	168	1910	294	23	410	14	209	777	139
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	31.0	31.0	5.0	30.0	30.0	1.6	18.0	18.0	5.0	21.4	21.4
Effective Green, g (s)	6.0	31.0	31.0	5.0	30.0	30.0	1.6	18.0	18.0	5.0	21.4	21.4
Actuated g/C Ratio	0.08	0.41	0.41	0.07	0.40	0.40	0.02	0.24	0.24	0.07	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	275	2102	654	229	2034	633	73	1220	380	229	1451	452
v/s Ratio Prot	c0.07	0.36		0.05	c0.38		0.01	0.08		c0.06	c0.15	
v/s Ratio Perm			0.05			0.19			0.01			0.09
v/c Ratio	0.83	0.87	0.12	0.73	0.94	0.46	0.32	0.34	0.04	0.91	0.54	0.31
Uniform Delay, d1	34.0	20.2	13.6	34.3	21.6	16.6	36.2	23.6	21.9	34.8	22.6	21.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.0	4.4	0.1	11.5	9.1	0.5	2.5	0.7	0.2	36.5	1.4	1.8
Delay (s)	53.0	24.6	13.7	45.8	30.7	17.1	38.6	24.3	22.0	71.3	24.0	22.8
Level of Service	D	C	B	D	C	B	D	C	C	E	C	C
Approach Delay (s)		26.7			29.4			24.7			31.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	1863	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	1863	1583			3433	1583
Volume (vph)	469	90	0	0	152	189
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	510	98	0	0	165	205
RTOR Reduction (vph)	0	54	0	0	0	150
Lane Group Flow (vph)	510	44	0	0	165	55
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	12.5	12.5			7.5	7.5
Effective Green, g (s)	12.5	12.5			7.5	7.5
Actuated g/C Ratio	0.45	0.45			0.27	0.27
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	832	707			920	424
v/s Ratio Prot	c0.27				c0.05	
v/s Ratio Perm		0.03				0.03
v/c Ratio	0.61	0.06			0.18	0.13
Uniform Delay, d1	5.9	4.4			7.9	7.8
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	1.3	0.0			0.1	0.1
Delay (s)	7.3	4.4			8.0	7.9
Level of Service	A	A			A	A
Approach Delay (s)	6.8			0.0	7.9	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	28.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1631		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1631		1770	1863	1583
Volume (vph)	38	200	2	297	348	68	50	23	112	5	30	356
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	217	2	323	378	74	54	25	122	5	33	387
RTOR Reduction (vph)	0	0	1	0	0	37	0	99	0	0	0	324
Lane Group Flow (vph)	41	217	1	323	378	37	54	48	0	5	33	63
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6						8
Actuated Green, G (s)	1.8	19.0	19.0	12.8	30.0	30.0	2.2	11.3		0.7	9.8	9.8
Effective Green, g (s)	1.8	19.0	19.0	12.8	30.0	30.0	2.2	11.3		0.7	9.8	9.8
Actuated g/C Ratio	0.03	0.32	0.32	0.21	0.50	0.50	0.04	0.19		0.01	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	53	1124	503	379	1775	794	126	308		21	305	259
v/s Ratio Prot	0.02	0.06		c0.18	c0.11		c0.02	0.03		0.00	0.02	
v/s Ratio Perm			0.00			0.02						c0.04
v/c Ratio	0.77	0.19	0.00	0.85	0.21	0.05	0.43	0.16		0.24	0.11	0.24
Uniform Delay, d1	28.8	14.8	13.9	22.6	8.3	7.6	28.2	20.3		29.3	21.3	21.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	49.7	0.4	0.0	16.6	0.3	0.1	2.3	0.2		5.8	0.2	0.5
Delay (s)	78.5	15.2	13.9	39.2	8.6	7.7	30.5	20.5		35.1	21.4	22.3
Level of Service	E	B	B	D	A	A	C	C		D	C	C
Approach Delay (s)		25.2			21.3			23.2			22.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	59.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	301	253	415	192	154	329
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	327	275	451	209	167	358

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1
Volume Total (vph)	327	275	451	209	525
Volume Left (vph)	327	0	0	0	167
Volume Right (vph)	0	275	0	209	0
Hadj (s)	0.23	-0.57	0.03	-0.67	0.10
Departure Headway (s)	7.1	3.2	6.7	6.0	6.4
Degree Utilization, x	0.65	0.24	0.84	0.35	0.93
Capacity (veh/h)	493	1112	525	587	555
Control Delay (s)	22.1	7.2	35.1	11.0	47.5
Approach Delay (s)	15.3		27.5		47.5
Approach LOS	C		D		E

Intersection Summary			
Delay	29.3		
HCM Level of Service	D		
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	5085	5085	1583
Volume (vph)	158	304	156	892	964	232
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	330	170	970	1048	252
RTOR Reduction (vph)	0	240	0	0	0	146
Lane Group Flow (vph)	172	90	170	970	1048	106
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	10.0	10.0	4.9	28.5	19.6	19.6
Effective Green, g (s)	10.0	10.0	4.9	28.5	19.6	19.6
Actuated g/C Ratio	0.22	0.22	0.11	0.61	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	381	340	187	3117	2143	667
v/s Ratio Prot	c0.10		c0.10	0.19	c0.21	
v/s Ratio Perm		0.06				0.07
v/c Ratio	0.45	0.26	0.91	0.31	0.49	0.16
Uniform Delay, d1	15.9	15.2	20.6	4.3	9.8	8.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.4	40.6	0.3	0.8	0.5
Delay (s)	16.7	15.6	61.2	4.6	10.6	8.9
Level of Service	B	B	E	A	B	A
Approach Delay (s)	16.0			13.0	10.3	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	46.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	61	260	577	469	304	110	798	1065	973	180	1090	231
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	283	627	510	330	120	867	1158	1058	196	1185	251
RTOR Reduction (vph)	0	0	358	0	0	87	0	0	121	0	0	120
Lane Group Flow (vph)	66	283	269	510	330	33	867	1158	937	196	1185	131
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	20.8	20.8	16.0	32.8	32.8	32.9	62.0	62.0	6.0	35.1	35.1
Effective Green, g (s)	4.0	20.8	20.8	16.0	32.8	32.8	32.9	62.0	62.0	6.0	35.1	35.1
Actuated g/C Ratio	0.03	0.17	0.17	0.13	0.27	0.27	0.27	0.51	0.51	0.05	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	609	273	455	961	430	935	2610	812	171	1478	460
v/s Ratio Prot	0.02	0.08		c0.15	0.09		c0.25	0.23		0.06	0.23	
v/s Ratio Perm			c0.17			0.02			c0.59			0.08
v/c Ratio	0.58	0.46	0.98	1.12	0.34	0.08	0.93	0.44	1.15	1.15	0.80	0.29
Uniform Delay, d1	57.6	45.0	49.8	52.4	35.3	32.7	42.8	18.5	29.4	57.4	39.6	33.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.0	0.6	49.6	79.5	0.2	0.1	14.8	0.5	83.3	113.6	4.7	1.6
Delay (s)	64.5	45.6	99.4	131.9	35.6	32.8	57.5	19.1	112.7	171.0	44.3	34.7
Level of Service	E	D	F	F	D	C	E	B	F	F	D	C
Approach Delay (s)		81.5			86.4			62.0			58.0	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM Average Control Delay	67.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	138	633	641	299	443	17	202	32	84	111	160	244
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	150	688	697	325	482	18	220	35	91	121	174	265
RTOR Reduction (vph)	0	0	343	0	0	12	0	0	70	0	0	222
Lane Group Flow (vph)	150	688	354	325	482	6	220	35	21	121	174	43
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4		8	8		2	2			6
Actuated Green, G (s)	9.7	22.1	22.1	17.1	29.5	29.5	13.6	18.9	18.9	8.2	13.5	13.5
Effective Green, g (s)	9.7	22.1	22.1	17.1	29.5	29.5	13.6	18.9	18.9	8.2	13.5	13.5
Actuated g/C Ratio	0.12	0.27	0.27	0.21	0.36	0.36	0.17	0.23	0.23	0.10	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	209	950	425	368	1269	567	292	428	364	176	306	260
v/s Ratio Prot	0.08	0.19		c0.18	0.14		c0.12	0.02		0.07	c0.09	
v/s Ratio Perm			c0.22			0.00			0.01			0.03
v/c Ratio	0.72	0.72	0.83	0.88	0.38	0.01	0.75	0.08	0.06	0.69	0.57	0.17
Uniform Delay, d1	35.0	27.3	28.4	31.6	19.6	17.0	32.8	24.9	24.7	35.8	31.7	29.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.2	2.8	13.1	21.3	0.2	0.0	10.5	0.1	0.1	10.6	2.4	0.3
Delay (s)	46.1	30.1	41.4	52.9	19.8	17.0	43.2	25.0	24.8	46.4	34.1	29.9
Level of Service	D	C	D	D	B	B	D	C	C	D	C	C
Approach Delay (s)		36.8			32.8			36.6			34.8	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	82.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1766		1770	1863	1583	1770	1828		1770	1863	1583
Flt Permitted	0.55	1.00		0.51	1.00	1.00	0.74	1.00		0.67	1.00	1.00
Satd. Flow (perm)	1027	1766		953	1863	1583	1374	1828		1247	1863	1583
Volume (vph)	48	210	110	19	297	101	158	110	16	103	28	176
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	228	120	21	323	110	172	120	17	112	30	191
RTOR Reduction (vph)	0	55	0	0	0	77	0	10	0	0	0	113
Lane Group Flow (vph)	52	293	0	21	323	33	172	127	0	112	30	78
Turn Type	Perm			Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)	8.2	8.2		8.2	8.2	8.2	11.2	11.2		11.2	11.2	11.2
Effective Green, g (s)	8.2	8.2		8.2	8.2	8.2	11.2	11.2		11.2	11.2	11.2
Actuated g/C Ratio	0.30	0.30		0.30	0.30	0.30	0.41	0.41		0.41	0.41	0.41
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	307	529		285	558	474	562	747		510	762	647
v/s Ratio Prot		0.17			c0.17			0.07			0.02	
v/s Ratio Perm	0.05			0.02		0.02	c0.13			0.09		0.05
v/c Ratio	0.17	0.55		0.07	0.58	0.07	0.31	0.17		0.22	0.04	0.12
Uniform Delay, d1	7.1	8.1		6.9	8.1	6.9	5.5	5.1		5.3	4.9	5.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	1.3		0.1	1.5	0.1	0.3	0.1		0.2	0.0	0.1
Delay (s)	7.3	9.3		7.0	9.6	6.9	5.8	5.3		5.5	4.9	5.1
Level of Service	A	A		A	A	A	A	A		A	A	A
Approach Delay (s)		9.1			8.8			5.5			5.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	27.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86		0.95	0.95		0.95	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.87		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.99		0.95	0.99	
Satd. Flow (prot)	1770	5085	1583	1770	6338		1681	1524		1681	1551	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97		0.95	0.87	
Satd. Flow (perm)	1770	5085	1583	1770	6338		1681	1478		1681	1369	
Volume (vph)	285	2560	475	178	2065	161	123	0	177	277	0	207
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	310	2783	516	193	2245	175	134	0	192	301	0	225
RTOR Reduction (vph)	0	0	166	0	10	0	0	150	0	0	74	0
Lane Group Flow (vph)	310	2783	350	193	2410	0	112	64	0	226	226	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	21.9	61.0	61.0	12.0	51.1		11.1	26.2		15.0	34.0	
Effective Green, g (s)	21.9	61.0	61.0	12.0	51.1		11.1	26.2		15.0	34.0	
Actuated g/C Ratio	0.18	0.51	0.51	0.10	0.43		0.09	0.22		0.13	0.29	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	325	2604	811	178	2719		157	329		212	414	
v/s Ratio Prot	c0.18	c0.55		c0.11	0.38		0.07	0.02		c0.13	c0.07	
v/s Ratio Perm			0.22					0.02			c0.09	
v/c Ratio	0.95	1.07	0.43	1.08	0.89		0.71	0.20		1.07	0.55	
Uniform Delay, d1	48.1	29.0	18.2	53.6	31.3		52.5	37.9		52.0	36.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	37.5	39.4	1.7	91.7	4.7		14.2	0.3		80.4	1.5	
Delay (s)	85.6	68.4	19.9	145.3	36.1		66.7	38.1		132.4	37.5	
Level of Service	F	E	B	F	D		E	D		F	D	
Approach Delay (s)		63.0			44.1			48.0			78.3	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM Average Control Delay	56.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	119.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	73	6	9	1	10	170	12	35	0	56	22	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	79	7	10	1	11	185	13	38	0	61	24	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	388	217	31	223	224	19	38			38		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	388	217	31	223	224	19	38			38		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	81	99	99	100	98	82	99			96		
cM capacity (veh/h)	428	648	1036	677	642	1054	1570			1570		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	79	7	10	1	11	185	13	19	19	0	61	38
Volume Left	79	0	0	1	0	0	13	0	0	0	61	0
Volume Right	0	0	10	0	0	185	0	0	0	0	0	14
cSH	428	648	1036	677	642	1054	1570	1700	1700	1700	1570	1700
Volume to Capacity	0.19	0.01	0.01	0.00	0.02	0.18	0.01	0.01	0.01	0.00	0.04	0.02
Queue Length 95th (ft)	17	1	1	0	1	16	1	0	0	0	3	0
Control Delay (s)	15.3	10.6	8.5	10.3	10.7	9.1	7.3	0.0	0.0	0.0	7.4	0.0
Lane LOS	C	B	A	B	B	A	A				A	
Approach Delay (s)	14.3			9.2			1.9				4.5	
Approach LOS	B			A								

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	27.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0				4.0		4.0
Lane Util. Factor		0.91			0.86	1.00				0.97		0.88
Frt		1.00			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085			6408	1583				3433		2787
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085			6408	1583				3433		2787
Volume (vph)	0	2159	0	0	2140	101	0	0	0	236	0	1038
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2347	0	0	2326	110	0	0	0	257	0	1128
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	2347	0	0	2326	110	0	0	0	257	0	1127
Turn Type						Free				custom		custom
Protected Phases		2			6							
Permitted Phases						Free				8		8
Actuated Green, G (s)		31.0			31.0	65.0				26.0		26.0
Effective Green, g (s)		31.0			31.0	65.0				26.0		26.0
Actuated g/C Ratio		0.48			0.48	1.00				0.40		0.40
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		2425			3056	1583				1373		1115
v/s Ratio Prot		c0.46			0.36							
v/s Ratio Perm						0.07				0.07		c0.40
v/c Ratio		0.97			0.76	0.07				0.19		1.01
Uniform Delay, d1		16.5			14.0	0.0				12.6		19.5
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		12.1			1.8	0.1				0.1		29.6
Delay (s)		28.7			15.8	0.1				12.7		49.1
Level of Service		C			B	A				B		D
Approach Delay (s)		28.7			15.1			0.0			42.3	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0		4.0			
Lane Util. Factor		0.91	1.00		0.91		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		5085	1583		5085		1770		1583			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		5085	1583		5085		1770		1583			
Volume (vph)	0	2425	391	0	1436	0	35	0	113	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2636	425	0	1561	0	38	0	123	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	28	0	0	0
Lane Group Flow (vph)	0	2636	425	0	1561	0	38	0	95	0	0	0
Turn Type			Free				custom		custom			
Protected Phases		2			6							
Permitted Phases			Free				4		4			
Actuated Green, G (s)		53.8	71.2		53.8		9.4		9.4			
Effective Green, g (s)		53.8	71.2		53.8		9.4		9.4			
Actuated g/C Ratio		0.76	1.00		0.76		0.13		0.13			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		3842	1583		3842		234		209			
v/s Ratio Prot		c0.52			0.31							
v/s Ratio Perm			0.27				0.02		c0.06			
v/c Ratio		0.69	0.27		0.41		0.16		0.46			
Uniform Delay, d1		4.4	0.0		3.1		27.4		28.5			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		1.0	0.4		0.3		0.3		1.6			
Delay (s)		5.4	0.4		3.4		27.7		30.1			
Level of Service		A	A		A		C		C			
Approach Delay (s)		4.7			3.4			29.6			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	5.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	3433	1583
Volume (vph)	429	203	540	717	295	483
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	466	221	587	779	321	525
RTOR Reduction (vph)	0	142	0	0	0	443
Lane Group Flow (vph)	466	79	587	779	321	82
Turn Type		Perm	Prot			Perm
Protected Phases	6		5	2	4	
Permitted Phases		6				4
Actuated Green, G (s)	32.0	32.0	32.0	68.0	14.0	14.0
Effective Green, g (s)	32.0	32.0	32.0	68.0	14.0	14.0
Actuated g/C Ratio	0.36	0.36	0.36	0.76	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	662	563	629	1408	534	246
v/s Ratio Prot	c0.25		c0.33	0.42	c0.09	
v/s Ratio Perm		0.05				0.05
v/c Ratio	0.70	0.14	0.93	0.55	0.60	0.33
Uniform Delay, d1	24.9	19.7	28.0	4.6	35.4	33.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	0.5	20.9	1.6	1.9	0.8
Delay (s)	31.1	20.2	48.9	6.2	37.3	34.6
Level of Service	C	C	D	A	D	C
Approach Delay (s)	27.6			24.5	35.6	
Approach LOS	C			C	D	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00		1.00		1.00	1.00	
Frt		0.99			1.00	0.85		0.99		1.00	0.86	
Flt Protected		0.98			1.00	1.00		0.96		0.95	1.00	
Satd. Flow (prot)		3431			1857	1583		1770		1770	1594	
Flt Permitted		0.62			0.88	1.00		0.34		0.74	1.00	
Satd. Flow (perm)		2183			1644	1583		633		1374	1594	
Volume (vph)	480	636	90	27	411	293	59	2	3	336	15	380
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	522	691	98	29	447	318	64	2	3	365	16	413
RTOR Reduction (vph)	0	8	0	0	0	109	0	2	0	0	298	0
Lane Group Flow (vph)	0	1303	0	0	476	209	0	67	0	365	131	0
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2		2	4			8		
Actuated Green, G (s)		49.7			49.7	49.7		22.3		22.3	22.3	
Effective Green, g (s)		49.7			49.7	49.7		22.3		22.3	22.3	
Actuated g/C Ratio		0.62			0.62	0.62		0.28		0.28	0.28	
Clearance Time (s)		4.0			4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		1356			1021	983		176		383	444	
v/s Ratio Prot											0.08	
v/s Ratio Perm		c0.60			0.29	0.13		0.11		c0.27		
v/c Ratio		1.05dl			0.47	0.21		0.38		0.95	0.30	
Uniform Delay, d1		14.2			8.1	6.6		23.3		28.3	22.7	
Progression Factor		1.00			0.47	0.00		1.00		1.00	1.00	
Incremental Delay, d2		16.8			1.3	0.4		1.4		33.8	0.4	
Delay (s)		31.0			5.2	0.4		24.6		62.1	23.0	
Level of Service		C			A	A		C		E	C	
Approach Delay (s)		31.0			3.3			24.6			41.0	
Approach LOS		C			A			C			D	

Intersection Summary			
HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	1863	1583
Flt Permitted	0.23	1.00	1.00	0.24	1.00	1.00	0.75	1.00	1.00	0.75	1.00	1.00
Satd. Flow (perm)	431	3539	1583	440	3539	1583	1390	3539	1583	1396	1863	1583
Volume (vph)	17	906	36	25	1075	41	166	11	18	105	16	47
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	985	39	27	1168	45	180	12	20	114	17	51
RTOR Reduction (vph)	0	0	20	0	0	23	0	0	14	0	0	27
Lane Group Flow (vph)	18	985	19	27	1168	22	180	12	6	114	17	24
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	17.3	17.3	17.3	17.3	17.3	17.3	9.9	9.9	9.9	9.9	9.9	9.9
Effective Green, g (s)	17.3	17.3	17.3	17.3	17.3	17.3	9.9	9.9	9.9	9.9	9.9	9.9
Actuated g/C Ratio	0.49	0.49	0.49	0.49	0.49	0.49	0.28	0.28	0.28	0.28	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	212	1739	778	216	1739	778	391	995	445	393	524	445
v/s Ratio Prot		0.28			c0.33			0.00			0.01	
v/s Ratio Perm	0.04		0.01	0.06		0.01	c0.13		0.00	0.08		0.02
v/c Ratio	0.08	0.57	0.02	0.12	0.67	0.03	0.46	0.01	0.01	0.29	0.03	0.05
Uniform Delay, d1	4.7	6.3	4.6	4.8	6.8	4.6	10.4	9.1	9.1	9.9	9.2	9.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.4	0.0	0.3	1.0	0.0	0.9	0.0	0.0	0.4	0.0	0.1
Delay (s)	4.9	6.7	4.6	5.1	7.8	4.6	11.3	9.1	9.1	10.3	9.2	9.3
Level of Service	A	A	A	A	A	A	B	A	A	B	A	A
Approach Delay (s)		6.6			7.7			11.0			9.9	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	35.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3493		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3493		1770	3539	1583	1770	3539	1583
Volume (vph)	205	896	67	131	708	67	60	655	47	44	774	137
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	974	73	142	770	73	65	712	51	48	841	149
RTOR Reduction (vph)	0	0	48	0	10	0	0	0	35	0	0	105
Lane Group Flow (vph)	223	974	25	142	833	0	65	712	16	48	841	44
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	6.3	22.7	22.7	5.1	21.5		2.9	20.3	20.3	2.2	19.6	19.6
Effective Green, g (s)	6.3	22.7	22.7	5.1	21.5		2.9	20.3	20.3	2.2	19.6	19.6
Actuated g/C Ratio	0.10	0.34	0.34	0.08	0.32		0.04	0.31	0.31	0.03	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	326	1212	542	136	1133		77	1084	485	59	1046	468
v/s Ratio Prot	0.06	c0.28		c0.08	0.24		c0.04	0.20		0.03	c0.24	
v/s Ratio Perm			0.02						0.01			0.03
v/c Ratio	0.68	0.80	0.05	1.04	0.74		0.84	0.66	0.03	0.81	0.80	0.09
Uniform Delay, d1	29.0	19.8	14.6	30.6	19.9		31.5	20.0	16.1	31.8	21.6	16.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	4.0	0.0	89.4	2.5		53.5	1.4	0.0	55.7	4.6	0.1
Delay (s)	34.9	23.7	14.6	120.0	22.4		84.9	21.4	16.1	87.5	26.1	17.0
Level of Service	C	C	B	F	C		F	C	B	F	C	B
Approach Delay (s)		25.2			36.5			26.1			27.7	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00		1.00	0.88	1.00	0.91		0.97	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583		1863	2787	1770	5085		3433	5085	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583		1863	2787	1770	5085		3433	5085	1583
Volume (vph)	248	32	8	0	16	947	9	1622	0	434	941	174
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	270	35	9	0	17	1029	10	1763	0	472	1023	189
RTOR Reduction (vph)	0	0	7	0	0	61	0	0	0	0	0	46
Lane Group Flow (vph)	270	35	2	0	17	968	10	1763	0	472	1023	143
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.6	15.9	15.9		1.3	13.4	0.7	33.8		12.1	45.2	55.8
Effective Green, g (s)	10.6	15.9	15.9		1.3	13.4	0.7	33.8		12.1	45.2	55.8
Actuated g/C Ratio	0.14	0.22	0.22		0.02	0.18	0.01	0.46		0.16	0.61	0.76
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	493	401	341		33	657	17	2329		563	3114	1283
v/s Ratio Prot	c0.08	0.02			0.01	c0.24	0.01	c0.35		0.14	0.20	0.02
v/s Ratio Perm			0.00			0.11						0.07
v/c Ratio	0.55	0.09	0.01		0.52	1.47	0.59	0.76		0.84	0.33	0.11
Uniform Delay, d1	29.4	23.1	22.7		35.9	30.2	36.4	16.6		29.9	6.9	2.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	0.0		12.9	221.0	42.8	1.4		10.5	0.1	0.0
Delay (s)	30.6	23.2	22.7		48.9	251.2	79.2	18.0		40.4	7.0	2.4
Level of Service	C	C	C		D	F	E	B		D	A	A
Approach Delay (s)		29.6			247.9			18.4			15.9	
Approach LOS		C			F			B			B	

Intersection Summary			
HCM Average Control Delay	68.1	HCM Level of Service	E
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	73.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.98			1.00			1.00	0.85		1.00	0.85
Flt Protected		1.00			1.00			0.99	1.00		1.00	1.00
Satd. Flow (prot)		1829			1854			1838	1583		1857	1583
Flt Permitted		0.98			0.99			0.94	1.00		0.99	1.00
Satd. Flow (perm)		1794			1834			1745	1583		1838	1583
Volume (vph)	19	246	33	3	98	3	14	38	4	1	15	4
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	267	36	3	107	3	15	41	4	1	16	4
RTOR Reduction (vph)	0	12	0	0	2	0	0	0	3	0	0	3
Lane Group Flow (vph)	0	312	0	0	111	0	0	56	1	0	17	1
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		9.7			9.7			8.7	8.7		8.7	8.7
Effective Green, g (s)		9.7			9.7			8.7	8.7		8.7	8.7
Actuated g/C Ratio		0.37			0.37			0.33	0.33		0.33	0.33
Clearance Time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		659			674			575	522		606	522
v/s Ratio Prot												
v/s Ratio Perm		c0.17			0.06			c0.03	0.00		0.01	0.00
v/c Ratio		0.47			0.16			0.10	0.00		0.03	0.00
Uniform Delay, d1		6.4			5.6			6.1	5.9		6.0	5.9
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		0.5			0.1			0.1	0.0		0.0	0.0
Delay (s)		6.9			5.7			6.2	5.9		6.0	5.9
Level of Service		A			A			A	A		A	A
Approach Delay (s)		6.9			5.7			6.2			6.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	26.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0				4.0		4.0
Lane Util. Factor		0.95	1.00		0.95	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3539	1583		3539	1583				1770		1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3539	1583		3539	1583				1770		1583
Volume (vph)	0	641	49	0	727	4	0	0	0	227	0	38
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	697	53	0	790	4	0	0	0	247	0	41
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	23
Lane Group Flow (vph)	0	697	53	0	790	4	0	0	0	247	0	18
Turn Type			Free			Free				custom		custom
Protected Phases		4			8							
Permitted Phases			Free			Free				6		6
Actuated Green, G (s)		14.7	40.0		14.7	40.0				17.3		17.3
Effective Green, g (s)		14.7	40.0		14.7	40.0				17.3		17.3
Actuated g/C Ratio		0.37	1.00		0.37	1.00				0.43		0.43
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		1301	1583		1301	1583				766		685
v/s Ratio Prot		0.20			c0.22							
v/s Ratio Perm			0.03			0.00				c0.14		0.01
v/c Ratio		0.54	0.03		0.61	0.00				0.32		0.03
Uniform Delay, d1		10.0	0.0		10.3	0.0				7.5		6.5
Progression Factor		1.00	1.00		1.20	1.00				1.00		1.00
Incremental Delay, d2		0.4	0.0		0.5	0.0				1.1		0.1
Delay (s)		10.4	0.0		12.8	0.0				8.6		6.6
Level of Service		B	A		B	A				A		A
Approach Delay (s)		9.7			12.7			0.0			8.3	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0		4.0			
Lane Util. Factor		0.95	1.00		0.95	1.00	1.00		1.00			
Frt		1.00	0.85		1.00	0.85	1.00		0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3539	1583		3539	1583	1770		1583			
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3539	1583		3539	1583	1770		1583			
Volume (vph)	0	577	27	0	924	483	585	0	125	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	627	29	0	1004	525	636	0	136	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	81	0	0	0
Lane Group Flow (vph)	0	627	29	0	1004	525	636	0	55	0	0	0
Turn Type			Free			Free	custom		custom			
Protected Phases		4			8							
Permitted Phases			Free			Free	2		2			
Actuated Green, G (s)		15.9	40.0		15.9	40.0	16.1		16.1			
Effective Green, g (s)		15.9	40.0		15.9	40.0	16.1		16.1			
Actuated g/C Ratio		0.40	1.00		0.40	1.00	0.40		0.40			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		1407	1583		1407	1583	712		637			
v/s Ratio Prot		0.18			c0.28							
v/s Ratio Perm			0.02			0.33	c0.36		0.03			
v/c Ratio		0.45	0.02		0.71	0.33	0.89		0.09			
Uniform Delay, d1		8.8	0.0		10.1	0.0	11.1		7.4			
Progression Factor		0.80	1.00		1.63	1.00	1.00		1.00			
Incremental Delay, d2		0.2	0.0		1.6	0.5	15.9		0.3			
Delay (s)		7.2	0.0		18.2	0.5	27.0		7.7			
Level of Service		A	A		B	A	C		A			
Approach Delay (s)		6.9			12.1			23.6			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Volume (vph)	11	606	35	356	840	364	583	423	3	17	400	521
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	659	38	387	913	396	634	460	3	18	435	566
RTOR Reduction (vph)	0	0	28	0	0	238	0	0	2	0	0	10
Lane Group Flow (vph)	12	659	10	387	913	158	634	460	1	18	435	556
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		1	6		5	2	3
Permitted Phases			4			8			6			2
Actuated Green, G (s)	0.8	20.4	20.4	12.4	32.0	32.0	16.4	29.6	29.6	1.6	14.8	27.2
Effective Green, g (s)	0.8	20.4	20.4	12.4	32.0	32.0	16.4	29.6	29.6	1.6	14.8	27.2
Actuated g/C Ratio	0.01	0.26	0.26	0.16	0.40	0.40	0.20	0.37	0.37	0.02	0.18	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	18	902	404	532	1416	633	704	1309	586	35	655	617
v/s Ratio Prot	0.01	c0.19		0.11	0.26		c0.18	0.13		0.01	0.12	c0.14
v/s Ratio Perm			0.01			0.10			0.00			0.21
v/c Ratio	0.67	0.73	0.02	0.73	0.64	0.25	0.90	0.35	0.00	0.51	0.66	0.90
Uniform Delay, d1	39.5	27.3	22.3	32.2	19.4	16.0	31.0	18.2	15.9	38.8	30.3	25.1
Progression Factor	0.99	0.76	0.93	1.00	1.00	1.00	0.97	1.04	1.02	1.00	1.00	1.00
Incremental Delay, d2	62.7	2.9	0.0	4.9	1.0	0.2	6.4	0.3	0.0	12.2	5.3	16.4
Delay (s)	101.7	23.5	20.9	37.1	20.4	16.2	36.5	19.3	16.3	51.0	35.5	41.5
Level of Service	F	C	C	D	C	B	D	B	B	D	D	D
Approach Delay (s)		24.7			23.2			29.2			39.1	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	92	1279	133	111	1258	67	195	260	92	20	758	130
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	1390	145	121	1367	73	212	283	100	22	824	141
RTOR Reduction (vph)	0	0	100	0	0	50	0	0	64	0	0	102
Lane Group Flow (vph)	100	1390	45	121	1367	23	212	283	36	22	824	39
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	18.6	18.6	3.2	18.6	18.6	5.4	21.4	21.4	0.8	16.8	16.8
Effective Green, g (s)	3.2	18.6	18.6	3.2	18.6	18.6	5.4	21.4	21.4	0.8	16.8	16.8
Actuated g/C Ratio	0.05	0.31	0.31	0.05	0.31	0.31	0.09	0.36	0.36	0.01	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1576	491	183	1576	491	309	1262	565	46	991	443
v/s Ratio Prot	0.03	c0.27		c0.04	0.27		c0.06	0.08		0.01	c0.23	
v/s Ratio Perm			0.03			0.01			0.02			0.02
v/c Ratio	0.55	0.88	0.09	0.66	0.87	0.05	0.69	0.22	0.06	0.48	0.83	0.09
Uniform Delay, d1	27.7	19.7	14.7	27.9	19.5	14.5	26.5	13.5	12.7	29.4	20.3	16.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	6.2	0.1	8.6	5.3	0.0	6.2	0.4	0.2	7.6	8.1	0.4
Delay (s)	31.0	25.8	14.8	36.5	24.9	14.5	32.7	13.9	12.9	37.0	28.4	16.3
Level of Service	C	C	B	D	C	B	C	B	B	D	C	B
Approach Delay (s)		25.2			25.3			20.4			26.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	131	1748	103	141	1179	39	191	476	185	224	431	565
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	1900	112	153	1282	42	208	517	201	243	468	614
RTOR Reduction (vph)	0	0	49	0	0	29	0	0	114	0	0	5
Lane Group Flow (vph)	142	1900	63	153	1282	13	208	517	87	243	468	609
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.1	31.0	31.0	5.0	22.9	22.9	6.0	17.0	17.0	6.0	17.0	30.1
Effective Green, g (s)	13.1	31.0	31.0	5.0	22.9	22.9	6.0	17.0	17.0	6.0	17.0	30.1
Actuated g/C Ratio	0.17	0.41	0.41	0.07	0.31	0.31	0.08	0.23	0.23	0.08	0.23	0.40
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	600	2102	654	229	1553	483	275	802	359	275	802	720
v/s Ratio Prot	0.04	c0.37		0.04	0.25		0.06	0.15		c0.07	0.13	c0.15
v/s Ratio Perm			0.04			0.01			0.06			0.24
v/c Ratio	0.24	0.90	0.10	0.67	0.83	0.03	0.76	0.64	0.24	0.88	0.58	0.85
Uniform Delay, d1	26.6	20.6	13.4	34.2	24.2	18.2	33.8	26.3	23.7	34.2	25.8	20.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	5.9	0.1	7.2	3.7	0.0	11.2	4.0	1.6	26.6	3.1	9.0
Delay (s)	26.9	26.6	13.5	41.4	27.9	18.3	45.0	30.2	25.3	60.8	28.9	29.3
Level of Service	C	C	B	D	C	B	D	C	C	E	C	C
Approach Delay (s)		25.9			29.0			32.5			35.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	156	1607	136	101	1392	55	184	545	207	159	515	27
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	1747	148	110	1513	60	200	592	225	173	560	29
RTOR Reduction (vph)	0	0	89	0	0	36	0	0	112	0	0	22
Lane Group Flow (vph)	170	1747	59	110	1513	24	200	592	113	173	560	7
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	25.3	25.3	3.2	23.5	23.5	5.3	15.2	15.2	5.3	15.2	15.2
Effective Green, g (s)	5.0	25.3	25.3	3.2	23.5	23.5	5.3	15.2	15.2	5.3	15.2	15.2
Actuated g/C Ratio	0.08	0.39	0.39	0.05	0.36	0.36	0.08	0.23	0.23	0.08	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	264	1979	616	169	1838	572	280	828	370	280	828	370
v/s Ratio Prot	c0.05	c0.34		0.03	0.30		c0.06	c0.17		0.05	0.16	
v/s Ratio Perm			0.04			0.02			0.07			0.00
v/c Ratio	0.64	0.88	0.10	0.65	0.82	0.04	0.71	0.71	0.31	0.62	0.68	0.02
Uniform Delay, d1	29.1	18.5	12.6	30.4	18.9	13.5	29.1	22.9	20.5	28.9	22.7	19.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3	5.1	0.1	8.7	3.1	0.0	8.4	5.2	2.1	4.0	4.4	0.1
Delay (s)	34.4	23.5	12.7	39.0	22.0	13.5	37.5	28.1	22.7	32.9	27.1	19.3
Level of Service	C	C	B	D	C	B	D	C	C	C	C	B
Approach Delay (s)		23.6			22.8			28.8			28.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95			0.95	0.95	0.97	0.95	
Frt		1.00	0.85	1.00	1.00			0.87	0.85	1.00	0.97	
Flt Protected		1.00	1.00	0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539			1528	1504	3433	3432	
Flt Permitted		1.00	1.00	0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539			1528	1504	3433	3432	
Volume (vph)	0	1388	31	120	634	0	30	0	426	202	376	95
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1509	34	130	689	0	33	0	463	220	409	103
RTOR Reduction (vph)	0	0	8	0	0	0	0	157	157	0	24	0
Lane Group Flow (vph)	0	1509	26	130	689	0	0	100	82	220	488	0
Turn Type			Perm	Prot			Split		Perm	Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)		35.1	35.1	6.0	45.1			10.4	10.4	16.0	16.0	
Effective Green, g (s)		35.1	35.1	6.0	45.1			10.4	10.4	16.0	16.0	
Actuated g/C Ratio		0.42	0.42	0.07	0.54			0.12	0.12	0.19	0.19	
Clearance Time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		1488	665	127	1911			190	187	658	658	
v/s Ratio Prot		c0.43		c0.07	0.19			c0.07		0.06	c0.14	
v/s Ratio Perm			0.02						0.05			
v/c Ratio		1.01	0.04	1.02	0.36			0.53	0.44	0.33	0.74	
Uniform Delay, d1		24.2	14.3	38.8	11.0			34.2	33.9	29.2	31.8	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		26.9	0.0	86.3	0.1			2.6	1.7	1.4	7.4	
Delay (s)		51.1	14.3	125.0	11.1			36.9	35.5	30.5	39.2	
Level of Service		D	B	F	B			D	D	C	D	
Approach Delay (s)		50.3			29.2			36.2			36.6	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	40.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.92	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.98	1.00	0.95		1.00
Satd. Flow (prot)	3433	3539			3539	1583	1681	1524	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.98	1.00	0.58		1.00
Satd. Flow (perm)	3433	3539			3539	1583	1681	1524	1504	2111		1583
Volume (vph)	359	1119	0	0	614	256	311	6	377	198	0	235
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	390	1216	0	0	667	278	338	7	410	215	0	255
RTOR Reduction (vph)	0	0	0	0	0	168	0	57	95	0	0	201
Lane Group Flow (vph)	390	1216	0	0	667	110	226	204	173	215	0	54
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	10.0	29.9			15.9	15.9	17.0	17.0	17.0	16.0		16.0
Effective Green, g (s)	10.0	29.9			15.9	15.9	17.0	17.0	17.0	16.0		16.0
Actuated g/C Ratio	0.13	0.40			0.21	0.21	0.23	0.23	0.23	0.21		0.21
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	458	1413			751	336	382	346	341	451		338
v/s Ratio Prot	0.11	c0.34			0.19		c0.13	0.13				
v/s Ratio Perm						0.07			0.11	c0.10		0.03
v/c Ratio	0.85	0.86			0.89	0.33	0.59	0.59	0.51	0.48		0.16
Uniform Delay, d1	31.7	20.6			28.6	25.0	25.9	25.8	25.3	25.8		24.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	14.1	5.6			12.3	0.6	6.6	7.2	5.3	3.6		1.0
Delay (s)	45.9	26.2			41.0	25.6	32.4	33.0	30.6	29.4		25.0
Level of Service	D	C			D	C	C	C	C	C		C
Approach Delay (s)		31.0			36.4			32.0			27.0	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	32.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	74.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		0.97	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1799	1863	1583	3433	1583
Flt Permitted		0.78	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1453	1863	1583	3433	1583
Volume (vph)	83	34	14	249	1525	147
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	37	15	271	1658	160
RTOR Reduction (vph)	0	0	0	216	0	60
Lane Group Flow (vph)	0	127	15	55	1658	100
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)		9.5	9.5	9.5	29.5	29.5
Effective Green, g (s)		9.5	9.5	9.5	29.5	29.5
Actuated g/C Ratio		0.20	0.20	0.20	0.63	0.63
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		294	377	320	2155	994
v/s Ratio Prot			0.01			
v/s Ratio Perm		c0.09		0.03	c0.48	0.06
v/c Ratio		0.43	0.04	0.17	0.77	0.10
Uniform Delay, d1		16.4	15.1	15.5	6.3	3.5
Progression Factor		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.0	0.0	0.3	1.7	0.0
Delay (s)		17.4	15.1	15.8	8.0	3.5
Level of Service		B	B	B	A	A
Approach Delay (s)		17.4	15.7		7.6	
Approach LOS		B	B		A	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	47.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Volume (vph)	45	1243	330	0	0	1701
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	1351	359	0	0	1849
RTOR Reduction (vph)	0	865	0	0	0	0
Lane Group Flow (vph)	49	486	359	0	0	1849
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	21.0	21.0	91.0			91.0
Effective Green, g (s)	21.0	21.0	91.0			91.0
Actuated g/C Ratio	0.18	0.18	0.76			0.76
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	310	488	1413			1413
v/s Ratio Prot	0.03		0.19			c0.99
v/s Ratio Perm		c0.17				
v/c Ratio	0.16	1.00	0.25			1.31
Uniform Delay, d1	42.0	49.5	4.3			14.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.2	39.6	0.1			144.1
Delay (s)	42.2	89.1	4.4			158.6
Level of Service	D	F	A			F
Approach Delay (s)	87.4		4.4			158.6
Approach LOS	F		A			F

Intersection Summary			
HCM Average Control Delay	115.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	99.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3193		3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3193		3433	5085	1583	1770	3539	1583
Volume (vph)	434	240	109	427	240	452	66	1129	346	390	1155	386
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	472	261	118	464	261	491	72	1227	376	424	1255	420
RTOR Reduction (vph)	0	0	85	0	306	0	0	0	140	0	0	220
Lane Group Flow (vph)	472	261	33	464	446	0	72	1227	236	424	1255	200
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.0	15.0	15.0	13.0	15.0		3.2	23.4	23.4	22.6	42.8	42.8
Effective Green, g (s)	13.0	15.0	15.0	13.0	15.0		3.2	23.4	23.4	22.6	42.8	42.8
Actuated g/C Ratio	0.14	0.17	0.17	0.14	0.17		0.04	0.26	0.26	0.25	0.48	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	496	590	264	496	532		122	1322	412	444	1683	753
v/s Ratio Prot	c0.14	0.07		0.14	c0.14		0.02	c0.24		c0.24	0.35	
v/s Ratio Perm			0.02						0.15			0.13
v/c Ratio	0.95	0.44	0.12	0.94	0.84		0.59	0.93	0.57	0.95	0.75	0.27
Uniform Delay, d1	38.2	33.7	31.9	38.1	36.3		42.8	32.5	29.0	33.2	19.2	14.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.5	0.5	0.2	25.1	11.1		7.4	12.6	5.7	31.2	3.1	0.9
Delay (s)	66.6	34.3	32.1	63.2	47.4		50.2	45.1	34.7	64.4	22.2	15.0
Level of Service	E	C	C	E	D		D	D	C	E	C	B
Approach Delay (s)		51.9			53.4			43.0			29.3	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	41.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

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                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Weber/Herndon
********************************************************************************
Average Delay (sec/veh):      0.9       Worst Case Level Of Service: B[ 12.5]
********************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  1    0  0  3  0  1    1  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0   168     0    0     0     0  938   295    22 1073     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0   168     0    0     0     0  938   295    22 1073     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0   168     0    0     0     0  938   295    22 1073     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0   183     0    0     0     0 1020   321    24 1166     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0   183     0    0     0     0 1020   321    24 1166     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   340  xxxx xxxx   389  xxxx xxxx xxxxx  1340 xxxx xxxxx
Potent Cap.: xxxx xxxx   662  xxxx xxxx   616  xxxx xxxx xxxxx   521 xxxx xxxxx
Move Cap.:   xxxx xxxx   662  xxxx xxxx   616  xxxx xxxx xxxxx   521 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.28  xxxx xxxx  0.00  xxxx xxxx  xxxx  0.05 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   1.1  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx  12.5 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  12.2 xxxx xxxxx
LOS by Move:   *    *     B     *    *     *     *    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      12.5           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        B                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	336	485	244	50	336	137	533	261	123	170	354	551
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	365	527	265	54	365	149	579	284	134	185	385	599
RTOR Reduction (vph)	0	0	68	0	0	125	0	0	84	0	0	41
Lane Group Flow (vph)	365	527	197	54	365	24	579	284	50	185	385	558
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	12.4	22.7	44.2	2.4	12.7	12.7	21.5	29.7	29.7	9.2	17.4	29.8
Effective Green, g (s)	12.4	22.7	44.2	2.4	12.7	12.7	21.5	29.7	29.7	9.2	17.4	29.8
Actuated g/C Ratio	0.16	0.28	0.55	0.03	0.16	0.16	0.27	0.37	0.37	0.12	0.22	0.37
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	532	1443	954	103	807	251	923	692	588	395	405	669
v/s Ratio Prot	0.11	0.10	0.06	0.02	c0.07		c0.17	0.15		0.05	c0.21	c0.13
v/s Ratio Perm			0.07			0.01			0.03			0.22
v/c Ratio	0.69	0.37	0.21	0.52	0.45	0.09	0.63	0.41	0.08	0.47	0.95	0.83
Uniform Delay, d1	32.0	22.9	9.0	38.2	30.5	28.7	25.7	18.7	16.3	33.1	30.9	22.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	0.2	0.1	4.7	0.4	0.2	3.2	1.8	0.3	0.9	32.2	8.8
Delay (s)	35.6	23.1	9.1	43.0	30.9	28.9	28.9	20.5	16.6	34.0	63.0	31.7
Level of Service	D	C	A	D	C	C	C	C	B	C	E	C
Approach Delay (s)		23.8			31.5			24.9			42.4	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1815		3433	1851	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1815		3433	1851	
Volume (vph)	33	604	109	136	500	7	34	331	68	12	257	11
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	657	118	148	543	8	37	360	74	13	279	12
RTOR Reduction (vph)	0	0	89	0	0	6	0	10	0	0	2	0
Lane Group Flow (vph)	36	657	29	148	543	2	37	424	0	13	289	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	1.6	14.9	14.9	3.2	16.5	16.5	1.7	25.1		0.8	24.2	
Effective Green, g (s)	1.6	14.9	14.9	3.2	16.5	16.5	1.7	25.1		0.8	24.2	
Actuated g/C Ratio	0.03	0.25	0.25	0.05	0.28	0.28	0.03	0.42		0.01	0.40	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	47	1263	393	183	1398	435	97	759		46	747	
v/s Ratio Prot	0.02	c0.13		c0.04	0.11		c0.01	c0.23		0.00	0.16	
v/s Ratio Perm			0.02			0.00						
v/c Ratio	0.77	0.52	0.07	0.81	0.39	0.01	0.38	0.56		0.28	0.39	
Uniform Delay, d1	29.0	19.5	17.3	28.1	17.7	15.8	28.6	13.2		29.3	12.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	52.3	0.4	0.1	22.4	0.2	0.0	2.5	3.0		3.4	1.5	
Delay (s)	81.3	19.9	17.4	50.5	17.8	15.8	31.1	16.2		32.7	14.2	
Level of Service	F	B	B	D	B	B	C	B		C	B	
Approach Delay (s)		22.2			24.7			17.4			15.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.91		0.97	0.91		0.76
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5085		3433	5085		3610
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5085		3433	5085		3610
Volume (vph)	1267	0	1351	613	0	1060
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1377	0	1468	666	0	1152
RTOR Reduction (vph)	0	0	0	0	0	4
Lane Group Flow (vph)	1377	0	1468	666	0	1148
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	16.8		25.2	50.0		25.2
Effective Green, g (s)	16.8		25.2	50.0		25.2
Actuated g/C Ratio	0.34		0.50	1.00		0.50
Clearance Time (s)	4.0		4.0	3.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	1709		1730	5085		1819
v/s Ratio Prot	c0.27		c0.43	0.13		0.32
v/s Ratio Perm						
v/c Ratio	0.81		0.85	0.13		0.63
Uniform Delay, d1	15.1		10.7	0.0		9.0
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	2.9		4.1	0.0		0.7
Delay (s)	18.0		14.8	0.0		9.7
Level of Service	B		B	A		A
Approach Delay (s)	18.0			10.2	9.7	
Approach LOS	B			B	A	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1766		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1766		3433	1863	1583
Volume (vph)	8	2069	250	276	1732	132	199	452	241	180	540	33
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	2249	272	300	1883	143	216	491	262	196	587	36
RTOR Reduction (vph)	0	0	104	0	0	28	0	17	0	0	0	14
Lane Group Flow (vph)	9	2249	168	300	1883	115	216	737	0	196	587	22
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	48.2	48.2	9.0	56.4	56.4	8.0	40.8		6.0	38.8	38.8
Effective Green, g (s)	0.8	48.2	48.2	9.0	56.4	56.4	8.0	40.8		6.0	38.8	38.8
Actuated g/C Ratio	0.01	0.40	0.40	0.08	0.47	0.47	0.07	0.34		0.05	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	23	2042	636	257	2390	744	229	600		172	602	512
v/s Ratio Prot	0.00	c0.44		c0.09	0.37		c0.06	c0.42		0.06	0.32	
v/s Ratio Perm			0.11			0.07						0.01
v/c Ratio	0.39	1.10	0.26	1.17	0.79	0.15	0.94	1.23		1.14	0.98	0.04
Uniform Delay, d1	59.4	35.9	24.0	55.5	26.8	18.2	55.8	39.6		57.0	40.1	27.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	10.7	53.7	0.2	109.0	1.8	0.1	43.6	116.6		111.1	31.0	0.2
Delay (s)	70.0	89.6	24.3	164.5	28.6	18.3	99.4	156.2		168.1	71.2	28.0
Level of Service	E	F	C	F	C	B	F	F		F	E	C
Approach Delay (s)		82.5			45.5			143.5			92.5	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	79.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	486	1883	128	134	1661	236	89	296	113	172	350	393
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	528	2047	139	146	1805	257	97	322	123	187	380	427
RTOR Reduction (vph)	0	0	48	0	0	41	0	0	99	0	0	204
Lane Group Flow (vph)	528	2047	91	146	1805	216	97	322	24	187	380	223
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.8	43.6	43.6	6.0	33.8	40.9	3.2	17.3	17.3	7.1	21.2	21.2
Effective Green, g (s)	15.8	43.6	43.6	6.0	33.8	40.9	3.2	17.3	17.3	7.1	21.2	21.2
Actuated g/C Ratio	0.18	0.48	0.48	0.07	0.38	0.45	0.04	0.19	0.19	0.08	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	603	2463	767	229	1910	790	122	680	304	271	834	373
v/s Ratio Prot	c0.15	0.40		0.04	c0.35	0.02	0.03	0.09		c0.05	0.11	
v/s Ratio Perm			0.06			0.11			0.01			c0.14
v/c Ratio	0.88	0.83	0.12	0.64	0.95	0.27	0.80	0.47	0.08	0.69	0.46	0.60
Uniform Delay, d1	36.1	20.0	12.7	40.9	27.2	15.3	43.1	32.3	29.8	40.4	29.5	30.6
Progression Factor	1.00	1.00	1.00	0.75	1.71	2.19	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.4	2.5	0.1	3.9	7.6	0.1	29.0	2.4	0.5	7.4	1.8	6.9
Delay (s)	49.6	22.6	12.8	34.6	54.2	33.6	72.1	34.7	30.3	47.7	31.3	37.5
Level of Service	D	C	B	C	D	C	E	C	C	D	C	D
Approach Delay (s)		27.3			50.5			40.4			37.0	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	37.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Volume (vph)	2	2163	1	4	2033	60	2	0	4	60	1	16
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	2351	1	4	2210	65	2	0	4	65	1	17
RTOR Reduction (vph)	0	0	0	0	0	15	0	3	0	0	0	15
Lane Group Flow (vph)	2	2351	1	4	2210	50	2	1	0	65	1	2
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	1.2	54.1	54.1	1.2	54.1	54.1	5.6	14.7		4.0	13.1	13.1
Effective Green, g (s)	1.2	54.1	54.1	1.2	54.1	54.1	5.6	14.7		4.0	13.1	13.1
Actuated g/C Ratio	0.01	0.60	0.60	0.01	0.60	0.60	0.06	0.16		0.04	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	46	3057	952	46	3057	952	214	491		153	271	230
v/s Ratio Prot	0.00	c0.46		c0.00	0.43		0.00	0.00		c0.02	0.00	
v/s Ratio Perm			0.00			0.03						c0.00
v/c Ratio	0.04	0.77	0.00	0.09	0.72	0.05	0.01	0.00		0.42	0.00	0.01
Uniform Delay, d1	43.8	13.3	7.2	43.9	12.7	7.4	39.6	31.5		41.9	32.9	32.9
Progression Factor	0.70	1.94	1.38	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.7	0.0	0.8	0.9	0.0	0.0	0.0		1.9	0.0	0.0
Delay (s)	30.8	26.6	9.9	44.7	13.5	7.4	39.6	31.5		43.8	32.9	32.9
Level of Service	C	C	A	D	B	A	D	C		D	C	C
Approach Delay (s)		26.6			13.4			34.2			41.4	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	3433	1863	1583	3433	1863	1583
Volume (vph)	110	1934	376	304	1950	74	367	148	293	32	135	103
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	2102	409	330	2120	80	399	161	318	35	147	112
RTOR Reduction (vph)	0	0	122	0	0	17	0	0	219	0	0	95
Lane Group Flow (vph)	120	2102	287	330	2120	63	399	161	99	35	147	17
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.7	44.0	44.0	20.0	54.3	54.3	13.0	27.6	27.6	2.4	17.0	17.0
Effective Green, g (s)	9.7	44.0	44.0	20.0	54.3	54.3	13.0	27.6	27.6	2.4	17.0	17.0
Actuated g/C Ratio	0.09	0.40	0.40	0.18	0.49	0.49	0.12	0.25	0.25	0.02	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	156	2034	633	322	2510	781	406	467	397	75	288	245
v/s Ratio Prot	0.07	c0.41		c0.19	0.42		c0.12	0.09		0.01	c0.08	
v/s Ratio Perm			0.18			0.04			0.06			0.01
v/c Ratio	0.77	1.03	0.45	1.02	0.84	0.08	0.98	0.34	0.25	0.47	0.51	0.07
Uniform Delay, d1	49.1	33.0	24.2	45.0	24.2	14.7	48.4	33.8	32.9	53.2	42.7	39.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.1	29.2	0.5	56.7	2.8	0.0	39.9	2.0	1.5	4.5	6.3	0.6
Delay (s)	69.2	62.2	24.7	101.7	27.0	14.7	88.2	35.8	34.4	57.7	49.0	40.3
Level of Service	E	E	C	F	C	B	F	D	C	E	D	D
Approach Delay (s)		56.7			36.3			59.1			46.7	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM Average Control Delay	48.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	367	1883	189	264	1906	334	220	281	255	203	277	527
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	399	2047	205	287	2072	363	239	305	277	221	301	573
RTOR Reduction (vph)	0	0	29	0	0	52	0	0	161	0	0	1
Lane Group Flow (vph)	399	2047	176	287	2072	311	239	305	116	221	301	572
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	22.0	50.2	50.2	10.8	39.0	39.0	7.0	16.0	16.0	7.0	16.0	38.0
Effective Green, g (s)	22.0	50.2	50.2	10.8	39.0	39.0	7.0	16.0	16.0	7.0	16.0	38.0
Actuated g/C Ratio	0.22	0.50	0.50	0.11	0.39	0.39	0.07	0.16	0.16	0.07	0.16	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	389	2553	795	371	1983	617	240	566	253	240	566	665
v/s Ratio Prot	c0.23	0.40		0.08	c0.41		c0.07	0.09		0.06	0.09	c0.19
v/s Ratio Perm			0.11			0.20			0.07			0.17
v/c Ratio	1.03	0.80	0.22	0.77	1.04	0.50	1.00	0.54	0.46	0.92	0.53	0.86
Uniform Delay, d1	39.0	20.8	13.9	43.4	30.5	23.2	46.5	38.6	38.1	46.2	38.6	28.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.73	0.66	1.19	1.00	1.00	1.00
Incremental Delay, d2	52.4	1.9	0.1	9.7	33.1	0.7	42.5	2.1	3.4	37.2	3.6	10.8
Delay (s)	91.4	22.7	14.1	53.1	63.6	23.8	76.4	27.5	48.5	83.4	42.1	39.3
Level of Service	F	C	B	D	E	C	E	C	D	F	D	D
Approach Delay (s)		32.3			57.2			48.8			49.0	
Approach LOS		C			E			D			D	

Intersection Summary			
HCM Average Control Delay	46.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	91	2000	99	238	2385	187	83	309	101	160	298	148
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	2174	108	259	2592	203	90	336	110	174	324	161
RTOR Reduction (vph)	0	0	48	0	0	54	0	0	87	0	0	77
Lane Group Flow (vph)	99	2174	60	259	2592	149	90	336	23	174	324	84
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	43.8	43.8	9.0	49.6	49.6	4.0	16.2	16.2	5.0	17.2	17.2
Effective Green, g (s)	3.2	43.8	43.8	9.0	49.6	49.6	4.0	16.2	16.2	5.0	17.2	17.2
Actuated g/C Ratio	0.04	0.49	0.49	0.10	0.55	0.55	0.04	0.18	0.18	0.06	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	122	2475	770	343	2802	872	153	637	285	191	676	303
v/s Ratio Prot	0.03	0.43		c0.08	c0.51		0.03	c0.09		c0.05	0.09	
v/s Ratio Perm			0.04			0.09			0.01			0.05
v/c Ratio	0.81	0.88	0.08	0.76	0.93	0.17	0.59	0.53	0.08	0.91	0.48	0.28
Uniform Delay, d1	43.1	20.7	12.3	39.4	18.5	10.0	42.2	33.4	30.7	42.3	32.4	31.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	32.1	3.9	0.0	9.1	5.9	0.1	5.7	3.1	0.6	40.9	2.4	2.3
Delay (s)	75.2	24.6	12.4	48.5	24.4	10.1	47.9	36.5	31.3	83.1	34.8	33.4
Level of Service	E	C	B	D	C	B	D	D	C	F	C	C
Approach Delay (s)		26.1			25.5			37.4			47.2	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	28.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	929	1388	103	83	1893	160	249	1145	38	255	1308	815
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1010	1509	112	90	2058	174	271	1245	41	277	1422	886
RTOR Reduction (vph)	0	0	52	0	0	47	0	0	31	0	0	1
Lane Group Flow (vph)	1010	1509	60	90	2058	127	271	1245	10	277	1422	885
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	27.0	59.2	59.2	6.8	39.0	39.0	8.0	29.0	29.0	9.0	30.0	57.0
Effective Green, g (s)	27.0	59.2	59.2	6.8	39.0	39.0	8.0	29.0	29.0	9.0	30.0	57.0
Actuated g/C Ratio	0.22	0.49	0.49	0.06	0.32	0.32	0.07	0.24	0.24	0.08	0.25	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	772	2509	781	195	1653	514	229	1229	383	257	1271	805
v/s Ratio Prot	c0.29	0.30		0.03	c0.40		0.08	0.24		c0.08	0.28	c0.25
v/s Ratio Perm			0.04			0.08			0.01			0.31
v/c Ratio	1.31	0.60	0.08	0.46	1.25	0.25	1.18	1.01	0.03	1.08	1.12	1.10
Uniform Delay, d1	46.5	21.9	16.0	54.8	40.5	29.7	56.0	45.5	34.7	55.5	45.0	31.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	148.0	0.4	0.0	1.7	115.5	0.3	118.0	28.9	0.1	78.4	64.5	62.7
Delay (s)	194.5	22.3	16.0	56.6	156.0	30.0	174.0	74.4	34.8	133.9	109.5	94.2
Level of Service	F	C	B	E	F	C	F	E	C	F	F	F
Approach Delay (s)		88.1			142.7			90.7			106.9	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	107.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	108.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	162	1498	360	319	1580	333	133	838	148	211	915	356
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	176	1628	391	347	1717	362	145	911	161	229	995	387
RTOR Reduction (vph)	0	0	127	0	0	125	0	0	122	0	0	139
Lane Group Flow (vph)	176	1628	264	347	1717	237	145	911	39	229	995	248
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	26.0	26.0	9.0	29.0	29.0	5.0	18.0	18.0	6.0	19.0	19.0
Effective Green, g (s)	6.0	26.0	26.0	9.0	29.0	29.0	5.0	18.0	18.0	6.0	19.0	19.0
Actuated g/C Ratio	0.08	0.35	0.35	0.12	0.39	0.39	0.07	0.24	0.24	0.08	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	275	1763	549	412	1966	612	229	1220	380	275	1288	401
v/s Ratio Prot	0.05	0.32		c0.10	c0.34		0.04	0.18		c0.07	c0.20	
v/s Ratio Perm			0.17			0.15			0.02			0.16
v/c Ratio	0.64	0.92	0.48	0.84	0.87	0.39	0.63	0.75	0.10	0.83	0.77	0.62
Uniform Delay, d1	33.5	23.5	19.2	32.3	21.3	16.6	34.1	26.4	22.2	34.0	26.0	24.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	8.6	0.7	14.4	4.6	0.4	5.6	4.2	0.5	19.0	4.5	7.0
Delay (s)	38.5	32.1	19.9	46.7	25.9	17.0	39.7	30.6	22.7	53.0	30.5	31.8
Level of Service	D	C	B	D	C	B	D	C	C	D	C	C
Approach Delay (s)		30.5			27.6			30.6			34.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	1863	1583			1770	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	1863	1583			1770	1583
Volume (vph)	1056	541	0	0	288	159
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1148	588	0	0	313	173
RTOR Reduction (vph)	0	206	0	0	0	86
Lane Group Flow (vph)	1148	382	0	0	313	87
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	52.0	52.0			20.0	20.0
Effective Green, g (s)	52.0	52.0			20.0	20.0
Actuated g/C Ratio	0.65	0.65			0.25	0.25
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1211	1029			443	396
v/s Ratio Prot	c0.62				c0.18	
v/s Ratio Perm		0.24				0.05
v/c Ratio	0.95	0.37			0.71	0.22
Uniform Delay, d1	12.8	6.5			27.3	23.8
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	14.9	0.2			9.1	1.3
Delay (s)	27.7	6.7			36.5	25.1
Level of Service	C	A			D	C
Approach Delay (s)	20.6			0.0	32.4	
Approach LOS	C			A	C	

Intersection Summary			
HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	0.97	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.91		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583		1770	3539	1583	3433	1690		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583		1770	3539	1583	3433	1690		1770	1863
Volume (vph)	453	570	10	10	71	612	162	456	171	276	1	178
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	492	620	11	11	77	665	176	496	186	300	1	193
RTOR Reduction (vph)	0	0	6	0	0	0	108	0	42	0	0	0
Lane Group Flow (vph)	492	620	5	0	88	665	68	496	444	0	1	193
Turn Type	Prot		Perm	Prot	Prot		Perm	Prot			Prot	
Protected Phases	5	2		1	1	6		7	4		3	8
Permitted Phases			2				6					
Actuated Green, G (s)	38.2	51.0	51.0		9.1	21.9	21.9	21.6	42.7		1.2	22.3
Effective Green, g (s)	38.2	51.0	51.0		9.1	21.9	21.9	21.6	42.7		1.2	22.3
Actuated g/C Ratio	0.32	0.42	0.42		0.08	0.18	0.18	0.18	0.36		0.01	0.19
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	563	1504	673		134	646	289	618	601		18	346
v/s Ratio Prot	c0.28	0.18			0.05	c0.19		c0.14	c0.26		0.00	0.10
v/s Ratio Perm			0.00				0.04					
v/c Ratio	0.87	0.41	0.01		0.66	1.03	0.24	0.80	0.74		0.06	0.56
Uniform Delay, d1	38.6	24.1	19.9		53.9	49.0	41.9	47.2	33.8		58.8	44.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	14.1	0.8	0.0		11.0	43.1	1.9	7.4	4.7		1.3	1.9
Delay (s)	52.7	24.9	19.9		65.0	92.2	43.8	54.6	38.5		60.1	46.3
Level of Service	D	C	B		E	F	D	D	D		E	D
Approach Delay (s)		37.0				80.5			46.6			44.6
Approach LOS		D				F			D			D

Intersection Summary			
HCM Average Control Delay	52.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWR
Lane Configurations	
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Volume (vph)	71
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	77
RTOR Reduction (vph)	63
Lane Group Flow (vph)	14
Turn Type	Perm
Protected Phases	
Permitted Phases	8
Actuated Green, G (s)	22.3
Effective Green, g (s)	22.3
Actuated g/C Ratio	0.19
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	294
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.05
Uniform Delay, d1	40.1
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	40.2
Level of Service	D
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	339	83	283	337	141	183
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	368	90	308	366	153	199

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1
Volume Total (vph)	368	90	308	366	352
Volume Left (vph)	368	0	0	0	153
Volume Right (vph)	0	90	0	366	0
Hadj (s)	0.23	-0.57	0.03	-0.67	0.12
Departure Headway (s)	6.5	3.2	6.5	5.8	6.3
Degree Utilization, x	0.67	0.08	0.55	0.59	0.62
Capacity (veh/h)	527	1121	542	611	542
Control Delay (s)	21.7	6.5	16.0	15.4	19.2
Approach Delay (s)	18.7		15.7		19.2
Approach LOS	C		C		C

Intersection Summary			
Delay	17.4		
HCM Level of Service	C		
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	5085	5085	1583
Volume (vph)	76	361	442	984	1228	123
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	392	480	1070	1335	134
RTOR Reduction (vph)	0	336	0	0	0	87
Lane Group Flow (vph)	83	56	480	1070	1335	47
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	9.1	9.1	20.0	46.1	22.1	22.1
Effective Green, g (s)	9.1	9.1	20.0	46.1	22.1	22.1
Actuated g/C Ratio	0.14	0.14	0.32	0.73	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	255	228	560	3709	1778	554
v/s Ratio Prot	c0.05		c0.27	0.21	c0.26	
v/s Ratio Perm		0.04				0.03
v/c Ratio	0.33	0.25	0.86	0.29	0.75	0.08
Uniform Delay, d1	24.3	24.0	20.3	2.9	18.1	13.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.6	12.3	0.2	3.0	0.3
Delay (s)	25.0	24.6	32.6	3.1	21.1	14.1
Level of Service	C	C	C	A	C	B
Approach Delay (s)	24.7			12.2	20.5	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	221	383	764	1017	337	210	700	1494	803	78	1565	165
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	240	416	830	1105	366	228	761	1624	873	85	1701	179
RTOR Reduction (vph)	0	0	161	0	0	60	0	0	71	0	0	60
Lane Group Flow (vph)	240	416	669	1105	366	168	761	1624	802	85	1701	119
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	12.7	30.0	30.0	25.0	42.3	42.3	17.0	45.0	45.0	4.0	32.0	32.0
Effective Green, g (s)	12.7	30.0	30.0	25.0	42.3	42.3	17.0	45.0	45.0	4.0	32.0	32.0
Actuated g/C Ratio	0.11	0.25	0.25	0.21	0.35	0.35	0.14	0.38	0.38	0.03	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	363	885	396	715	1247	558	486	1907	594	114	1356	422
v/s Ratio Prot	0.07	0.12		c0.32	0.10		c0.22	0.32		0.02	0.33	
v/s Ratio Perm			c0.42			0.11			c0.51			0.08
v/c Ratio	0.66	0.47	1.69	1.55	0.29	0.30	1.57	0.85	1.35	0.75	1.25	0.28
Uniform Delay, d1	51.6	38.2	45.0	47.5	28.1	28.2	51.5	34.4	37.5	57.5	44.0	34.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.5	0.4	320.7	252.4	0.1	0.3	264.5	5.0	168.8	23.0	120.7	1.7
Delay (s)	56.1	38.6	365.7	299.9	28.2	28.5	316.0	39.5	206.3	80.5	164.7	36.6
Level of Service	E	D	F	F	C	C	F	D	F	F	F	D
Approach Delay (s)		224.1			204.9			148.8			149.4	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	173.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	116.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	372	831	92	44	956	26	230	134	58	86	60	330
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	404	903	100	48	1039	28	250	146	63	93	65	359
RTOR Reduction (vph)	0	0	41	0	0	12	0	0	51	0	0	320
Lane Group Flow (vph)	404	903	59	48	1039	16	250	146	12	93	65	39
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4		8	8		2	2			6
Actuated Green, G (s)	22.1	47.4	47.4	5.4	30.7	30.7	15.4	17.8	17.8	8.0	10.4	10.4
Effective Green, g (s)	22.1	47.4	47.4	5.4	30.7	30.7	15.4	17.8	17.8	8.0	10.4	10.4
Actuated g/C Ratio	0.23	0.50	0.50	0.06	0.32	0.32	0.16	0.19	0.19	0.08	0.11	0.11
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	413	1773	793	101	1148	514	288	351	298	150	205	174
v/s Ratio Prot	c0.23	0.26		0.03	c0.29		c0.14	c0.08		0.05	0.03	
v/s Ratio Perm			0.04			0.01			0.01			0.02
v/c Ratio	0.98	0.51	0.07	0.48	0.91	0.03	0.87	0.42	0.04	0.62	0.32	0.23
Uniform Delay, d1	36.0	15.8	12.2	43.2	30.6	21.8	38.6	33.8	31.4	41.8	38.8	38.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	38.1	0.2	0.0	3.5	10.1	0.0	23.0	0.8	0.1	7.7	0.9	0.7
Delay (s)	74.1	16.0	12.3	46.7	40.7	21.8	61.6	34.6	31.5	49.5	39.7	39.1
Level of Service	E	B	B	D	D	C	E	C	C	D	D	D
Approach Delay (s)		32.5			40.5			48.9			41.1	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	38.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	94.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1810		1770	1863	1583	1770	1836		1770	1863	1583
Flt Permitted	0.52	1.00		0.22	1.00	1.00	0.67	1.00		0.68	1.00	1.00
Satd. Flow (perm)	972	1810		410	1863	1583	1257	1836		1261	1863	1583
Volume (vph)	143	547	126	6	336	119	159	104	11	165	118	150
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	155	595	137	7	365	129	173	113	12	179	128	163
RTOR Reduction (vph)	0	17	0	0	0	61	0	7	0	0	0	118
Lane Group Flow (vph)	155	715	0	7	365	68	173	118	0	179	128	45
Turn Type	Perm			Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)	20.9	20.9		20.9	20.9	20.9	11.0	11.0		11.0	11.0	11.0
Effective Green, g (s)	20.9	20.9		20.9	20.9	20.9	11.0	11.0		11.0	11.0	11.0
Actuated g/C Ratio	0.52	0.52		0.52	0.52	0.52	0.28	0.28		0.28	0.28	0.28
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	509	948		215	976	829	347	506		348	514	436
v/s Ratio Prot		c0.40			0.20			0.06			0.07	
v/s Ratio Perm	0.16			0.02		0.04	0.14			c0.14		0.03
v/c Ratio	0.30	0.75		0.03	0.37	0.08	0.50	0.23		0.51	0.25	0.10
Uniform Delay, d1	5.4	7.5		4.6	5.6	4.7	12.1	11.2		12.2	11.2	10.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	3.5		0.1	0.2	0.0	1.1	0.2		1.3	0.3	0.1
Delay (s)	5.7	10.9		4.7	5.9	4.8	13.3	11.4		13.5	11.5	10.9
Level of Service	A	B		A	A	A	B	B		B	B	B
Approach Delay (s)		10.0			5.6			12.5			12.0	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	39.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86		0.95	0.95		0.95	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	1770	6308		1681	1511		1681	1522	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.94		0.95	0.29	
Satd. Flow (perm)	1770	5085	1583	1770	6308		1681	1427		1681	447	
Volume (vph)	558	2835	248	286	3487	405	418	0	787	383	0	439
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	607	3082	270	311	3790	440	454	0	855	416	0	477
RTOR Reduction (vph)	0	0	79	0	17	0	0	319	0	0	248	0
Lane Group Flow (vph)	607	3082	191	311	4213	0	424	567	0	367	278	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	23.0	59.0	59.0	13.0	49.0		16.0	36.0		12.0	28.0	
Effective Green, g (s)	23.0	59.0	59.0	13.0	49.0		16.0	36.0		12.0	28.0	
Actuated g/C Ratio	0.19	0.49	0.49	0.11	0.41		0.13	0.30		0.10	0.23	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	339	2500	778	192	2576		224	439		168	212	
v/s Ratio Prot	c0.34	0.61		0.18	c0.67		0.25	c0.17		c0.22	0.13	
v/s Ratio Perm			0.12					c0.21			0.17	
v/c Ratio	1.79	1.23	0.25	1.62	1.64		1.89	1.29		2.18	1.31	
Uniform Delay, d1	48.5	30.5	17.6	53.5	35.5		52.0	42.0		54.0	46.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	367.4	108.4	0.8	301.6	287.8		418.2	146.9		552.1	168.9	
Delay (s)	415.9	138.9	18.4	355.1	323.3		470.2	188.9		606.1	214.9	
Level of Service	F	F	B	F	F		F	F		F	F	
Approach Delay (s)		173.2			325.5			280.0			375.7	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	267.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	161.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	57	5	6	2	46	59	22	195	0	112	333	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	62	5	7	2	50	64	24	212	0	122	362	63
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	880	897	393	874	928	106	425			212		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	880	897	393	874	928	106	425			212		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	64	98	99	99	79	93	98			91		
cM capacity (veh/h)	173	248	606	217	237	928	1131			1356		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	62	5	7	2	50	64	24	106	106	0	122	425
Volume Left	62	0	0	2	0	0	24	0	0	0	122	0
Volume Right	0	0	7	0	0	64	0	0	0	0	0	63
cSH	173	248	606	217	237	928	1131	1700	1700	1700	1356	1700
Volume to Capacity	0.36	0.02	0.01	0.01	0.21	0.07	0.02	0.06	0.06	0.00	0.09	0.25
Queue Length 95th (ft)	38	2	1	1	19	6	2	0	0	0	7	0
Control Delay (s)	36.9	19.9	11.0	21.7	24.2	9.2	8.3	0.0	0.0	0.0	7.9	0.0
Lane LOS	E	C	B	C	C	A	A				A	
Approach Delay (s)	33.4			15.9			0.8				1.8	
Approach LOS	D			C								

Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	44.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0				4.0		4.0
Lane Util. Factor		0.91			0.86	1.00				0.97		0.88
Frt		1.00			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085			6408	1583				3433		2787
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085			6408	1583				3433		2787
Volume (vph)	0	2088	0	0	4087	188	0	0	0	273	0	1135
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2270	0	0	4442	204	0	0	0	297	0	1234
RTOR Reduction (vph)	0	0	0	0	0	77	0	0	0	0	0	5
Lane Group Flow (vph)	0	2270	0	0	4442	127	0	0	0	297	0	1229
Turn Type						Perm				custom		custom
Protected Phases		2			6							
Permitted Phases						6				8		8
Actuated Green, G (s)		69.0			69.0	69.0				43.0		43.0
Effective Green, g (s)		69.0			69.0	69.0				43.0		43.0
Actuated g/C Ratio		0.57			0.57	0.57				0.36		0.36
Clearance Time (s)		4.0			4.0	4.0				4.0		4.0
Vehicle Extension (s)		3.0			3.0	3.0				3.0		3.0
Lane Grp Cap (vph)		2924			3685	910				1230		999
v/s Ratio Prot		0.45			c0.69							
v/s Ratio Perm						0.08				0.09		c0.44
v/c Ratio		0.78			1.21	0.14				0.24		1.23
Uniform Delay, d1		19.6			25.5	11.8				27.0		38.5
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		2.1			95.2	0.3				0.1		112.4
Delay (s)		21.7			120.7	12.1				27.1		150.9
Level of Service		C			F	B				C		F
Approach Delay (s)		21.7			116.0			0.0			126.9	
Approach LOS		C			F			A			F	

Intersection Summary			
HCM Average Control Delay	92.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0		4.0			
Lane Util. Factor		0.91	1.00		0.91		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		5085	1583		5085		1770		1583			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		5085	1583		5085		1770		1583			
Volume (vph)	0	2768	110	0	2729	0	164	0	373	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	3009	120	0	2966	0	178	0	405	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	3009	120	0	2966	0	178	0	404	0	0	0
Turn Type			Free				custom		custom			
Protected Phases		2			6							
Permitted Phases			Free				4		4			
Actuated Green, G (s)		50.0	79.6		50.0		21.6		21.6			
Effective Green, g (s)		50.0	79.6		50.0		21.6		21.6			
Actuated g/C Ratio		0.63	1.00		0.63		0.27		0.27			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		3194	1583		3194		480		430			
v/s Ratio Prot		c0.59			0.58							
v/s Ratio Perm			0.08				0.10		c0.26			
v/c Ratio		0.94	0.08		0.93		0.37		0.94			
Uniform Delay, d1		13.5	0.0		13.2		23.5		28.4			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		7.2	0.1		6.2		0.5		28.8			
Delay (s)		20.7	0.1		19.4		24.0		57.1			
Level of Service		C	A		B		C		E			
Approach Delay (s)		19.9			19.4			47.0			0.0	
Approach LOS		B			B			D			A	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	79.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	1863	3433	1583
Volume (vph)	804	473	442	506	436	541
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	874	514	480	550	474	588
RTOR Reduction (vph)	0	212	0	0	0	381
Lane Group Flow (vph)	874	302	480	550	474	207
Turn Type		Perm	Prot			Perm
Protected Phases	6		5	2	4	
Permitted Phases		6				4
Actuated Green, G (s)	52.0	52.0	29.0	85.0	17.0	17.0
Effective Green, g (s)	52.0	52.0	29.0	85.0	17.0	17.0
Actuated g/C Ratio	0.47	0.47	0.26	0.77	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	881	748	467	1440	531	245
v/s Ratio Prot	c0.47		c0.27	0.30	c0.14	
v/s Ratio Perm		0.19				0.13
v/c Ratio	0.99	0.40	1.03	0.38	0.89	0.84
Uniform Delay, d1	28.8	18.9	40.5	4.0	45.6	45.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.5	1.6	48.9	0.8	17.1	22.4
Delay (s)	57.3	20.5	89.4	4.8	62.7	67.6
Level of Service	E	C	F	A	E	E
Approach Delay (s)	43.7			44.2	65.4	
Approach LOS	D			D	E	

Intersection Summary			
HCM Average Control Delay	50.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor		0.95			1.00	1.00		1.00		1.00	1.00	
Frt		0.98			1.00	0.85		0.98		1.00	0.86	
Flt Protected		0.99			1.00	1.00		0.96		0.95	1.00	
Satd. Flow (prot)		3447			1860	1583		1748		1770	1602	
Flt Permitted		0.52			0.86	1.00		0.29		0.65	1.00	
Satd. Flow (perm)		1807			1594	1583		534		1210	1602	
Volume (vph)	238	804	126	31	913	731	250	1	50	523	26	367
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	259	874	137	34	992	795	272	1	54	568	28	399
RTOR Reduction (vph)	0	8	0	0	0	83	0	6	0	0	65	0
Lane Group Flow (vph)	0	1262	0	0	1026	712	0	321	0	568	362	0
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		6			2			4			8	
Permitted Phases	6			2		2	4			8		
Actuated Green, G (s)		67.0			67.0	67.0		45.0		45.0	45.0	
Effective Green, g (s)		67.0			67.0	67.0		45.0		45.0	45.0	
Actuated g/C Ratio		0.56			0.56	0.56		0.38		0.38	0.38	
Clearance Time (s)		4.0			4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		1009			890	884		200		454	601	
v/s Ratio Prot											0.23	
v/s Ratio Perm		c0.70			0.64	0.45		c0.60		0.47		
v/c Ratio		3.70dl			1.15	0.80		1.61		1.25	0.60	
Uniform Delay, d1		26.5			26.5	21.3		37.5		37.5	30.3	
Progression Factor		1.00			1.35	1.49		1.00		1.00	1.00	
Incremental Delay, d2		121.1			70.1	0.7		295.1		130.1	1.7	
Delay (s)		147.6			106.0	32.4		332.6		167.6	32.0	
Level of Service		F			F	C		F		F	C	
Approach Delay (s)		147.6			73.8			332.6			109.4	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM Average Control Delay	122.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	142.2%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	1863	1583
Flt Permitted	0.25	1.00	1.00	0.19	1.00	1.00	0.75	1.00	1.00	0.75	1.00	1.00
Satd. Flow (perm)	468	3539	1583	350	3539	1583	1393	3539	1583	1402	1863	1583
Volume (vph)	101	1107	56	56	873	88	56	6	9	211	14	27
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	1203	61	61	949	96	61	7	10	229	15	29
RTOR Reduction (vph)	0	0	29	0	0	46	0	0	7	0	0	21
Lane Group Flow (vph)	110	1203	32	61	949	50	61	7	3	229	15	8
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	21.3	21.3	21.3	21.3	21.3	21.3	11.7	11.7	11.7	11.7	11.7	11.7
Effective Green, g (s)	21.3	21.3	21.3	21.3	21.3	21.3	11.7	11.7	11.7	11.7	11.7	11.7
Actuated g/C Ratio	0.52	0.52	0.52	0.52	0.52	0.52	0.29	0.29	0.29	0.29	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	243	1839	822	182	1839	822	398	1010	452	400	532	452
v/s Ratio Prot		c0.34			0.27			0.00			0.01	
v/s Ratio Perm	0.24		0.02	0.17		0.03	0.04		0.00	c0.16		0.01
v/c Ratio	0.45	0.65	0.04	0.34	0.52	0.06	0.15	0.01	0.01	0.57	0.03	0.02
Uniform Delay, d1	6.2	7.2	4.8	5.7	6.5	4.9	10.9	10.5	10.5	12.5	10.6	10.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.8	0.0	1.1	0.2	0.0	0.2	0.0	0.0	2.0	0.0	0.0
Delay (s)	7.5	8.0	4.8	6.8	6.7	4.9	11.1	10.5	10.5	14.5	10.6	10.5
Level of Service	A	A	A	A	A	A	B	B	B	B	B	B
Approach Delay (s)		7.8			6.6			11.0			13.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	41.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3504		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3504		1770	3539	1583	1770	3539	1583
Volume (vph)	432	547	128	37	1314	93	41	834	416	95	1133	257
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	470	595	139	40	1428	101	45	907	452	103	1232	279
RTOR Reduction (vph)	0	0	74	0	4	0	0	0	208	0	0	132
Lane Group Flow (vph)	470	595	65	40	1525	0	45	907	244	103	1232	147
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	14.0	56.3	56.3	5.5	47.8		3.2	34.8	34.8	8.0	39.6	39.6
Effective Green, g (s)	14.0	56.3	56.3	5.5	47.8		3.2	34.8	34.8	8.0	39.6	39.6
Actuated g/C Ratio	0.12	0.47	0.47	0.05	0.40		0.03	0.29	0.29	0.07	0.33	0.33
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	399	1652	739	81	1389		47	1021	457	117	1162	520
v/s Ratio Prot	c0.14	0.17		0.02	c0.44		0.03	0.26		c0.06	c0.35	
v/s Ratio Perm			0.04						0.15			0.09
v/c Ratio	1.18	0.36	0.09	0.49	1.10		0.96	0.89	0.53	0.88	1.06	0.28
Uniform Delay, d1	53.3	20.6	17.9	56.2	36.4		58.6	41.0	36.1	55.8	40.5	30.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	103.2	0.1	0.1	4.7	55.5		114.0	9.5	1.2	48.2	43.9	0.3
Delay (s)	156.5	20.7	17.9	60.9	91.9		172.6	50.6	37.3	104.1	84.4	30.3
Level of Service	F	C	B	E	F		F	D	D	F	F	C
Approach Delay (s)		73.4			91.1			50.2			76.3	
Approach LOS		E			F			D			E	

Intersection Summary			
HCM Average Control Delay	73.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88	1.00	0.91		0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	1863	2787	1770	5085		3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	1770	1863	2787	1770	5085		3433	5085	1583
Volume (vph)	186	84	37	3	73	920	43	1772	0	921	1856	326
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	202	91	40	3	79	1000	47	1926	0	1001	2017	354
RTOR Reduction (vph)	0	0	32	0	0	37	0	0	0	0	0	98
Lane Group Flow (vph)	202	91	8	3	79	963	47	1926	0	1001	2017	256
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.8	22.0	22.0	0.7	10.9	42.1	6.0	42.3		31.2	67.5	79.3
Effective Green, g (s)	11.8	22.0	22.0	0.7	10.9	42.1	6.0	42.3		31.2	67.5	79.3
Actuated g/C Ratio	0.11	0.20	0.20	0.01	0.10	0.38	0.05	0.38		0.28	0.60	0.71
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	361	365	310	11	181	1145	95	1917		955	3059	1175
v/s Ratio Prot	c0.06	0.05		0.00	0.04	c0.23	0.03	c0.38		c0.29	0.40	0.02
v/s Ratio Perm			0.00			0.11						0.14
v/c Ratio	0.56	0.25	0.03	0.27	0.44	0.84	0.49	1.00		1.05	0.66	0.22
Uniform Delay, d1	47.7	38.1	36.4	55.5	47.8	32.0	51.6	35.0		40.5	14.8	5.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.9	0.4	0.0	13.0	1.7	5.7	4.0	21.7		42.6	0.5	0.1
Delay (s)	49.6	38.5	36.5	68.5	49.4	37.7	55.6	56.6		83.1	15.3	5.8
Level of Service	D	D	D	E	D	D	E	E		F	B	A
Approach Delay (s)		45.0			38.6			56.6			34.4	
Approach LOS		D			D			E			C	

Intersection Summary			
HCM Average Control Delay	42.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	112.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	4.0
Lane Util. Factor		1.00			1.00			1.00			1.00	1.00
Frt		0.98			1.00			1.00			1.00	0.85
Flt Protected		0.99			1.00			0.99			1.00	1.00
Satd. Flow (prot)		1811			1858			1837			1857	1583
Flt Permitted		0.96			1.00			0.87			0.98	1.00
Satd. Flow (perm)		1740			1858			1617			1825	1583
Volume (vph)	13	88	20	0	131	3	77	193	0	14	210	26
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	96	22	0	142	3	84	210	0	15	228	28
RTOR Reduction (vph)	0	18	0	0	2	0	0	0	0	0	0	10
Lane Group Flow (vph)	0	114	0	0	143	0	0	294	0	0	243	18
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		8.1			8.1			27.4			27.4	27.4
Effective Green, g (s)		8.1			8.1			27.4			27.4	27.4
Actuated g/C Ratio		0.19			0.19			0.63			0.63	0.63
Clearance Time (s)		4.0			4.0			4.0			4.0	4.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		324			346			1019			1150	997
v/s Ratio Prot					c0.08							
v/s Ratio Perm		0.07						c0.18			0.13	0.01
v/c Ratio		0.35			0.41			0.29			0.21	0.02
Uniform Delay, d1		15.4			15.6			3.6			3.4	3.0
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.7			0.8			0.2			0.1	0.0
Delay (s)		16.1			16.4			3.8			3.5	3.0
Level of Service		B			B			A			A	A
Approach Delay (s)		16.1			16.4			3.8			3.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	43.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0				4.0		4.0
Lane Util. Factor		0.95	1.00		0.95	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3539	1583		3539	1583				1770		1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3539	1583		3539	1583				1770		1583
Volume (vph)	0	839	4	0	1056	64	0	0	0	259	0	55
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	912	4	0	1148	70	0	0	0	282	0	60
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	14
Lane Group Flow (vph)	0	912	4	0	1148	70	0	0	0	282	0	46
Turn Type			Free			Free				custom		custom
Protected Phases		4			8							
Permitted Phases			Free			Free				6		6
Actuated Green, G (s)		17.7	40.0		17.7	40.0				14.3		14.3
Effective Green, g (s)		17.7	40.0		17.7	40.0				14.3		14.3
Actuated g/C Ratio		0.44	1.00		0.44	1.00				0.36		0.36
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		1566	1583		1566	1583				633		566
v/s Ratio Prot		0.26			c0.32							
v/s Ratio Perm			0.00			0.04				c0.16		0.03
v/c Ratio		0.58	0.00		0.73	0.04				0.45		0.08
Uniform Delay, d1		8.4	0.0		9.2	0.0				9.8		8.5
Progression Factor		1.00	1.00		1.00	1.00				1.00		1.00
Incremental Delay, d2		0.6	0.0		1.8	0.1				2.3		0.3
Delay (s)		8.9	0.0		11.0	0.1				12.1		8.8
Level of Service		A	A		B	A				B		A
Approach Delay (s)		8.9			10.4			0.0			11.5	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0		4.0			
Lane Util. Factor		0.95	1.00		0.95	1.00	1.00		1.00			
Frt		1.00	0.85		1.00	0.85	1.00		0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3539	1583		3539	1583	1770		1583			
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3539	1583		3539	1583	1770		1583			
Volume (vph)	0	660	54	0	1217	905	676	0	244	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	717	59	0	1323	984	735	0	265	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	57	0	0	0
Lane Group Flow (vph)	0	717	59	0	1323	984	735	0	208	0	0	0
Turn Type			Free			Free	custom		custom			
Protected Phases		4			8							
Permitted Phases			Free			Free	2		2			
Actuated Green, G (s)		28.5	70.0		28.5	70.0	33.5		33.5			
Effective Green, g (s)		28.5	70.0		28.5	70.0	33.5		33.5			
Actuated g/C Ratio		0.41	1.00		0.41	1.00	0.48		0.48			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		1441	1583		1441	1583	847		758			
v/s Ratio Prot		0.20			c0.37							
v/s Ratio Perm			0.04			0.62	c0.42		0.13			
v/c Ratio		0.50	0.04		0.92	0.62	0.87		0.27			
Uniform Delay, d1		15.4	0.0		19.6	0.0	16.3		11.0			
Progression Factor		1.00	1.00		1.00	1.00	1.00		1.00			
Incremental Delay, d2		0.3	0.0		9.5	1.8	11.7		0.9			
Delay (s)		15.7	0.0		29.2	1.8	27.9		11.8			
Level of Service		B	A		C	A	C		B			
Approach Delay (s)		14.5			17.5			23.7			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Volume (vph)	9	1017	77	487	1593	858	600	778	8	59	900	821
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	1105	84	529	1732	933	652	846	9	64	978	892
RTOR Reduction (vph)	0	0	34	0	0	208	0	0	5	0	0	2
Lane Group Flow (vph)	10	1105	50	529	1732	725	652	846	4	64	978	890
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		1	6		5	2	3
Permitted Phases			4			8			6			2
Actuated Green, G (s)	0.8	35.2	35.2	24.0	58.4	58.4	19.0	37.8	37.8	7.0	25.8	49.8
Effective Green, g (s)	0.8	35.2	35.2	24.0	58.4	58.4	19.0	37.8	37.8	7.0	25.8	49.8
Actuated g/C Ratio	0.01	0.29	0.29	0.20	0.49	0.49	0.16	0.32	0.32	0.06	0.22	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	12	1038	464	687	1722	770	544	1115	499	103	761	710
v/s Ratio Prot	0.01	0.31		0.15	c0.49		c0.19	0.24		0.04	0.28	c0.25
v/s Ratio Perm			0.03			0.46			0.00			0.31
v/c Ratio	0.83	1.06	0.11	0.77	1.01	0.94	1.20	0.76	0.01	0.62	1.29	1.25
Uniform Delay, d1	59.5	42.4	30.9	45.4	30.8	29.2	50.5	37.0	28.2	55.2	47.1	35.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.97	0.97	1.00	1.00	1.00
Incremental Delay, d2	168.3	46.8	0.1	5.3	23.1	19.6	91.1	0.5	0.0	11.1	138.2	125.6
Delay (s)	227.8	89.2	31.0	50.7	53.9	48.7	140.5	36.5	27.4	66.3	185.3	160.7
Level of Service	F	F	C	D	D	D	F	D	C	E	F	F
Approach Delay (s)		86.3			51.9			81.4			170.0	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	92.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	106.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	261	1619	185	220	1919	218	423	616	144	474	458	149
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	284	1760	201	239	2086	237	460	670	157	515	498	162
RTOR Reduction (vph)	0	0	70	0	0	65	0	0	80	0	0	116
Lane Group Flow (vph)	284	1760	131	239	2086	172	460	670	77	515	498	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	40.0	40.0	9.0	41.0	41.0	15.6	20.0	20.0	15.0	19.4	19.4
Effective Green, g (s)	8.0	40.0	40.0	9.0	41.0	41.0	15.6	20.0	20.0	15.0	19.4	19.4
Actuated g/C Ratio	0.08	0.40	0.40	0.09	0.41	0.41	0.16	0.20	0.20	0.15	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	275	2034	633	309	2085	649	536	708	317	515	687	307
v/s Ratio Prot	c0.08	0.35		0.07	c0.41		0.13	c0.19		c0.15	0.14	
v/s Ratio Perm			0.08			0.11			0.05			0.03
v/c Ratio	1.03	0.87	0.21	0.77	1.00	0.27	0.86	0.95	0.24	1.00	0.72	0.15
Uniform Delay, d1	46.0	27.5	19.6	44.5	29.5	19.5	41.1	39.5	33.6	42.5	37.8	33.5
Progression Factor	1.00	1.00	1.00	0.95	1.36	1.89	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	63.0	4.1	0.2	1.1	6.0	0.0	12.9	23.0	1.8	39.7	6.6	1.0
Delay (s)	109.0	31.7	19.8	43.4	46.2	37.0	54.0	62.4	35.4	82.2	44.4	34.5
Level of Service	F	C	B	D	D	D	D	E	D	F	D	C
Approach Delay (s)		40.4			45.1			56.1			59.6	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	47.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	749	1467	302	451	1414	157	400	567	439	197	449	720
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	814	1595	328	490	1537	171	435	616	477	214	488	783
RTOR Reduction (vph)	0	0	129	0	0	79	0	0	253	0	0	2
Lane Group Flow (vph)	814	1595	199	490	1537	92	435	616	224	214	488	781
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	26.0	38.4	38.4	16.6	29.0	29.0	13.0	22.0	22.0	7.0	16.0	42.0
Effective Green, g (s)	26.0	38.4	38.4	16.6	29.0	29.0	13.0	22.0	22.0	7.0	16.0	42.0
Actuated g/C Ratio	0.26	0.38	0.38	0.17	0.29	0.29	0.13	0.22	0.22	0.07	0.16	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	893	1953	608	570	1475	459	446	779	348	240	566	728
v/s Ratio Prot	0.24	0.31		0.14	c0.30		c0.13	0.17		0.06	0.14	c0.28
v/s Ratio Perm			0.13			0.06			0.14			0.21
v/c Ratio	0.91	0.82	0.33	0.86	1.04	0.20	0.98	0.79	0.64	0.89	0.86	1.07
Uniform Delay, d1	35.9	27.6	21.7	40.6	35.5	26.8	43.3	36.8	35.4	46.1	40.9	29.0
Progression Factor	1.31	0.96	1.33	1.00	1.00	1.00	1.00	1.00	1.00	0.78	0.88	1.27
Incremental Delay, d2	9.0	1.7	0.2	12.3	35.2	0.2	35.9	8.0	8.9	30.4	15.5	54.3
Delay (s)	55.9	28.2	29.1	52.9	70.7	27.0	79.2	44.9	44.3	66.6	51.5	91.2
Level of Service	E	C	C	D	E	C	E	D	D	E	D	F
Approach Delay (s)		36.6			63.3			54.5			74.6	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM Average Control Delay	54.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	332	1197	224	391	1018	199	232	360	226	268	471	385
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	361	1301	243	425	1107	216	252	391	246	291	512	418
RTOR Reduction (vph)	0	0	174	0	0	154	0	0	186	0	0	230
Lane Group Flow (vph)	361	1301	69	425	1107	62	252	391	60	291	512	188
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.9	20.0	20.0	10.0	20.1	20.1	7.0	17.0	17.0	7.0	17.0	17.0
Effective Green, g (s)	9.9	20.0	20.0	10.0	20.1	20.1	7.0	17.0	17.0	7.0	17.0	17.0
Actuated g/C Ratio	0.14	0.29	0.29	0.14	0.29	0.29	0.10	0.24	0.24	0.10	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	486	1453	452	490	1460	455	343	859	384	343	859	384
v/s Ratio Prot	0.11	c0.26		c0.12	0.22		0.07	0.11		c0.08	c0.14	
v/s Ratio Perm			0.04			0.04			0.04			0.12
v/c Ratio	0.74	0.90	0.15	0.87	0.76	0.14	0.73	0.46	0.16	0.85	0.60	0.49
Uniform Delay, d1	28.8	24.0	18.7	29.4	22.7	18.5	30.6	22.6	20.9	31.0	23.5	22.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.1	7.5	0.2	14.9	2.3	0.1	7.9	1.7	0.9	17.4	3.0	4.4
Delay (s)	34.9	31.5	18.8	44.3	25.0	18.6	38.5	24.3	21.7	48.4	26.5	27.2
Level of Service	C	C	B	D	C	B	D	C	C	D	C	C
Approach Delay (s)		30.5			28.9			27.6			31.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95			0.95	0.95	0.97	0.95	
Frt		1.00	0.85	1.00	1.00			0.96	0.85	1.00	0.94	
Flt Protected		1.00	1.00	0.95	1.00			0.97	1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539			1635	1504	3433	3334	
Flt Permitted		1.00	1.00	0.95	1.00			0.97	1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539			1635	1504	3433	3334	
Volume (vph)	0	842	195	575	766	0	145	0	593	411	202	128
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	915	212	625	833	0	158	0	645	447	220	139
RTOR Reduction (vph)	0	0	66	0	0	0	0	12	447	0	83	0
Lane Group Flow (vph)	0	915	146	625	833	0	0	209	135	447	276	0
Turn Type			Perm	Prot			Split		Perm	Split		
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)		30.0	30.0	41.0	75.0			16.7	16.7	16.0	16.0	
Effective Green, g (s)		30.0	30.0	41.0	75.0			16.7	16.7	16.0	16.0	
Actuated g/C Ratio		0.25	0.25	0.34	0.63			0.14	0.14	0.13	0.13	
Clearance Time (s)		4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		887	397	606	2217			228	210	459	446	
v/s Ratio Prot		c0.26		c0.35	0.24			c0.13		c0.13	0.08	
v/s Ratio Perm			0.09						0.09			
v/c Ratio		1.03	0.37	1.03	0.38			0.92	0.64	0.97	0.62	
Uniform Delay, d1		44.8	37.0	39.4	10.9			50.8	48.7	51.6	49.0	
Progression Factor		1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2		38.6	0.6	44.8	0.1			37.2	6.6	36.0	6.3	
Delay (s)		83.5	37.6	84.2	11.0			88.1	55.3	87.6	55.3	
Level of Service		F	D	F	B			F	E	F	E	
Approach Delay (s)		74.8			42.4			64.3			73.2	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM Average Control Delay	61.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	119.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.91	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3433	3539			3539	1583	1681	1546	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.54		1.00
Satd. Flow (perm)	3433	3539			3539	1583	1681	1546	1504	1967		1583
Volume (vph)	364	1206	0	0	1447	333	193	126	453	350	0	438
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	396	1311	0	0	1573	362	210	137	492	380	0	476
RTOR Reduction (vph)	0	0	0	0	0	58	0	40	40	0	0	191
Lane Group Flow (vph)	396	1311	0	0	1573	304	210	291	258	380	0	285
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	13.0	66.0			49.0	49.0	21.0	21.0	21.0	21.0		21.0
Effective Green, g (s)	13.0	66.0			49.0	49.0	21.0	21.0	21.0	21.0		21.0
Actuated g/C Ratio	0.11	0.55			0.41	0.41	0.18	0.18	0.18	0.18		0.18
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	372	1946			1445	646	294	271	263	344		277
v/s Ratio Prot	c0.12	0.37			c0.44		0.12	c0.19				
v/s Ratio Perm						0.19			0.17	c0.19		0.18
v/c Ratio	1.06	0.67			1.09	0.47	0.71	1.08	0.98	1.10		1.03
Uniform Delay, d1	53.5	19.3			35.5	26.0	46.7	49.5	49.3	49.5		49.5
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	64.8	0.9			51.7	0.5	13.8	76.1	51.2	79.7		62.2
Delay (s)	118.3	20.2			87.2	26.5	60.5	125.6	100.5	129.2		111.7
Level of Service	F	C			F	C	E	F	F	F		F
Approach Delay (s)		43.0			75.8			100.4			119.5	
Approach LOS		D			E			F			F	

Intersection Summary			
HCM Average Control Delay	76.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

2019 BASELINE PLUS PROJECT PHASES 1-5 WITH MITIGATION TRAFFIC CONDITION

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	3539	1583
Volume (vph)	6	1534	136	160	1669	113	97	107	225	121	143	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	1667	148	174	1814	123	105	116	245	132	155	26
RTOR Reduction (vph)	0	0	86	0	0	43	0	0	115	0	0	21
Lane Group Flow (vph)	7	1667	62	174	1814	80	105	116	130	132	155	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	27.2	27.2	5.0	31.4	31.4	3.2	13.6	13.6	3.2	13.6	13.6
Effective Green, g (s)	0.8	27.2	27.2	5.0	31.4	31.4	3.2	13.6	13.6	3.2	13.6	13.6
Actuated g/C Ratio	0.01	0.42	0.42	0.08	0.48	0.48	0.05	0.21	0.21	0.05	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	42	2128	662	264	2456	765	169	390	331	169	740	331
v/s Ratio Prot	0.00	0.33		c0.05	c0.36		0.03	0.06		c0.04	0.04	
v/s Ratio Perm			0.04			0.05			c0.08			0.00
v/c Ratio	0.17	0.78	0.09	0.66	0.74	0.10	0.62	0.30	0.39	0.78	0.21	0.02
Uniform Delay, d1	31.8	16.4	11.4	29.2	13.5	9.1	30.3	21.7	22.1	30.6	21.3	20.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	2.0	0.1	5.8	1.2	0.1	6.9	1.9	3.5	20.5	0.6	0.1
Delay (s)	33.6	18.3	11.5	35.0	14.7	9.2	37.2	23.6	25.6	51.1	21.9	20.5
Level of Service	C	B	B	D	B	A	D	C	C	D	C	C
Approach Delay (s)		17.8			16.0			27.7			34.1	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	0.95	0.95	0.88	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00	0.95		1.00
Satd. Flow (prot)	3433	3539			3539	1583	1681	1689	2787	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.95	1.00	0.64		1.00
Satd. Flow (perm)	3433	3539			3539	1583	1681	1689	2787	2315		1583
Volume (vph)	359	1119	0	0	614	256	311	6	377	198	0	235
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	390	1216	0	0	667	278	338	7	410	215	0	255
RTOR Reduction (vph)	0	0	0	0	0	168	0	0	167	0	0	201
Lane Group Flow (vph)	390	1216	0	0	667	110	169	176	243	215	0	54
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	10.0	29.9			15.9	15.9	17.0	17.0	17.0	16.0		16.0
Effective Green, g (s)	10.0	29.9			15.9	15.9	17.0	17.0	17.0	16.0		16.0
Actuated g/C Ratio	0.13	0.40			0.21	0.21	0.23	0.23	0.23	0.21		0.21
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	458	1413			751	336	382	383	633	495		338
v/s Ratio Prot	0.11	c0.34			0.19		0.10	c0.10				
v/s Ratio Perm						0.07			0.09	c0.09		0.03
v/c Ratio	0.85	0.86			0.89	0.33	0.44	0.46	0.38	0.43		0.16
Uniform Delay, d1	31.7	20.6			28.6	25.0	24.9	25.0	24.5	25.5		24.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	14.1	5.6			12.3	0.6	3.7	3.9	1.8	2.8		1.0
Delay (s)	45.9	26.2			41.0	25.6	28.6	28.9	26.3	28.3		25.0
Level of Service	D	C			D	C	C	C	C	C		C
Approach Delay (s)		31.0			36.4			27.4			26.5	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	74.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	3539	1583
Volume (vph)	8	2069	250	276	1732	132	199	452	241	180	540	33
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	2249	272	300	1883	143	216	491	262	196	587	36
RTOR Reduction (vph)	0	0	113	0	0	30	0	0	84	0	0	28
Lane Group Flow (vph)	9	2249	159	300	1883	113	216	491	178	196	587	8
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	51.2	51.2	10.0	60.4	60.4	9.0	25.8	25.8	7.0	23.8	23.8
Effective Green, g (s)	0.8	51.2	51.2	10.0	60.4	60.4	9.0	25.8	25.8	7.0	23.8	23.8
Actuated g/C Ratio	0.01	0.47	0.47	0.09	0.55	0.55	0.08	0.23	0.23	0.06	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	25	2367	737	312	2792	869	281	437	371	218	766	343
v/s Ratio Prot	0.00	c0.44		c0.09	0.37		c0.06	c0.26		0.06	0.17	
v/s Ratio Perm			0.10			0.07			0.11			0.00
v/c Ratio	0.36	0.95	0.22	0.96	0.67	0.13	0.77	1.12	0.48	0.90	0.77	0.02
Uniform Delay, d1	54.3	28.2	17.5	49.8	17.8	12.0	49.5	42.1	36.3	51.1	40.5	33.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	9.4	0.1	40.5	0.7	0.1	11.9	81.2	4.4	34.5	7.2	0.1
Delay (s)	63.0	37.6	17.6	90.3	18.4	12.1	61.4	123.3	40.7	85.6	47.7	34.1
Level of Service	E	D	B	F	B	B	E	F	D	F	D	C
Approach Delay (s)		35.5			27.3			87.2			56.2	
Approach LOS		D			C			F			E	

Intersection Summary			
HCM Average Control Delay	42.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.95			0.95	1.00	0.95	0.95	0.88	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	3433	3539			3539	1583	1681	1749	2787	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.64		1.00
Satd. Flow (perm)	3433	3539			3539	1583	1681	1749	2787	2311		1583
Volume (vph)	364	1206	0	0	1447	333	193	126	453	350	0	438
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	396	1311	0	0	1573	362	210	137	492	380	0	476
RTOR Reduction (vph)	0	0	0	0	0	58	0	0	80	0	0	186
Lane Group Flow (vph)	396	1311	0	0	1573	305	169	178	412	380	0	290
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	14.0	69.0			51.0	51.0	18.0	18.0	18.0	21.0		21.0
Effective Green, g (s)	14.0	69.0			51.0	51.0	18.0	18.0	18.0	21.0		21.0
Actuated g/C Ratio	0.12	0.57			0.42	0.42	0.15	0.15	0.15	0.18		0.18
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	401	2035			1504	673	252	262	418	404		277
v/s Ratio Prot	c0.12	0.37			c0.44		0.10	0.10				
v/s Ratio Perm						0.19			c0.15	0.16		c0.18
v/c Ratio	0.99	0.64			1.05	0.45	0.67	0.68	0.99	0.94		1.05
Uniform Delay, d1	52.9	17.2			34.5	24.6	48.2	48.3	50.9	48.9		49.5
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	41.2	0.7			36.2	0.5	13.3	13.3	40.6	32.1		66.4
Delay (s)	94.1	17.9			70.7	25.0	61.5	61.6	91.5	81.0		115.9
Level of Service	F	B			E	C	E	E	F	F		F
Approach Delay (s)		35.6			62.2			79.1			100.4	
Approach LOS		D			E			E			F	

Intersection Summary			
HCM Average Control Delay	62.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

2025 BUILDOUT PLUS PROJECT PHASES 1-5 TRAFFIC CONDITION

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	3433	1583
Flt Permitted	0.75	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1394	3539	3539	1583	3433	1583
Volume (vph)	92	30	12	166	441	136
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	33	13	180	479	148
RTOR Reduction (vph)	0	0	0	86	0	107
Lane Group Flow (vph)	100	33	13	94	479	41
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)	20.8	20.8	20.8	20.8	11.2	11.2
Effective Green, g (s)	20.8	20.8	20.8	20.8	11.2	11.2
Actuated g/C Ratio	0.52	0.52	0.52	0.52	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	725	1840	1840	823	961	443
v/s Ratio Prot		0.01	0.00			
v/s Ratio Perm	c0.07			0.06	c0.14	0.03
v/c Ratio	0.14	0.02	0.01	0.11	0.50	0.09
Uniform Delay, d1	5.0	4.7	4.6	4.9	12.0	10.6
Progression Factor	1.00	1.00	2.06	4.51	1.00	1.00
Incremental Delay, d2	0.4	0.0	0.0	0.3	0.4	0.1
Delay (s)	5.4	4.7	9.5	22.4	12.5	10.7
Level of Service	A	A	A	C	B	B
Approach Delay (s)		5.2	21.5		12.1	
Approach LOS		A	C		B	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Volume (vph)	26	1064	260	0	0	646
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	1157	283	0	0	702
RTOR Reduction (vph)	0	536	0	0	0	0
Lane Group Flow (vph)	28	621	283	0	0	702
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	26.2	26.2	25.8			25.8
Effective Green, g (s)	26.2	26.2	25.8			25.8
Actuated g/C Ratio	0.44	0.44	0.43			0.43
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	773	1217	801			801
v/s Ratio Prot	0.02		0.15			c0.38
v/s Ratio Perm		c0.22				
v/c Ratio	0.04	0.51	0.35			0.88
Uniform Delay, d1	9.7	12.2	11.5			15.6
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	1.5	0.3			10.6
Delay (s)	9.8	13.8	11.8			26.2
Level of Service	A	B	B			C
Approach Delay (s)	13.7		11.8			26.2
Approach LOS	B		B			C

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3289		3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3289		3433	5085	1583	3433	3539	1583
Volume (vph)	601	189	141	57	129	115	24	968	313	132	479	499
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	653	205	153	62	140	125	26	1052	340	143	521	542
RTOR Reduction (vph)	0	0	105	0	106	0	0	0	197	0	0	344
Lane Group Flow (vph)	653	205	48	62	159	0	26	1052	143	143	521	198
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.0	20.3	20.3	2.4	9.7		2.6	18.2	18.2	8.1	23.7	23.7
Effective Green, g (s)	13.0	20.3	20.3	2.4	9.7		2.6	18.2	18.2	8.1	23.7	23.7
Actuated g/C Ratio	0.20	0.31	0.31	0.04	0.15		0.04	0.28	0.28	0.12	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	687	1105	494	127	491		137	1424	443	428	1290	577
v/s Ratio Prot	c0.19	0.06		0.02	c0.05		0.01	c0.21		c0.04	0.15	
v/s Ratio Perm			0.03						0.09			0.12
v/c Ratio	0.95	0.19	0.10	0.49	0.32		0.19	0.74	0.32	0.33	0.40	0.34
Uniform Delay, d1	25.7	16.3	15.8	30.7	24.7		30.2	21.2	18.5	26.0	15.4	15.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.9	0.1	0.1	2.9	0.4		0.7	3.5	1.9	0.5	0.9	1.6
Delay (s)	48.5	16.4	15.9	33.6	25.1		30.9	24.7	20.5	26.5	16.3	16.6
Level of Service	D	B	B	C	C		C	C	C	C	B	B
Approach Delay (s)		37.1			26.7			23.8			17.7	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

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                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Weber/Herndon
********************************************************************************
Average Delay (sec/veh):      0.2       Worst Case Level Of Service: B[ 11.2]
********************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  1    0  0  3  0  1    1  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    20     0    0     0     0  942   158    10 1021     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0    20     0    0     0     0  942   158    10 1021     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0    20     0    0     0     0  942   158    10 1021     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    22     0    0     0     0 1024   172    11 1110     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    22     0    0     0     0 1024   172    11 1110     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   341  xxxx xxxx   370  xxxx xxxx xxxxx  1196 xxxx xxxxx
Potent Cap.: xxxx xxxx   660  xxxx xxxx   633  xxxx xxxx xxxxx   591 xxxx xxxxx
Move Cap.:   xxxx xxxx   660  xxxx xxxx   633  xxxx xxxx xxxxx   591 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.03  xxxx xxxx  0.00  xxxx xxxx  xxxx  0.02 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.1  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx  10.6 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  11.2 xxxx xxxxx
LOS by Move:   *    *     B     *    *     *     *    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      10.6           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        B                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	267	414	357	103	773	190	304	112	173	181	145	257
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	290	450	388	112	840	207	330	122	188	197	158	279
RTOR Reduction (vph)	0	0	188	0	0	159	0	0	124	0	0	52
Lane Group Flow (vph)	290	450	200	112	840	48	330	122	64	197	158	227
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	18.3	34.8	4.0	16.3	16.3	16.5	23.9	23.9	7.8	15.2	21.2
Effective Green, g (s)	6.0	18.3	34.8	4.0	16.3	16.3	16.5	23.9	23.9	7.8	15.2	21.2
Actuated g/C Ratio	0.09	0.26	0.50	0.06	0.23	0.23	0.24	0.34	0.34	0.11	0.22	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	294	1329	877	196	1184	369	809	1208	540	383	768	570
v/s Ratio Prot	c0.08	0.09	0.05	0.03	c0.17		c0.10	0.03		c0.06	0.04	c0.03
v/s Ratio Perm			0.07			0.03			0.04			0.11
v/c Ratio	0.99	0.34	0.23	0.57	0.71	0.13	0.41	0.10	0.12	0.51	0.21	0.40
Uniform Delay, d1	32.0	20.9	10.0	32.2	24.7	21.2	22.6	15.7	15.8	29.3	22.5	19.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	48.3	0.2	0.1	4.0	2.0	0.2	1.5	0.2	0.4	1.2	0.1	0.5
Delay (s)	80.3	21.1	10.1	36.1	26.6	21.4	24.1	15.9	16.3	30.5	22.6	19.8
Level of Service	F	C	B	D	C	C	C	B	B	C	C	B
Approach Delay (s)		32.5			26.6			20.3			23.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91		0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085		3433	1760		3433	1863	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085		3433	1760		3433	1863	
Volume (vph)	50	628	23	182	814	0	47	248	145	50	324	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	683	25	198	885	0	51	270	158	54	352	0
RTOR Reduction (vph)	0	0	19	0	0	0	0	33	0	0	0	0
Lane Group Flow (vph)	54	683	6	198	885	0	51	395	0	54	352	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	2.4	15.5	15.5	5.0	18.1		2.4	21.1		2.4	21.1	
Effective Green, g (s)	2.4	15.5	15.5	5.0	18.1		2.4	21.1		2.4	21.1	
Actuated g/C Ratio	0.04	0.26	0.26	0.08	0.30		0.04	0.35		0.04	0.35	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	137	1314	409	286	1534		137	619		137	655	
v/s Ratio Prot	0.02	0.13		c0.06	c0.17		0.01	c0.22		c0.02	0.19	
v/s Ratio Perm			0.00									
v/c Ratio	0.39	0.52	0.02	0.69	0.58		0.37	0.64		0.39	0.54	
Uniform Delay, d1	28.1	19.1	16.6	26.8	17.7		28.1	16.3		28.1	15.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	0.3	0.0	7.1	0.5		1.7	5.0		1.9	3.1	
Delay (s)	30.0	19.4	16.6	33.8	18.2		29.8	21.2		30.0	18.7	
Level of Service	C	B	B	C	B		C	C		C	B	
Approach Delay (s)		20.1			21.1			22.1			20.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.91		0.97	0.91		0.76
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5085		3433	5085		3610
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5085		3433	5085		3610
Volume (vph)	696	0	1281	1002	0	1376
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	757	0	1392	1089	0	1496
RTOR Reduction (vph)	0	0	0	0	0	45
Lane Group Flow (vph)	757	0	1392	1089	0	1451
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	13.7		28.3	50.0		28.3
Effective Green, g (s)	13.7		28.3	50.0		28.3
Actuated g/C Ratio	0.27		0.57	1.00		0.57
Clearance Time (s)	4.0		4.0	3.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	1393		1943	5085		2043
v/s Ratio Prot	c0.15		c0.41	0.21		0.40
v/s Ratio Perm						
v/c Ratio	0.54		0.72	0.21		0.71
Uniform Delay, d1	15.5		7.9	0.0		7.9
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.4		1.3	0.0		1.2
Delay (s)	15.9		9.2	0.0		9.1
Level of Service	B		A	A		A
Approach Delay (s)	15.9			5.2	9.1	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	3539	1583
Volume (vph)	6	1991	75	288	2181	183	79	102	406	157	135	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	2164	82	313	2371	199	86	111	441	171	147	26
RTOR Reduction (vph)	0	0	42	0	0	40	0	0	91	0	0	21
Lane Group Flow (vph)	7	2164	40	313	2371	159	86	111	350	171	147	5
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	42.2	42.2	9.0	50.4	50.4	4.0	17.8	17.8	5.0	18.8	18.8
Effective Green, g (s)	0.8	42.2	42.2	9.0	50.4	50.4	4.0	17.8	17.8	5.0	18.8	18.8
Actuated g/C Ratio	0.01	0.47	0.47	0.10	0.56	0.56	0.04	0.20	0.20	0.06	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	31	2384	742	343	2848	886	153	368	313	191	739	331
v/s Ratio Prot	0.00	c0.43		c0.09	0.47		0.03	0.06		c0.05	0.04	
v/s Ratio Perm			0.02			0.10			c0.22			0.00
v/c Ratio	0.23	0.91	0.05	0.91	0.83	0.18	0.56	0.30	1.12	0.90	0.20	0.02
Uniform Delay, d1	44.3	22.1	13.0	40.1	16.3	9.7	42.1	30.8	36.1	42.2	29.4	28.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	5.5	0.0	27.6	2.2	0.1	4.7	2.1	86.1	37.1	0.6	0.1
Delay (s)	48.0	27.6	13.0	67.7	18.5	9.8	46.8	32.9	122.2	79.4	30.0	28.4
Level of Service	D	C	B	E	B	A	D	C	F	E	C	C
Approach Delay (s)		27.1			23.3			96.5			54.4	
Approach LOS		C			C			F			D	

Intersection Summary			
HCM Average Control Delay	34.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	425	1995	151	101	1910	64	269	229	144	255	311	458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	462	2168	164	110	2076	70	292	249	157	277	338	498
RTOR Reduction (vph)	0	0	48	0	0	24	0	0	85	0	0	134
Lane Group Flow (vph)	462	2168	116	110	2076	46	292	249	72	277	338	364
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.0	48.0	48.0	5.0	40.0	52.0	9.0	19.0	19.0	12.0	22.0	22.0
Effective Green, g (s)	13.0	48.0	48.0	5.0	40.0	52.0	9.0	19.0	19.0	12.0	22.0	22.0
Actuated g/C Ratio	0.13	0.48	0.48	0.05	0.40	0.52	0.09	0.19	0.19	0.12	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	446	2441	760	172	2034	886	309	672	301	412	779	348
v/s Ratio Prot	c0.13	0.43		0.03	c0.41	0.01	c0.09	0.07		0.08	0.10	
v/s Ratio Perm			0.07			0.02			0.05			c0.23
v/c Ratio	1.04	0.89	0.15	0.64	1.02	0.05	0.94	0.37	0.24	0.67	0.43	1.05
Uniform Delay, d1	43.5	23.6	14.6	46.6	30.0	11.8	45.3	35.3	34.4	42.1	33.6	39.0
Progression Factor	1.00	1.00	1.00	0.71	1.62	2.80	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	52.2	4.4	0.1	5.3	22.0	0.0	36.5	1.6	1.9	4.3	1.8	60.6
Delay (s)	95.7	27.9	14.7	38.2	70.8	33.1	81.8	36.9	36.2	46.4	35.4	99.6
Level of Service	F	C	B	D	E	C	F	D	D	D	D	F
Approach Delay (s)		38.4			68.0			55.5			66.9	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	54.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Volume (vph)	19	2384	1	2	2058	50	0	1	0	50	0	18
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	2591	1	2	2237	54	0	1	0	54	0	20
RTOR Reduction (vph)	0	0	0	0	0	11	0	0	0	0	0	17
Lane Group Flow (vph)	21	2591	1	2	2237	43	0	1	0	54	0	3
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	2.7	63.9	63.9	1.2	62.4	62.4		15.2		3.7		13.4
Effective Green, g (s)	2.7	63.9	63.9	1.2	62.4	62.4		15.2		3.7		13.4
Actuated g/C Ratio	0.03	0.64	0.64	0.01	0.62	0.62		0.15		0.04		0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	93	3249	1012	41	3173	988		538		127		212
v/s Ratio Prot	c0.01	c0.51		0.00	0.44			0.00		c0.02		
v/s Ratio Perm			0.00			0.03						c0.00
v/c Ratio	0.23	0.80	0.00	0.05	0.71	0.04		0.00		0.43		0.01
Uniform Delay, d1	47.6	13.3	6.5	48.8	12.6	7.3		36.0		47.1		37.6
Progression Factor	0.66	2.31	1.78	1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2	0.7	0.8	0.0	0.5	0.7	0.0		0.0		2.3		0.0
Delay (s)	32.3	31.5	11.6	49.3	13.3	7.3		36.0		49.4		37.6
Level of Service	C	C	B	D	B	A		D		D		D
Approach Delay (s)		31.5			13.2			36.0			46.2	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	110	2168	438	248	1824	27	276	131	236	94	141	93
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	2357	476	270	1983	29	300	142	257	102	153	101
RTOR Reduction (vph)	0	0	155	0	0	8	0	0	86	0	0	83
Lane Group Flow (vph)	120	2357	321	270	1983	21	300	142	171	102	153	18
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	42.0	42.0	8.0	45.0	45.0	8.0	20.8	20.8	3.2	16.0	16.0
Effective Green, g (s)	5.0	42.0	42.0	8.0	45.0	45.0	8.0	20.8	20.8	3.2	16.0	16.0
Actuated g/C Ratio	0.06	0.47	0.47	0.09	0.50	0.50	0.09	0.23	0.23	0.04	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	191	2373	739	305	2543	792	305	818	366	122	629	281
v/s Ratio Prot	0.03	c0.46		c0.08	c0.39		c0.09	0.04		0.03	0.04	
v/s Ratio Perm			0.20			0.01			c0.11			0.01
v/c Ratio	0.63	0.99	0.43	0.89	0.78	0.03	0.98	0.17	0.47	0.84	0.24	0.06
Uniform Delay, d1	41.6	23.9	16.1	40.5	18.4	11.4	40.9	27.7	29.8	43.1	31.8	30.8
Progression Factor	1.00	1.00	1.00	0.92	1.08	1.66	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.3	16.8	0.4	16.9	1.0	0.0	46.7	0.5	4.2	36.6	0.9	0.4
Delay (s)	47.9	40.7	16.5	54.1	20.8	19.0	87.7	28.2	34.1	79.7	32.7	31.2
Level of Service	D	D	B	D	C	B	F	C	C	E	C	C
Approach Delay (s)		37.1			24.7			55.9			45.8	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	149	2294	225	198	1788	222	170	250	210	156	243	186
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	2493	245	215	1943	241	185	272	228	170	264	202
RTOR Reduction (vph)	0	0	32	0	0	41	0	0	99	0	0	4
Lane Group Flow (vph)	162	2493	213	215	1943	200	185	272	129	170	264	198
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.8	45.0	45.0	6.0	43.2	43.2	5.0	18.0	18.0	5.0	18.0	25.8
Effective Green, g (s)	7.8	45.0	45.0	6.0	43.2	43.2	5.0	18.0	18.0	5.0	18.0	25.8
Actuated g/C Ratio	0.09	0.50	0.50	0.07	0.48	0.48	0.06	0.20	0.20	0.06	0.20	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	298	2543	792	229	2441	760	191	708	317	191	708	524
v/s Ratio Prot	0.05	c0.49		c0.06	0.38		c0.05	0.08		0.05	0.07	c0.03
v/s Ratio Perm			0.13			0.13			0.08			0.09
v/c Ratio	0.54	0.98	0.27	0.94	0.80	0.26	0.97	0.38	0.41	0.89	0.37	0.38
Uniform Delay, d1	39.4	22.1	13.0	41.8	19.7	13.9	42.4	31.2	31.3	42.2	31.1	25.7
Progression Factor	1.36	0.26	0.16	0.66	1.93	2.46	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	8.0	0.1	28.7	1.0	0.1	55.3	1.6	3.8	36.3	1.5	0.5
Delay (s)	54.3	13.7	2.2	56.1	39.1	34.4	97.8	32.8	35.2	78.5	32.6	26.1
Level of Service	D	B	A	E	D	C	F	C	D	E	C	C
Approach Delay (s)		15.0			40.1			51.1			42.8	
Approach LOS		B			D			D			D	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	5085	1583
Volume (vph)	55	2420	185	18	2096	180	96	227	133	167	264	46
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	2630	201	20	2278	196	104	247	145	182	287	50
RTOR Reduction (vph)	0	0	70	0	0	60	0	0	66	0	0	41
Lane Group Flow (vph)	60	2630	131	20	2278	136	104	247	79	182	287	9
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	51.1	51.1	1.6	49.5	49.5	4.4	15.4	15.4	5.9	16.9	16.9
Effective Green, g (s)	3.2	51.1	51.1	1.6	49.5	49.5	4.4	15.4	15.4	5.9	16.9	16.9
Actuated g/C Ratio	0.04	0.57	0.57	0.02	0.55	0.55	0.05	0.17	0.17	0.07	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	122	2887	899	61	2797	871	168	606	271	225	955	297
v/s Ratio Prot	c0.02	c0.52		0.01	0.45		0.03	c0.07		c0.05	0.06	
v/s Ratio Perm			0.08			0.09			0.05			0.01
v/c Ratio	0.49	0.91	0.15	0.33	0.81	0.16	0.62	0.41	0.29	0.81	0.30	0.03
Uniform Delay, d1	42.6	17.4	9.2	43.7	16.5	10.0	42.0	33.2	32.5	41.5	31.5	29.9
Progression Factor	0.82	1.75	3.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	1.8	0.0	3.1	1.9	0.1	6.6	2.0	2.7	18.9	0.8	0.2
Delay (s)	35.9	32.2	27.9	46.8	18.4	10.1	48.6	35.3	35.2	60.4	32.3	30.1
Level of Service	D	C	C	D	B	B	D	D	D	E	C	C
Approach Delay (s)		32.0			18.0			38.1			41.9	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	27.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	718	1830	220	134	1477	319	147	1136	193	150	1230	610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	780	1989	239	146	1605	347	160	1235	210	163	1337	663
RTOR Reduction (vph)	0	0	82	0	0	79	0	0	93	0	0	2
Lane Group Flow (vph)	780	1989	157	146	1605	268	160	1235	118	163	1337	661
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	22.0	47.0	47.0	6.0	31.0	31.0	5.0	26.0	26.0	5.0	26.0	48.0
Effective Green, g (s)	22.0	47.0	47.0	6.0	31.0	31.0	5.0	26.0	26.0	5.0	26.0	48.0
Actuated g/C Ratio	0.22	0.47	0.47	0.06	0.31	0.31	0.05	0.26	0.26	0.05	0.26	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	755	2390	744	206	1576	491	172	1322	412	172	1322	823
v/s Ratio Prot	c0.23	0.39		0.04	c0.32		0.05	0.24		c0.05	c0.26	c0.18
v/s Ratio Perm			0.10			0.17			0.07			0.24
v/c Ratio	1.03	0.83	0.21	0.71	1.02	0.55	0.93	0.93	0.29	0.95	1.01	0.80
Uniform Delay, d1	39.0	23.1	15.6	46.1	34.5	28.6	47.3	36.2	29.6	47.4	37.0	22.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	41.6	2.6	0.1	10.6	27.4	1.2	48.6	13.3	1.7	52.8	27.6	5.7
Delay (s)	80.6	25.7	15.7	56.8	61.9	29.9	95.9	49.5	31.3	100.2	64.6	27.7
Level of Service	F	C	B	E	E	C	F	D	C	F	E	C
Approach Delay (s)		39.1			56.2			51.7			56.0	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM Average Control Delay	49.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	331	1539	120	176	1758	343	74	559	155	248	654	109
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	360	1673	130	191	1911	373	80	608	168	270	711	118
RTOR Reduction (vph)	0	0	71	0	0	120	0	0	127	0	0	89
Lane Group Flow (vph)	360	1673	59	191	1911	253	80	608	41	270	711	30
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.0	34.0	34.0	6.0	31.0	31.0	4.0	17.0	17.0	7.0	20.0	20.0
Effective Green, g (s)	9.0	34.0	34.0	6.0	31.0	31.0	4.0	17.0	17.0	7.0	20.0	20.0
Actuated g/C Ratio	0.11	0.42	0.42	0.08	0.39	0.39	0.05	0.21	0.21	0.09	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	386	2161	673	257	1970	613	172	1081	336	300	1271	396
v/s Ratio Prot	c0.10	c0.33		0.06	c0.38		0.02	0.12		c0.08	c0.14	
v/s Ratio Perm			0.04			0.16			0.03			0.02
v/c Ratio	0.93	0.77	0.09	0.74	0.97	0.41	0.47	0.56	0.12	0.90	0.56	0.07
Uniform Delay, d1	35.2	19.7	13.7	36.2	24.0	17.9	37.0	28.2	25.5	36.2	26.2	22.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.2	1.8	0.1	11.0	13.9	0.5	2.0	2.1	0.7	28.0	1.8	0.4
Delay (s)	64.4	21.5	13.8	47.3	37.9	18.3	38.9	30.3	26.2	64.1	27.9	23.3
Level of Service	E	C	B	D	D	B	D	C	C	E	C	C
Approach Delay (s)		28.2			35.7			30.3			36.3	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM Average Control Delay	32.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			3433	1583
Volume (vph)	572	94	0	0	220	281
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	622	102	0	0	239	305
RTOR Reduction (vph)	0	73	0	0	0	68
Lane Group Flow (vph)	622	29	0	0	239	237
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	11.3	11.3			20.7	20.7
Effective Green, g (s)	11.3	11.3			20.7	20.7
Actuated g/C Ratio	0.28	0.28			0.52	0.52
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1000	447			1777	819
v/s Ratio Prot	c0.18				0.07	
v/s Ratio Perm		0.02				c0.15
v/c Ratio	0.62	0.06			0.13	0.29
Uniform Delay, d1	12.5	10.5			5.0	5.5
Progression Factor	1.62	3.03			1.00	1.00
Incremental Delay, d2	1.2	0.1			0.2	0.9
Delay (s)	21.4	31.8			5.2	6.4
Level of Service	C	C			A	A
Approach Delay (s)	22.8			0.0	5.8	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1631		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1631		1770	1863	1583
Volume (vph)	38	167	2	297	314	68	106	23	112	4	30	356
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	182	2	323	341	74	115	25	122	4	33	387
RTOR Reduction (vph)	0	0	2	0	0	44	0	92	0	0	0	310
Lane Group Flow (vph)	41	182	0	323	341	30	115	55	0	4	33	77
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6						8
Actuated Green, G (s)	1.7	10.6	10.6	12.6	21.5	21.5	3.0	12.8		0.6	10.4	10.4
Effective Green, g (s)	1.7	10.6	10.6	12.6	21.5	21.5	3.0	12.8		0.6	10.4	10.4
Actuated g/C Ratio	0.03	0.20	0.20	0.24	0.41	0.41	0.06	0.24		0.01	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	57	713	319	424	1447	647	196	397		20	368	313
v/s Ratio Prot	0.02	0.05		c0.18	c0.10		c0.03	0.03		0.00	0.02	
v/s Ratio Perm			0.00			0.02						c0.05
v/c Ratio	0.72	0.26	0.00	0.76	0.24	0.05	0.59	0.14		0.20	0.09	0.24
Uniform Delay, d1	25.2	17.7	16.8	18.6	10.2	9.4	24.2	15.6		25.8	17.2	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	35.1	0.2	0.0	7.9	0.1	0.0	4.4	0.2		4.9	0.1	0.4
Delay (s)	60.3	17.9	16.8	26.5	10.3	9.4	28.6	15.7		30.6	17.3	18.2
Level of Service	E	B	B	C	B	A	C	B		C	B	B
Approach Delay (s)		25.6			17.3			21.4			18.2	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	52.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	261	253	250	279	151	268
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	284	275	272	303	164	291

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1
Volume Total (vph)	284	275	272	303	455
Volume Left (vph)	284	0	0	0	164
Volume Right (vph)	0	275	0	303	0
Hadj (s)	0.53	-0.67	0.03	-0.67	0.11
Departure Headway (s)	7.9	6.6	7.2	6.5	6.9
Degree Utilization, x	0.62	0.51	0.54	0.54	0.87
Capacity (veh/h)	441	526	479	542	510
Control Delay (s)	21.6	15.0	17.2	15.7	40.7
Approach Delay (s)	18.4		16.4		40.7
Approach LOS	C		C		E

Intersection Summary			
Delay	24.1		
HCM Level of Service	C		
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1583	1770	5085	5085	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1770	1583	1770	5085	5085	
Volume (vph)	20	364	321	1376	1281	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	396	349	1496	1392	0
RTOR Reduction (vph)	0	335	0	0	0	0
Lane Group Flow (vph)	22	61	349	1496	1392	0
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	8.1	8.1	12.8	36.2	19.4	
Effective Green, g (s)	8.1	8.1	12.8	36.2	19.4	
Actuated g/C Ratio	0.15	0.15	0.24	0.69	0.37	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	274	245	433	3520	1886	
v/s Ratio Prot	0.01		c0.20	0.29	c0.27	
v/s Ratio Perm		c0.04				
v/c Ratio	0.08	0.25	0.81	0.42	0.74	
Uniform Delay, d1	18.9	19.4	18.6	3.5	14.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.5	10.5	0.4	2.6	
Delay (s)	19.0	20.0	29.1	3.9	16.9	
Level of Service	B	B	C	A	B	
Approach Delay (s)	19.9			8.7	16.9	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	52.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	81	144	395	267	187	58	486	1835	441	115	1651	194
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	157	429	290	203	63	528	1995	479	125	1795	211
RTOR Reduction (vph)	0	0	197	0	0	49	0	0	42	0	0	90
Lane Group Flow (vph)	88	157	232	290	203	14	528	1995	437	125	1795	121
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.9	15.5	15.5	8.0	19.6	19.6	15.0	45.0	45.0	5.0	35.0	35.0
Effective Green, g (s)	3.9	15.5	15.5	8.0	19.6	19.6	15.0	45.0	45.0	5.0	35.0	35.0
Actuated g/C Ratio	0.04	0.17	0.17	0.09	0.22	0.22	0.17	0.50	0.50	0.06	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	150	613	274	307	775	347	575	2557	796	192	1989	619
v/s Ratio Prot	0.03	0.04		c0.08	0.06		c0.15	0.39		0.04	c0.35	
v/s Ratio Perm			c0.15			0.01			0.28			0.08
v/c Ratio	0.59	0.26	0.85	0.94	0.26	0.04	0.92	0.78	0.55	0.65	0.90	0.20
Uniform Delay, d1	42.0	32.0	35.9	40.5	29.0	27.5	36.6	18.2	15.3	41.4	25.6	18.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.7	0.2	20.8	36.6	0.2	0.0	19.6	2.4	2.7	7.7	7.2	0.7
Delay (s)	47.8	32.2	56.7	77.1	29.1	27.6	56.3	20.6	18.0	49.1	32.8	18.7
Level of Service	D	C	E	E	C	C	E	C	B	D	C	B
Approach Delay (s)		49.8			54.0			26.5			32.4	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	33.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.59	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.75	1.00	1.00
Satd. Flow (perm)	1096	3539	1583	1770	3539	1583	1770	1863	1583	1394	1863	1583
Volume (vph)	78	377	625	60	244	9	81	13	16	50	67	178
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	410	679	65	265	10	88	14	17	54	73	193
RTOR Reduction (vph)	0	0	375	0	0	6	0	0	12	0	0	142
Lane Group Flow (vph)	85	410	304	65	265	4	88	14	5	54	73	51
Turn Type	Perm		Perm	Prot		custom	Prot		custom	Perm		Perm
Protected Phases		4!		8!			2!				6!	
Permitted Phases	4		4		8	8		2	2	6		6
Actuated Green, G (s)	12.5	12.5	12.5	12.5	12.5	12.5	7.4	7.4	7.4	7.4	7.4	7.4
Effective Green, g (s)	12.5	12.5	12.5	12.5	12.5	12.5	7.4	7.4	7.4	7.4	7.4	7.4
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45	0.27	0.27	0.27	0.27	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	491	1586	709	793	1586	709	469	494	420	370	494	420
v/s Ratio Prot		0.12		0.04			c0.05				0.04	
v/s Ratio Perm	0.08		c0.19		0.07	0.00		0.01	0.00	0.04		0.03
v/c Ratio	0.17	0.26	0.43	0.08	0.17	0.01	0.19	0.03	0.01	0.15	0.15	0.12
Uniform Delay, d1	4.6	4.8	5.3	4.4	4.6	4.3	7.9	7.6	7.6	7.8	7.8	7.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.4	0.0	0.1	0.0	0.2	0.0	0.0	0.2	0.1	0.1
Delay (s)	4.8	4.9	5.7	4.5	4.6	4.3	8.1	7.6	7.6	8.0	8.0	7.9
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		5.3			4.6			8.0			7.9	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	27.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1755		1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.61	1.00		0.59	1.00	1.00	0.70	1.00	1.00	0.63	1.00	1.00
Satd. Flow (perm)	1144	1755		1094	1863	1583	1305	1863	1583	1167	1863	1583
Volume (vph)	85	159	99	18	213	102	123	193	17	96	80	186
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	173	108	20	232	111	134	210	18	104	87	202
RTOR Reduction (vph)	0	68	0	0	0	80	0	0	10	0	0	116
Lane Group Flow (vph)	92	213	0	20	232	31	134	210	8	104	87	86
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		6
Actuated Green, G (s)	7.4	7.4		7.4	7.4	7.4	11.5	11.5	11.5	11.5	11.5	11.5
Effective Green, g (s)	7.4	7.4		7.4	7.4	7.4	11.5	11.5	11.5	11.5	11.5	11.5
Actuated g/C Ratio	0.28	0.28		0.28	0.28	0.28	0.43	0.43	0.43	0.43	0.43	0.43
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	315	483		301	512	435	558	796	677	499	796	677
v/s Ratio Prot		0.12			c0.12			c0.11			0.05	
v/s Ratio Perm	0.08			0.02		0.02	0.10		0.00	0.09		0.05
v/c Ratio	0.29	0.44		0.07	0.45	0.07	0.24	0.26	0.01	0.21	0.11	0.13
Uniform Delay, d1	7.7	8.0		7.2	8.1	7.2	4.9	5.0	4.4	4.8	4.6	4.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.6		0.1	0.6	0.1	0.2	0.2	0.0	0.2	0.1	0.1
Delay (s)	8.2	8.7		7.3	8.7	7.3	5.1	5.1	4.4	5.0	4.7	4.7
Level of Service	A	A		A	A	A	A	A	A	A	A	A
Approach Delay (s)		8.6			8.2			5.1			4.8	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	26.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86		0.95	0.95		0.95	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.97	
Satd. Flow (prot)	1770	5085	1583	1770	6407		1681	1504		1681	1636	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.81	
Satd. Flow (perm)	1770	5085	1583	1770	6407		1681	1504		1681	1373	
Volume (vph)	27	1978	423	74	2147	3	1	0	16	266	0	43
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	2150	460	80	2334	3	1	0	17	289	0	47
RTOR Reduction (vph)	0	0	230	0	0	0	0	16	0	0	12	0
Lane Group Flow (vph)	29	2150	230	80	2337	0	1	1	0	170	154	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	2.0	44.9	44.9	5.0	47.9		0.7	3.7		20.8	27.8	
Effective Green, g (s)	2.0	44.9	44.9	5.0	47.9		0.7	3.7		20.8	27.8	
Actuated g/C Ratio	0.02	0.50	0.50	0.06	0.53		0.01	0.04		0.23	0.31	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	39	2545	792	99	3421		13	62		390	487	
v/s Ratio Prot	0.02	c0.42		c0.05	c0.36		0.00	0.00		c0.10	0.07	
v/s Ratio Perm			0.15					0.00			c0.02	
v/c Ratio	0.74	0.84	0.29	0.81	0.68		0.08	0.01		0.44	0.32	
Uniform Delay, d1	43.6	19.4	13.1	41.9	15.3		44.2	41.2		29.4	23.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	54.3	3.7	0.9	36.6	1.1		2.5	0.1		0.8	0.4	
Delay (s)	97.9	23.0	14.0	78.4	16.5		46.7	41.3		30.2	24.0	
Level of Service	F	C	B	E	B		D	D		C	C	
Approach Delay (s)		22.3			18.5			41.6			27.2	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	89.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539		1770	1774	
Flt Permitted	0.74	1.00	1.00	0.75	1.00	1.00	0.73	1.00		0.70	1.00	
Satd. Flow (perm)	1386	1863	1583	1397	1863	1583	1357	3539		1296	1774	
Volume (vph)	142	11	8	1	18	180	7	83	0	56	28	13
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	154	12	9	1	20	196	8	90	0	61	30	14
RTOR Reduction (vph)	0	0	7	0	0	151	0	0	0	0	6	0
Lane Group Flow (vph)	154	12	2	1	20	45	8	90	0	61	38	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	8.0	8.0	8.0	8.0	8.0	8.0	18.6	18.6		18.6	18.6	
Effective Green, g (s)	8.0	8.0	8.0	8.0	8.0	8.0	18.6	18.6		18.6	18.6	
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23	0.23	0.54	0.54		0.54	0.54	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	320	431	366	323	431	366	729	1902		697	954	
v/s Ratio Prot		0.01			0.01			0.03			0.02	
v/s Ratio Perm	c0.11		0.00	0.00		0.03	0.01			c0.05		
v/c Ratio	0.48	0.03	0.01	0.00	0.05	0.12	0.01	0.05		0.09	0.04	
Uniform Delay, d1	11.5	10.3	10.2	10.2	10.3	10.5	3.7	3.8		3.9	3.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0		0.1	0.0	
Delay (s)	12.6	10.3	10.2	10.2	10.4	10.7	3.7	3.8		3.9	3.8	
Level of Service	B	B	B	B	B	B	A	A		A	A	
Approach Delay (s)		12.4			10.6			3.8			3.9	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	34.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0				4.0		4.0
Lane Util. Factor		0.91			0.86	1.00				0.97		0.88
Frt		1.00			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085			6408	1583				3433		2787
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085			6408	1583				3433		2787
Volume (vph)	0	2355	0	0	2345	130	0	0	0	260	0	1017
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2560	0	0	2549	141	0	0	0	283	0	1105
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	2560	0	0	2549	141	0	0	0	283	0	1104
Turn Type						Free				custom		custom
Protected Phases		2			6							
Permitted Phases						Free				8		8
Actuated Green, G (s)		41.0			41.0	80.0				31.0		31.0
Effective Green, g (s)		41.0			41.0	80.0				31.0		31.0
Actuated g/C Ratio		0.51			0.51	1.00				0.39		0.39
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		2606			3284	1583				1330		1080
v/s Ratio Prot		c0.50			0.40							
v/s Ratio Perm						0.09				0.08		c0.40
v/c Ratio		0.98			0.78	0.09				0.21		1.02
Uniform Delay, d1		19.1			15.8	0.0				16.4		24.5
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		13.9			1.9	0.1				0.1		33.1
Delay (s)		33.1			17.7	0.1				16.4		57.6
Level of Service		C			B	A				B		E
Approach Delay (s)		33.1			16.7			0.0			49.2	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	125.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0		4.0			
Lane Util. Factor		0.91	1.00		0.91		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		5085	1583		5085		1770		1583			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		5085	1583		5085		1770		1583			
Volume (vph)	0	2536	363	0	1437	0	174	0	95	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2757	395	0	1562	0	189	0	103	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	27	0	0	0
Lane Group Flow (vph)	0	2757	395	0	1562	0	189	0	76	0	0	0
Turn Type			Free				custom		custom			
Protected Phases		2			6							
Permitted Phases			Free				4		4			
Actuated Green, G (s)		43.5	62.1		43.5		10.6		10.6			
Effective Green, g (s)		43.5	62.1		43.5		10.6		10.6			
Actuated g/C Ratio		0.70	1.00		0.70		0.17		0.17			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		3562	1583		3562		302		270			
v/s Ratio Prot		c0.54			0.31							
v/s Ratio Perm			0.25				c0.11		0.05			
v/c Ratio		0.77	0.25		0.44		0.63		0.28			
Uniform Delay, d1		6.1	0.0		4.0		23.9		22.4			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		1.7	0.4		0.4		4.0		0.6			
Delay (s)		7.8	0.4		4.4		27.9		23.0			
Level of Service		A	A		A		C		C			
Approach Delay (s)		6.9			4.4			26.2			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM Average Control Delay	7.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	62.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	3433	1583
Volume (vph)	250	265	694	514	510	736
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	288	754	559	554	800
RTOR Reduction (vph)	0	244	0	0	0	618
Lane Group Flow (vph)	272	44	754	559	554	182
Turn Type		Perm	Prot			Perm
Protected Phases	6		5	2	4	
Permitted Phases		6				4
Actuated Green, G (s)	11.9	11.9	36.6	52.5	17.8	17.8
Effective Green, g (s)	11.9	11.9	36.6	52.5	17.8	17.8
Actuated g/C Ratio	0.15	0.15	0.47	0.67	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	538	241	827	2373	780	360
v/s Ratio Prot	c0.08		c0.43	0.16	c0.16	
v/s Ratio Perm		0.03				0.11
v/c Ratio	0.51	0.18	0.91	0.24	0.71	0.51
Uniform Delay, d1	30.5	29.0	19.4	5.0	27.9	26.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.4	14.2	0.1	3.1	1.1
Delay (s)	31.2	29.3	33.5	5.1	30.9	27.5
Level of Service	C	C	C	A	C	C
Approach Delay (s)	30.3			21.4	28.9	
Approach LOS	C			C	C	

Intersection Summary			
HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00		0.95	0.95	1.00
Frt	1.00	0.96		1.00	1.00	0.85		0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97		0.95	0.96	1.00
Satd. Flow (prot)	1770	3389		1770	3539	1583		1774		1681	1696	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97		0.95	0.96	1.00
Satd. Flow (perm)	1770	3389		1770	3539	1583		1774		1681	1696	1583
Volume (vph)	684	255	100	49	299	571	59	17	9	534	40	375
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	743	277	109	53	325	621	64	18	10	580	43	408
RTOR Reduction (vph)	0	33	0	0	0	392	0	4	0	0	0	317
Lane Group Flow (vph)	743	353	0	53	325	229	0	88	0	303	320	91
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	48.0	59.1		6.9	18.0	18.0		11.2		26.8	26.8	26.8
Effective Green, g (s)	48.0	59.1		6.9	18.0	18.0		11.2		26.8	26.8	26.8
Actuated g/C Ratio	0.40	0.49		0.06	0.15	0.15		0.09		0.22	0.22	0.22
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	708	1669		102	531	237		166		375	379	354
v/s Ratio Prot	c0.42	0.10		0.03	0.09			c0.05		0.18	c0.19	
v/s Ratio Perm						c0.14						0.06
v/c Ratio	1.05	0.21		0.52	0.61	0.97		0.53		0.81	0.84	0.26
Uniform Delay, d1	36.0	17.2		54.9	47.7	50.7		51.9		44.2	44.6	38.4
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	47.5	0.3		4.4	5.2	50.5		3.3		12.1	15.7	0.4
Delay (s)	83.5	17.5		59.4	52.9	101.2		55.2		56.2	60.3	38.8
Level of Service	F	B		E	D	F		E		E	E	D
Approach Delay (s)		61.0			83.3			55.2			50.6	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM Average Control Delay	64.4	HCM Level of Service	E
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	1863	1583
Flt Permitted	0.29	1.00	1.00	0.29	1.00	1.00	0.75	1.00	1.00	0.75	1.00	1.00
Satd. Flow (perm)	548	3539	1583	548	3539	1583	1394	3539	1583	1396	1863	1583
Volume (vph)	18	875	36	25	890	32	166	11	18	101	13	47
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	951	39	27	967	35	180	12	20	110	14	51
RTOR Reduction (vph)	0	0	22	0	0	20	0	0	14	0	0	29
Lane Group Flow (vph)	20	951	17	27	967	15	180	12	6	110	14	22
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	13.6	13.6	13.6	13.6	13.6	13.6	9.4	9.4	9.4	9.4	9.4	9.4
Effective Green, g (s)	13.6	13.6	13.6	13.6	13.6	13.6	9.4	9.4	9.4	9.4	9.4	9.4
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.44	0.44	0.30	0.30	0.30	0.30	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	240	1553	694	240	1553	694	423	1073	480	423	565	480
v/s Ratio Prot		0.27			c0.27			0.00			0.01	
v/s Ratio Perm	0.04		0.01	0.05		0.01	c0.13		0.00	0.08		0.01
v/c Ratio	0.08	0.61	0.02	0.11	0.62	0.02	0.43	0.01	0.01	0.26	0.02	0.05
Uniform Delay, d1	5.1	6.7	4.9	5.1	6.7	4.9	8.6	7.6	7.6	8.2	7.6	7.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.7	0.0	0.2	0.8	0.0	0.7	0.0	0.0	0.3	0.0	0.0
Delay (s)	5.2	7.4	5.0	5.3	7.5	4.9	9.3	7.6	7.6	8.5	7.6	7.7
Level of Service	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s)		7.3			7.4			9.1			8.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	31.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3488		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3488		1770	3539	1583	1770	3539	1583
Volume (vph)	279	1275	84	269	687	73	69	689	231	68	593	243
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	303	1386	91	292	747	79	75	749	251	74	645	264
RTOR Reduction (vph)	0	0	55	0	9	0	0	0	195	0	0	205
Lane Group Flow (vph)	303	1386	36	292	817	0	75	749	56	74	645	59
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	12.0	35.0	35.0	15.0	38.0		4.0	20.0	20.0	4.0	20.0	20.0
Effective Green, g (s)	12.0	35.0	35.0	15.0	38.0		4.0	20.0	20.0	4.0	20.0	20.0
Actuated g/C Ratio	0.13	0.39	0.39	0.17	0.42		0.04	0.22	0.22	0.04	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	458	1376	616	295	1473		79	786	352	79	786	352
v/s Ratio Prot	0.09	c0.39		c0.17	c0.23		c0.04	c0.21		0.04	0.18	
v/s Ratio Perm			0.02						0.04			0.04
v/c Ratio	0.66	1.01	0.06	0.99	0.55		0.95	0.95	0.16	0.94	0.82	0.17
Uniform Delay, d1	37.1	27.5	17.2	37.4	19.6		42.9	34.5	28.2	42.9	33.3	28.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	26.0	0.0	49.1	0.5		83.1	21.3	0.2	79.2	6.9	0.2
Delay (s)	40.6	53.5	17.2	86.5	20.1		126.0	55.8	28.4	122.1	40.2	28.5
Level of Service	D	D	B	F	C		F	E	C	F	D	C
Approach Delay (s)		49.5			37.4			54.3			43.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	46.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	1863	2787	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	1770	1863	2787	1770	5085	1583	3433	5085	1583
Volume (vph)	307	119	10	54	116	838	13	1754	99	339	1001	192
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	334	129	11	59	126	911	14	1907	108	368	1088	209
RTOR Reduction (vph)	0	0	9	0	0	10	0	0	49	0	0	55
Lane Group Flow (vph)	334	129	2	59	126	901	14	1907	59	368	1088	154
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.6	21.2	21.2	6.7	13.3	36.4	1.5	49.9	49.9	23.1	71.5	86.1
Effective Green, g (s)	14.6	21.2	21.2	6.7	13.3	36.4	1.5	49.9	49.9	23.1	71.5	86.1
Actuated g/C Ratio	0.12	0.18	0.18	0.06	0.11	0.31	0.01	0.43	0.43	0.20	0.61	0.74
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	429	338	287	101	212	963	23	2171	676	678	3110	1220
v/s Ratio Prot	c0.10	0.07		0.03	0.07	c0.18	0.01	c0.38		0.11	0.21	0.02
v/s Ratio Perm			0.00			0.14			0.04			0.08
v/c Ratio	0.78	0.38	0.01	0.58	0.59	0.94	0.61	0.88	0.09	0.54	0.35	0.13
Uniform Delay, d1	49.6	42.1	39.2	53.7	49.2	39.1	57.4	30.7	19.9	42.2	11.2	4.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	0.7	0.0	8.3	4.4	15.6	38.0	4.4	0.1	0.9	0.1	0.0
Delay (s)	58.2	42.8	39.2	62.1	53.7	54.7	95.5	35.1	20.0	43.0	11.3	4.5
Level of Service	E	D	D	E	D	D	F	D	B	D	B	A
Approach Delay (s)		53.6			55.0			34.7			17.5	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	116.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.99			1.00			1.00	0.85		1.00	0.85
Flt Protected		1.00			1.00			0.99	1.00		0.99	1.00
Satd. Flow (prot)		1837			1853			1844	1583		1852	1583
Flt Permitted		0.99			0.99			0.95	1.00		0.97	1.00
Satd. Flow (perm)		1814			1833			1771	1583		1812	1583
Volume (vph)	14	260	26	3	95	3	18	74	4	2	15	8
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	283	28	3	103	3	20	80	4	2	16	9
RTOR Reduction (vph)	0	9	0	0	2	0	0	0	3	0	0	6
Lane Group Flow (vph)	0	317	0	0	107	0	0	100	1	0	18	3
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		9.8			9.8			9.3	9.3		9.3	9.3
Effective Green, g (s)		9.8			9.8			9.3	9.3		9.3	9.3
Actuated g/C Ratio		0.36			0.36			0.34	0.34		0.34	0.34
Clearance Time (s)		4.0			4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		656			663			608	543		622	543
v/s Ratio Prot												
v/s Ratio Perm		c0.17			0.06			c0.06	0.00		0.01	0.00
v/c Ratio		0.48			0.16			0.16	0.00		0.03	0.01
Uniform Delay, d1		6.7			5.9			6.2	5.9		5.9	5.9
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		0.6			0.1			0.1	0.0		0.0	0.0
Delay (s)		7.3			6.0			6.3	5.9		5.9	5.9
Level of Service		A			A			A	A		A	A
Approach Delay (s)		7.3			6.0			6.3			5.9	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	27.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0				4.0		4.0
Lane Util. Factor		0.91	1.00		0.91	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085	1583		5085	1583				1770		1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085	1583		5085	1583				1770		1583
Volume (vph)	0	1766	514	0	1518	6	0	0	0	419	0	258
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1920	559	0	1650	7	0	0	0	455	0	280
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	5
Lane Group Flow (vph)	0	1920	559	0	1650	7	0	0	0	455	0	275
Turn Type			Free			Free				custom		custom
Protected Phases		4			8							
Permitted Phases			Free			Free				6		6
Actuated Green, G (s)		24.1	50.0		24.1	50.0				17.9		17.9
Effective Green, g (s)		24.1	50.0		24.1	50.0				17.9		17.9
Actuated g/C Ratio		0.48	1.00		0.48	1.00				0.36		0.36
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		2451	1583		2451	1583				634		567
v/s Ratio Prot		c0.38			0.32							
v/s Ratio Perm			0.35			0.00				c0.26		0.17
v/c Ratio		0.78	0.35		0.67	0.00				0.72		0.48
Uniform Delay, d1		10.8	0.0		9.9	0.0				13.9		12.5
Progression Factor		1.00	1.00		1.13	1.00				1.00		1.00
Incremental Delay, d2		1.7	0.6		0.1	0.0				6.8		2.9
Delay (s)		12.5	0.6		11.3	0.0				20.7		15.4
Level of Service		B	A		B	A				C		B
Approach Delay (s)		9.8			11.2			0.0			18.7	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0		4.0			
Lane Util. Factor		0.91	1.00		0.91	1.00	1.00		1.00			
Frt		1.00	0.85		1.00	0.85	1.00		0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (prot)		5085	1583		5085	1583	1770		1583			
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (perm)		5085	1583		5085	1583	1770		1583			
Volume (vph)	0	1621	109	0	1718	464	924	0	139	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1762	118	0	1867	504	1004	0	151	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1762	118	0	1867	504	1004	0	151	0	0	0
Turn Type			Free			Free	custom		custom			
Protected Phases		4			8							
Permitted Phases			Free			Free	2		2			
Actuated Green, G (s)		36.0	100.0		36.0	100.0	56.0		56.0			
Effective Green, g (s)		36.0	100.0		36.0	100.0	56.0		56.0			
Actuated g/C Ratio		0.36	1.00		0.36	1.00	0.56		0.56			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		1831	1583		1831	1583	991		886			
v/s Ratio Prot		0.35			c0.37							
v/s Ratio Perm			0.07			0.32	c0.57		0.10			
v/c Ratio		0.96	0.07		1.02	0.32	1.01		0.17			
Uniform Delay, d1		31.3	0.0		32.0	0.0	22.0		10.7			
Progression Factor		0.84	1.00		1.00	1.00	1.00		1.00			
Incremental Delay, d2		9.3	0.1		26.1	0.5	31.9		0.4			
Delay (s)		35.5	0.1		58.1	0.5	53.9		11.1			
Level of Service		D	A		E	A	D		B			
Approach Delay (s)		33.3			45.9			48.3			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM Average Control Delay	42.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	36	1551	67	322	1236	391	328	507	4	18	507	603
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1686	73	350	1343	425	357	551	4	20	551	655
RTOR Reduction (vph)	0	0	31	0	0	160	0	0	2	0	0	106
Lane Group Flow (vph)	39	1686	42	350	1343	265	357	551	2	20	551	549
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	2.4	37.6	37.6	11.0	46.2	46.2	11.0	43.8	43.8	1.6	34.4	34.4
Effective Green, g (s)	2.4	37.6	37.6	11.0	46.2	46.2	11.0	43.8	43.8	1.6	34.4	34.4
Actuated g/C Ratio	0.02	0.34	0.34	0.10	0.42	0.42	0.10	0.40	0.40	0.01	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	75	1738	541	343	2136	665	343	1409	630	50	1107	495
v/s Ratio Prot	0.01	c0.33		c0.10	0.26		c0.10	0.16		0.01	0.16	
v/s Ratio Perm			0.03			0.17			0.00			c0.35
v/c Ratio	0.52	0.97	0.08	1.02	0.63	0.40	1.04	0.39	0.00	0.40	0.50	1.11
Uniform Delay, d1	53.2	35.6	24.5	49.5	25.1	22.2	49.5	23.6	19.9	53.7	30.8	37.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.4	15.1	0.1	53.9	0.6	0.4	59.6	0.8	0.0	5.2	1.6	73.8
Delay (s)	59.6	50.7	24.5	103.4	25.7	22.6	109.1	24.4	19.9	58.9	32.4	111.6
Level of Service	E	D	C	F	C	C	F	C	B	E	C	F
Approach Delay (s)		49.9			37.9			57.5			75.1	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	52.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	96	1613	191	96	1549	36	210	206	61	125	640	139
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	1753	208	104	1684	39	228	224	66	136	696	151
RTOR Reduction (vph)	0	0	107	0	0	19	0	0	48	0	0	105
Lane Group Flow (vph)	104	1753	101	104	1684	20	228	224	18	136	696	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	24.5	24.5	3.2	24.5	24.5	5.1	17.3	17.3	4.0	16.2	16.2
Effective Green, g (s)	3.2	24.5	24.5	3.2	24.5	24.5	5.1	17.3	17.3	4.0	16.2	16.2
Actuated g/C Ratio	0.05	0.38	0.38	0.05	0.38	0.38	0.08	0.27	0.27	0.06	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	169	1917	597	169	1917	597	269	942	421	211	882	395
v/s Ratio Prot	c0.03	c0.34		0.03	0.33		c0.07	0.06		0.04	c0.20	
v/s Ratio Perm			0.06			0.01			0.01			0.03
v/c Ratio	0.62	0.91	0.17	0.62	0.88	0.03	0.85	0.24	0.04	0.64	0.79	0.12
Uniform Delay, d1	30.3	19.3	13.5	30.3	18.9	12.8	29.6	18.7	17.7	29.8	22.8	18.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	7.2	0.1	6.5	4.9	0.0	21.2	0.6	0.2	6.6	7.1	0.6
Delay (s)	36.8	26.5	13.6	36.8	23.8	12.8	50.7	19.3	17.9	36.4	29.9	19.5
Level of Service	D	C	B	D	C	B	D	B	B	D	C	B
Approach Delay (s)		25.7			24.3			32.9			29.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	359	1720	85	162	1294	36	199	514	165	249	483	515
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	390	1870	92	176	1407	39	216	559	179	271	525	560
RTOR Reduction (vph)	0	0	41	0	0	26	0	0	114	0	0	8
Lane Group Flow (vph)	390	1870	51	176	1407	13	216	559	65	271	525	552
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.6	30.0	30.0	5.0	23.4	23.4	7.0	17.0	17.0	7.0	17.0	28.6
Effective Green, g (s)	11.6	30.0	30.0	5.0	23.4	23.4	7.0	17.0	17.0	7.0	17.0	28.6
Actuated g/C Ratio	0.15	0.40	0.40	0.07	0.31	0.31	0.09	0.23	0.23	0.09	0.23	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	531	2034	633	229	1587	494	320	802	359	320	802	688
v/s Ratio Prot	0.11	c0.37		0.05	0.28		0.06	0.16		c0.08	0.15	c0.12
v/s Ratio Perm			0.03			0.01			0.04			0.22
v/c Ratio	0.73	0.92	0.08	0.77	0.89	0.03	0.68	0.70	0.18	0.85	0.65	0.80
Uniform Delay, d1	30.2	21.4	13.9	34.4	24.5	17.9	32.9	26.6	23.4	33.5	26.3	20.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	7.2	0.1	14.3	6.4	0.0	5.5	5.0	1.1	18.3	4.1	6.7
Delay (s)	35.5	28.6	14.0	48.7	30.9	17.9	38.4	31.6	24.5	51.8	30.5	27.4
Level of Service	D	C	B	D	C	B	D	C	C	D	C	C
Approach Delay (s)		29.1			32.5			31.8			33.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	88	1544	91	183	1409	111	197	567	188	166	418	100
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	1678	99	199	1532	121	214	616	204	180	454	109
RTOR Reduction (vph)	0	0	63	0	0	69	0	0	110	0	0	80
Lane Group Flow (vph)	96	1678	36	199	1532	52	214	616	94	180	454	29
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	22.8	22.8	4.0	23.6	23.6	5.0	17.2	17.2	5.0	17.2	17.2
Effective Green, g (s)	3.2	22.8	22.8	4.0	23.6	23.6	5.0	17.2	17.2	5.0	17.2	17.2
Actuated g/C Ratio	0.05	0.35	0.35	0.06	0.36	0.36	0.08	0.26	0.26	0.08	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	169	1784	555	211	1846	575	264	936	419	264	936	419
v/s Ratio Prot	0.03	c0.33		c0.06	0.30		c0.06	c0.17		0.05	0.13	
v/s Ratio Perm			0.02			0.03			0.06			0.02
v/c Ratio	0.57	0.94	0.06	0.94	0.83	0.09	0.81	0.66	0.23	0.68	0.49	0.07
Uniform Delay, d1	30.2	20.4	14.0	30.4	18.9	13.6	29.5	21.3	18.7	29.2	20.2	17.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.3	10.4	0.0	45.8	3.2	0.1	16.9	3.6	1.2	7.1	1.8	0.3
Delay (s)	34.6	30.8	14.1	76.2	22.1	13.7	46.5	24.9	19.9	36.3	22.0	18.2
Level of Service	C	C	B	E	C	B	D	C	B	D	C	B
Approach Delay (s)		30.1			27.4			28.4			24.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.91	1.00	1.00	0.91		1.00		1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.90	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		5085	1583	1770	5085		1770		1583	3433	3202	
Flt Permitted		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		5085	1583	1770	5085		1770		1583	3433	3202	
Volume (vph)	0	1498	34	90	567	0	55	0	459	242	76	133
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1628	37	98	616	0	60	0	499	263	83	145
RTOR Reduction (vph)	0	0	14	0	0	0	0	0	123	0	96	0
Lane Group Flow (vph)	0	1628	23	98	616	0	60	0	376	263	132	0
Turn Type			Perm	Prot			Prot		custom	Prot		
Protected Phases		4		3	8		5			1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		27.7	27.7	4.8	36.5		4.2		21.6	9.9	27.3	
Effective Green, g (s)		27.7	27.7	4.8	36.5		4.2		21.6	9.9	27.3	
Actuated g/C Ratio		0.35	0.35	0.06	0.46		0.05		0.27	0.12	0.34	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1761	548	106	2320		93		427	425	1093	
v/s Ratio Prot		c0.32		c0.06	0.12		0.03			c0.08	0.04	
v/s Ratio Perm			0.01						c0.24			
v/c Ratio		0.92	0.04	0.92	0.27		0.65		0.88	0.62	0.12	
Uniform Delay, d1		25.1	17.4	37.4	13.5		37.2		28.0	33.3	18.1	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		8.7	0.0	63.3	0.1		14.3		22.1	2.7	0.2	
Delay (s)		33.8	17.4	100.7	13.5		51.5		50.1	35.9	18.3	
Level of Service		C	B	F	B		D		D	D	B	
Approach Delay (s)		33.5			25.5			50.3			27.8	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	33.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.91			0.91	1.00	0.95	0.95	0.88	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	3433	5085			5085	1583	1681	1760	2787	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.59		1.00
Satd. Flow (perm)	3433	5085			5085	1583	1681	1760	2787	2130		1583
Volume (vph)	342	1145	0	0	598	274	256	216	438	238	0	275
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	372	1245	0	0	650	298	278	235	476	259	0	299
RTOR Reduction (vph)	0	0	0	0	0	237	0	0	147	0	0	213
Lane Group Flow (vph)	372	1245	0	0	650	61	250	263	329	259	0	86
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	6.0	24.4			14.4	14.4	17.6	17.6	17.6	16.0		16.0
Effective Green, g (s)	6.0	24.4			14.4	14.4	17.6	17.6	17.6	16.0		16.0
Actuated g/C Ratio	0.09	0.35			0.21	0.21	0.25	0.25	0.25	0.23		0.23
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	294	1772			1046	326	423	443	701	487		362
v/s Ratio Prot	c0.11	c0.24			0.13		0.15	c0.15				
v/s Ratio Perm						0.04			0.12	c0.12		0.05
v/c Ratio	1.27	0.70			0.62	0.19	0.59	0.59	0.47	0.53		0.24
Uniform Delay, d1	32.0	19.7			25.3	23.0	23.0	23.1	22.2	23.7		22.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	143.7	1.3			1.2	0.3	6.0	5.8	2.3	4.1		1.5
Delay (s)	175.7	21.0			26.5	23.3	29.0	28.8	24.5	27.8		23.6
Level of Service	F	C			C	C	C	C	C	C		C
Approach Delay (s)		56.5			25.5			26.8			25.5	
Approach LOS		E			C			C			C	

Intersection Summary			
HCM Average Control Delay	38.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	3433	1583
Flt Permitted	0.75	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1392	3539	3539	1583	3433	1583
Volume (vph)	84	34	14	242	1805	229
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	37	15	263	1962	249
RTOR Reduction (vph)	0	0	0	221	0	73
Lane Group Flow (vph)	91	37	15	42	1962	176
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)	9.5	9.5	9.5	9.5	42.5	42.5
Effective Green, g (s)	9.5	9.5	9.5	9.5	42.5	42.5
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.71	0.71
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	220	560	560	251	2432	1121
v/s Ratio Prot		0.01	0.00			
v/s Ratio Perm	c0.07			0.03	c0.57	0.11
v/c Ratio	0.41	0.07	0.03	0.17	0.81	0.16
Uniform Delay, d1	22.7	21.5	21.3	21.8	6.0	2.9
Progression Factor	1.00	1.00	1.00	1.00	1.14	1.60
Incremental Delay, d2	5.7	0.2	0.1	1.4	0.2	0.0
Delay (s)	28.4	21.7	21.4	23.2	7.0	4.6
Level of Service	C	C	C	C	A	A
Approach Delay (s)		26.5	23.1		6.7	
Approach LOS		C	C		A	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Volume (vph)	13	1391	324	0	0	2095
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	1512	352	0	0	2277
RTOR Reduction (vph)	0	830	0	0	0	0
Lane Group Flow (vph)	14	682	352	0	0	2277
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	24.0	24.0	88.0			88.0
Effective Green, g (s)	24.0	24.0	88.0			88.0
Actuated g/C Ratio	0.20	0.20	0.73			0.73
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	354	557	1366			1366
v/s Ratio Prot	0.01		0.19			c1.22
v/s Ratio Perm		c0.24				
v/c Ratio	0.04	1.22	0.26			1.67
Uniform Delay, d1	38.7	48.0	5.3			16.0
Progression Factor	1.00	1.00	0.66			1.00
Incremental Delay, d2	0.2	116.0	0.1			303.4
Delay (s)	38.9	164.0	3.5			319.4
Level of Service	D	F	A			F
Approach Delay (s)	162.9		3.5			319.4
Approach LOS	F		A			F

Intersection Summary			
HCM Average Control Delay	235.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	120.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95		0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3177		3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3177		3433	5085	1583	1770	3539	1583
Volume (vph)	530	213	128	570	197	421	40	1159	484	392	1387	410
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	576	232	139	620	214	458	43	1260	526	426	1508	446
RTOR Reduction (vph)	0	0	70	0	360	0	0	0	172	0	0	204
Lane Group Flow (vph)	576	232	69	620	312	0	43	1260	354	426	1508	242
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	17.0	13.0	13.0	18.0	14.0		2.4	26.3	26.3	26.7	50.6	50.6
Effective Green, g (s)	17.0	13.0	13.0	18.0	14.0		2.4	26.3	26.3	26.7	50.6	50.6
Actuated g/C Ratio	0.17	0.13	0.13	0.18	0.14		0.02	0.26	0.26	0.27	0.51	0.51
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	584	460	206	618	445		82	1337	416	473	1791	801
v/s Ratio Prot	0.17	0.07		c0.18	c0.10		0.01	c0.25		c0.24	0.43	
v/s Ratio Perm			0.04						0.22			0.15
v/c Ratio	0.99	0.50	0.34	1.00	0.70		0.52	0.94	0.85	0.90	0.84	0.30
Uniform Delay, d1	41.4	40.5	39.6	41.0	41.0		48.2	36.1	35.0	35.4	21.3	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	33.4	0.9	1.0	37.0	4.9		5.9	14.2	19.3	20.0	5.0	1.0
Delay (s)	74.8	41.4	40.6	78.0	45.9		54.2	50.3	54.3	55.4	26.3	15.4
Level of Service	E	D	D	E	D		D	D	D	E	C	B
Approach Delay (s)		61.6			61.3			51.6			29.4	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM Average Control Delay	46.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

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                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Weber/Herndon
********************************************************************************
Average Delay (sec/veh):      0.9       Worst Case Level Of Service: B[ 13.1]
********************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  1    0  0  3  0  1    1  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0   171     0    0     0     0 1024   295    22 1143     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0   171     0    0     0     0 1024   295    22 1143     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0   171     0    0     0     0 1024   295    22 1143     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0   186     0    0     0     0 1113   321    24 1242     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0   186     0    0     0     0 1113   321    24 1242     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   371  xxxx xxxx   414  xxxx xxxx xxxxx  1434 xxxx xxxxx
Potent Cap.: xxxx xxxx   632  xxxx xxxx   593  xxxx xxxx xxxxx   480 xxxx xxxxx
Move Cap.:   xxxx xxxx   632  xxxx xxxx   593  xxxx xxxx xxxxx   480 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.29  xxxx xxxx  0.00  xxxx xxxx  xxxx  0.05 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   1.2  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.2 xxxx xxxxx
Control Del:xxxxx xxxx  13.1 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  12.9 xxxx xxxxx
LOS by Move:   *    *     B     *    *     *     *    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      13.1           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        B                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	387	589	241	55	440	137	526	263	126	170	410	300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	421	640	262	60	478	149	572	286	137	185	446	326
RTOR Reduction (vph)	0	0	45	0	0	121	0	0	91	0	0	28
Lane Group Flow (vph)	421	640	217	60	478	28	572	286	46	185	446	298
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.0	22.8	42.2	2.4	14.2	14.2	19.4	25.3	25.3	8.5	14.4	25.4
Effective Green, g (s)	11.0	22.8	42.2	2.4	14.2	14.2	19.4	25.3	25.3	8.5	14.4	25.4
Actuated g/C Ratio	0.15	0.30	0.56	0.03	0.19	0.19	0.26	0.34	0.34	0.11	0.19	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	504	1546	975	110	963	300	888	1194	534	389	679	621
v/s Ratio Prot	c0.12	0.13	0.06	0.02	c0.09		c0.17	0.08		0.05	c0.13	0.07
v/s Ratio Perm			0.08			0.02			0.03			0.12
v/c Ratio	0.84	0.41	0.22	0.55	0.50	0.09	0.64	0.24	0.09	0.48	0.66	0.48
Uniform Delay, d1	31.1	20.8	8.2	35.8	27.2	25.1	24.7	17.9	17.0	31.2	28.0	19.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.4	0.2	0.1	5.4	0.4	0.1	3.6	0.5	0.3	0.9	2.3	0.6
Delay (s)	42.5	21.0	8.3	41.2	27.6	25.2	28.3	18.4	17.3	32.1	30.3	20.2
Level of Service	D	C	A	D	C	C	C	B	B	C	C	C
Approach Delay (s)		25.3			28.3			23.9			27.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91		0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085		3433	1809		3433	1863	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085		3433	1809		3433	1863	
Volume (vph)	50	657	41	118	587	0	56	363	86	50	356	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	714	45	128	638	0	61	395	93	54	387	0
RTOR Reduction (vph)	0	0	34	0	0	0	0	13	0	0	0	0
Lane Group Flow (vph)	54	714	11	128	638	0	61	475	0	54	387	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	2.4	14.6	14.6	3.2	15.4		2.8	23.4		2.8	23.4	
Effective Green, g (s)	2.4	14.6	14.6	3.2	15.4		2.8	23.4		2.8	23.4	
Actuated g/C Ratio	0.04	0.24	0.24	0.05	0.26		0.05	0.39		0.05	0.39	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	137	1237	385	183	1305		160	706		160	727	
v/s Ratio Prot	0.02	c0.14		c0.04	0.13		c0.02	c0.26		0.02	0.21	
v/s Ratio Perm			0.01									
v/c Ratio	0.39	0.58	0.03	0.70	0.49		0.38	0.67		0.34	0.53	
Uniform Delay, d1	28.1	20.0	17.3	27.9	19.0		27.8	15.1		27.7	14.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	0.7	0.0	11.1	0.3		1.5	5.1		1.3	2.8	
Delay (s)	30.0	20.6	17.3	39.0	19.2		29.3	20.2		29.0	16.9	
Level of Service	C	C	B	D	B		C	C		C	B	
Approach Delay (s)		21.1			22.5			21.2			18.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0		4.0
Lane Util. Factor	0.91		0.97	0.91		0.76
Frt	1.00		1.00	1.00		0.85
Flt Protected	1.00		0.95	1.00		1.00
Satd. Flow (prot)	5085		3433	5085		3610
Flt Permitted	1.00		0.95	1.00		1.00
Satd. Flow (perm)	5085		3433	5085		3610
Volume (vph)	935	0	1841	500	0	1474
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1016	0	2001	543	0	1602
RTOR Reduction (vph)	0	0	0	0	0	3
Lane Group Flow (vph)	1016	0	2001	543	0	1599
Turn Type			Prot			Over
Protected Phases	4		3	8		3
Permitted Phases						
Actuated Green, G (s)	15.8		41.2	65.0		41.2
Effective Green, g (s)	15.8		41.2	65.0		41.2
Actuated g/C Ratio	0.24		0.63	1.00		0.63
Clearance Time (s)	4.0		4.0	3.0		4.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	1236		2176	5085		2288
v/s Ratio Prot	c0.20		c0.58	0.11		0.44
v/s Ratio Perm						
v/c Ratio	0.82		0.92	0.11		0.70
Uniform Delay, d1	23.3		10.4	0.0		7.8
Progression Factor	1.00		1.00	1.00		1.00
Incremental Delay, d2	4.5		6.8	0.0		1.0
Delay (s)	27.8		17.3	0.0		8.8
Level of Service	C		B	A		A
Approach Delay (s)	27.8			13.6	8.8	
Approach LOS	C			B	A	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	3539	1583
Volume (vph)	8	2276	125	460	2207	227	102	401	471	302	498	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	2474	136	500	2399	247	111	436	512	328	541	35
RTOR Reduction (vph)	0	0	47	0	0	37	0	0	136	0	0	27
Lane Group Flow (vph)	9	2474	89	500	2399	210	111	436	376	328	541	8
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	54.2	54.2	15.0	68.4	68.4	7.7	24.8	24.8	10.0	27.1	27.1
Effective Green, g (s)	0.8	54.2	54.2	15.0	68.4	68.4	7.7	24.8	24.8	10.0	27.1	27.1
Actuated g/C Ratio	0.01	0.45	0.45	0.12	0.57	0.57	0.06	0.21	0.21	0.08	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	23	2297	715	429	2898	902	220	385	327	286	799	357
v/s Ratio Prot	0.00	c0.49		c0.15	0.47		0.03	0.23		c0.10	0.15	
v/s Ratio Perm			0.06			0.13			c0.24			0.00
v/c Ratio	0.39	1.08	0.12	1.17	0.83	0.23	0.50	1.13	1.15	1.15	0.68	0.02
Uniform Delay, d1	59.4	32.9	19.1	52.5	21.0	12.8	54.3	47.6	47.6	55.0	42.5	36.1
Progression Factor	1.00	1.00	1.00	0.69	1.32	1.19	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.7	43.4	0.1	77.0	0.2	0.0	1.8	87.0	96.3	98.9	4.6	0.1
Delay (s)	70.0	76.3	19.2	113.4	27.9	15.3	56.1	134.6	143.9	153.9	47.0	36.3
Level of Service	E	E	B	F	C	B	E	F	F	F	D	D
Approach Delay (s)		73.3			40.5			130.9			85.4	
Approach LOS		E			D			F			F	

Intersection Summary			
HCM Average Control Delay	69.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	678	2023	355	115	2135	261	250	325	99	188	312	512
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	737	2199	386	125	2321	284	272	353	108	204	339	557
RTOR Reduction (vph)	0	0	92	0	0	12	0	0	86	0	0	229
Lane Group Flow (vph)	737	2199	294	125	2321	272	272	353	22	204	339	328
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	24.0	66.2	66.2	7.8	50.0	61.2	9.0	18.8	18.8	11.2	21.0	21.0
Effective Green, g (s)	24.0	66.2	66.2	7.8	50.0	61.2	9.0	18.8	18.8	11.2	21.0	21.0
Actuated g/C Ratio	0.20	0.55	0.55	0.06	0.42	0.51	0.08	0.16	0.16	0.09	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	687	2805	873	223	2119	860	257	554	248	320	619	277
v/s Ratio Prot	c0.21	0.43		0.04	c0.46	0.03	c0.08	0.10		0.06	0.10	
v/s Ratio Perm			0.19			0.14			0.01			c0.21
v/c Ratio	1.07	0.78	0.34	0.56	1.10	0.32	1.06	0.64	0.09	0.64	0.55	1.19
Uniform Delay, d1	48.0	21.3	14.8	54.4	35.0	17.2	55.5	47.4	43.3	52.4	45.2	49.5
Progression Factor	0.74	1.10	1.36	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	35.9	0.1	0.0	3.2	51.1	0.2	72.4	5.5	0.7	4.1	3.5	114.0
Delay (s)	71.2	23.5	20.2	57.6	86.1	17.4	127.9	52.9	44.0	56.6	48.6	163.5
Level of Service	E	C	C	E	F	B	F	D	D	E	D	F
Approach Delay (s)		33.7			77.6			79.4			108.3	
Approach LOS		C			E			E			F	

Intersection Summary			
HCM Average Control Delay	63.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Volume (vph)	5	2303	1	4	2512	60	2	0	4	60	1	17
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	2503	1	4	2730	65	2	0	4	65	1	18
RTOR Reduction (vph)	0	0	0	0	0	10	0	3	0	0	0	16
Lane Group Flow (vph)	5	2503	1	4	2730	55	2	1	0	65	1	2
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	1.2	73.9	73.9	1.2	73.9	73.9	5.6	14.9		4.0	13.3	13.3
Effective Green, g (s)	1.2	73.9	73.9	1.2	73.9	73.9	5.6	14.9		4.0	13.3	13.3
Actuated g/C Ratio	0.01	0.67	0.67	0.01	0.67	0.67	0.05	0.14		0.04	0.12	0.12
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	37	3416	1063	37	3416	1063	175	407		125	225	191
v/s Ratio Prot	c0.00	0.49		0.00	c0.54		0.00	0.00		c0.02	0.00	
v/s Ratio Perm			0.00			0.03						c0.00
v/c Ratio	0.14	0.73	0.00	0.11	0.80	0.05	0.01	0.00		0.52	0.00	0.01
Uniform Delay, d1	53.9	11.7	5.9	53.9	12.8	6.1	49.6	41.1		52.1	42.5	42.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.8	0.0	1.3	1.4	0.0	0.0	0.0		3.9	0.0	0.0
Delay (s)	55.6	12.5	5.9	55.2	14.2	6.2	49.6	41.1		55.9	42.5	42.6
Level of Service	E	B	A	E	B	A	D	D		E	D	D
Approach Delay (s)		12.6			14.0			43.9			52.9	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	133	2079	390	283	2257	81	464	198	273	33	169	127
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	145	2260	424	308	2453	88	504	215	297	36	184	138
RTOR Reduction (vph)	0	0	129	0	0	18	0	0	92	0	0	78
Lane Group Flow (vph)	145	2260	295	308	2453	70	504	215	205	36	184	60
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	44.0	44.0	9.0	48.0	48.0	14.0	28.6	28.6	2.4	17.0	17.0
Effective Green, g (s)	5.0	44.0	44.0	9.0	48.0	48.0	14.0	28.6	28.6	2.4	17.0	17.0
Actuated g/C Ratio	0.05	0.44	0.44	0.09	0.48	0.48	0.14	0.29	0.29	0.02	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	172	2237	697	309	2441	760	481	1012	453	82	602	269
v/s Ratio Prot	0.04	0.44		c0.09	c0.48		c0.15	0.06		0.01	0.05	
v/s Ratio Perm			0.19			0.04			c0.13			0.04
v/c Ratio	0.84	1.01	0.42	1.00	1.00	0.09	1.05	0.21	0.45	0.44	0.31	0.22
Uniform Delay, d1	47.1	28.0	19.3	45.5	26.0	14.1	43.0	27.1	29.3	48.1	36.3	35.8
Progression Factor	1.00	1.00	1.00	1.22	0.58	0.64	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.5	21.6	0.4	24.1	10.1	0.0	54.1	0.5	3.2	3.7	1.3	1.9
Delay (s)	76.6	49.6	19.7	79.4	25.1	9.1	97.1	27.6	32.5	51.9	37.6	37.7
Level of Service	E	D	B	E	C	A	F	C	C	D	D	D
Approach Delay (s)		46.5			30.5			63.5			39.1	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM Average Control Delay	42.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	274	1910	350	203	2323	343	152	348	180	232	284	436
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	298	2076	380	221	2525	373	165	378	196	252	309	474
RTOR Reduction (vph)	0	0	54	0	0	43	0	0	133	0	0	4
Lane Group Flow (vph)	298	2076	326	221	2525	330	165	378	63	252	309	470
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.7	51.1	51.1	8.9	48.3	48.3	7.0	16.0	16.0	8.0	17.0	28.7
Effective Green, g (s)	11.7	51.1	51.1	8.9	48.3	48.3	7.0	16.0	16.0	8.0	17.0	28.7
Actuated g/C Ratio	0.12	0.51	0.51	0.09	0.48	0.48	0.07	0.16	0.16	0.08	0.17	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	402	2598	809	306	2456	765	240	566	253	275	602	518
v/s Ratio Prot	0.09	c0.41		0.06	c0.50		0.05	0.11		c0.07	0.09	c0.11
v/s Ratio Perm			0.21			0.21			0.04			0.19
v/c Ratio	0.74	0.80	0.40	0.72	1.03	0.43	0.69	0.67	0.25	0.92	0.51	0.91
Uniform Delay, d1	42.7	20.2	15.1	44.3	25.8	16.9	45.4	39.5	36.8	45.7	37.7	34.4
Progression Factor	1.43	0.22	0.08	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	0.8	0.1	8.2	25.8	0.4	7.9	6.1	2.4	32.8	3.1	19.4
Delay (s)	64.3	5.3	1.4	52.5	51.6	17.3	53.4	45.6	39.1	78.5	40.8	53.8
Level of Service	E	A	A	D	D	B	D	D	D	E	D	D
Approach Delay (s)		11.1			47.6			45.6			55.9	
Approach LOS		B			D			D			E	

Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	5085	1583
Volume (vph)	81	2130	96	181	2592	194	87	308	101	107	410	139
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	2315	104	197	2817	211	95	335	110	116	446	151
RTOR Reduction (vph)	0	0	43	0	0	52	0	0	70	0	0	70
Lane Group Flow (vph)	88	2315	61	197	2817	159	95	335	40	116	446	81
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	47.8	47.8	7.0	51.6	51.6	3.2	15.2	15.2	4.0	16.0	16.0
Effective Green, g (s)	3.2	47.8	47.8	7.0	51.6	51.6	3.2	15.2	15.2	4.0	16.0	16.0
Actuated g/C Ratio	0.04	0.53	0.53	0.08	0.57	0.57	0.04	0.17	0.17	0.04	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	122	2701	841	267	2915	908	122	598	267	153	904	281
v/s Ratio Prot	0.03	0.46		c0.06	c0.55		0.03	c0.09		c0.03	0.09	
v/s Ratio Perm			0.04			0.10			0.03			0.05
v/c Ratio	0.72	0.86	0.07	0.74	0.97	0.18	0.78	0.56	0.15	0.76	0.49	0.29
Uniform Delay, d1	43.0	18.2	10.3	40.6	18.4	9.1	43.0	34.3	31.9	42.5	33.3	32.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.05	0.66	0.59	1.00	1.00	1.00
Incremental Delay, d2	18.9	2.9	0.0	10.2	10.0	0.1	22.2	3.1	1.0	19.1	1.9	2.6
Delay (s)	61.8	21.1	10.3	50.8	28.4	9.2	67.5	25.6	19.8	61.7	35.3	34.6
Level of Service	E	C	B	D	C	A	E	C	B	E	D	C
Approach Delay (s)		22.1			28.5			31.8			39.4	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	816	1463	168	90	1912	159	214	1293	46	254	1314	1109
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	887	1590	183	98	2078	173	233	1405	50	276	1428	1205
RTOR Reduction (vph)	0	0	88	0	0	50	0	0	38	0	0	0
Lane Group Flow (vph)	887	1590	95	98	2078	123	233	1405	12	276	1428	1205
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	27.0	54.2	54.2	6.8	34.0	34.0	6.0	26.0	26.0	7.0	27.0	54.0
Effective Green, g (s)	27.0	54.2	54.2	6.8	34.0	34.0	6.0	26.0	26.0	7.0	27.0	54.0
Actuated g/C Ratio	0.25	0.49	0.49	0.06	0.31	0.31	0.05	0.24	0.24	0.06	0.25	0.49
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	843	2506	780	212	1572	489	187	1202	374	218	1248	835
v/s Ratio Prot	0.26	0.31		0.03	c0.41		0.07	0.28		c0.08	0.28	c0.35
v/s Ratio Perm			0.06			0.08			0.01			0.41
v/c Ratio	1.05	0.63	0.12	0.46	1.32	0.25	1.25	1.17	0.03	1.27	1.14	1.44
Uniform Delay, d1	41.5	20.6	15.1	49.8	38.0	28.5	52.0	42.0	32.3	51.5	41.5	28.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	45.6	0.5	0.1	1.6	149.4	0.3	147.3	85.2	0.2	150.9	74.8	206.2
Delay (s)	87.1	21.1	15.1	51.4	187.4	28.7	199.3	127.2	32.5	202.4	116.3	234.2
Level of Service	F	C	B	D	F	C	F	F	C	F	F	F
Approach Delay (s)		42.7			170.0			134.4			173.3	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	129.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	121.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	201	1596	326	407	1579	337	135	903	238	267	1051	332
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	218	1735	354	442	1716	366	147	982	259	290	1142	361
RTOR Reduction (vph)	0	0	101	0	0	97	0	0	153	0	0	148
Lane Group Flow (vph)	218	1735	253	442	1716	269	147	982	106	290	1142	214
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	28.0	28.0	11.0	32.0	32.0	4.0	18.0	18.0	7.0	21.0	21.0
Effective Green, g (s)	7.0	28.0	28.0	11.0	32.0	32.0	4.0	18.0	18.0	7.0	21.0	21.0
Actuated g/C Ratio	0.09	0.35	0.35	0.14	0.40	0.40	0.05	0.22	0.22	0.09	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	300	1780	554	472	2034	633	172	1144	356	300	1335	416
v/s Ratio Prot	0.06	c0.34		c0.13	c0.34		0.04	0.19		c0.08	c0.22	
v/s Ratio Perm			0.16			0.17			0.07			0.13
v/c Ratio	0.73	0.97	0.46	0.94	0.84	0.43	0.85	0.86	0.30	0.97	0.86	0.51
Uniform Delay, d1	35.6	25.7	20.1	34.2	21.7	17.4	37.7	29.8	25.7	36.4	28.1	25.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.5	15.6	0.6	26.1	3.4	0.5	31.5	8.4	2.1	42.5	7.2	4.5
Delay (s)	44.0	41.3	20.7	60.2	25.1	17.8	69.3	38.2	27.9	78.9	35.2	29.6
Level of Service	D	D	C	E	C	B	E	D	C	E	D	C
Approach Delay (s)		38.4			30.2			39.6			41.2	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	36.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			3433	1583
Volume (vph)	1350	527	0	0	282	178
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1467	573	0	0	307	193
RTOR Reduction (vph)	0	249	0	0	0	18
Lane Group Flow (vph)	1467	324	0	0	307	175
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	23.9	23.9			10.4	10.4
Effective Green, g (s)	23.9	23.9			10.4	10.4
Actuated g/C Ratio	0.57	0.57			0.25	0.25
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	2000	894			844	389
v/s Ratio Prot	c0.41				0.09	
v/s Ratio Perm		0.20				c0.11
v/c Ratio	0.73	0.36			0.36	0.45
Uniform Delay, d1	6.8	5.0			13.2	13.5
Progression Factor	1.00	1.00			1.00	1.00
Incremental Delay, d2	1.4	0.3			0.3	0.8
Delay (s)	8.3	5.3			13.5	14.4
Level of Service	A	A			B	B
Approach Delay (s)	7.4			0.0	13.8	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	42.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBU	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	0.97	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.91		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583		1770	3539	1583	3433	1690		1770	1863
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	1583		1770	3539	1583	3433	1690		1770	1863
Volume (vph)	453	560	10	10	71	682	162	456	171	276	1	178
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	492	609	11	11	77	741	176	496	186	300	1	193
RTOR Reduction (vph)	0	0	6	0	0	0	125	0	61	0	0	0
Lane Group Flow (vph)	492	609	5	0	88	741	51	496	425	0	1	193
Turn Type	Prot		Perm	Prot	Prot		Perm	Prot			Prot	
Protected Phases	5	2		1	1	6		7	4		3	8
Permitted Phases			2				6					
Actuated Green, G (s)	25.0	38.3	38.3		7.4	20.7	20.7	13.0	28.8		0.8	16.6
Effective Green, g (s)	25.0	38.3	38.3		7.4	20.7	20.7	13.0	28.8		0.8	16.6
Actuated g/C Ratio	0.27	0.42	0.42		0.08	0.23	0.23	0.14	0.32		0.01	0.18
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	485	1485	664		143	802	359	489	533		16	339
v/s Ratio Prot	c0.28	0.17			0.05	c0.21		c0.14	c0.25		0.00	0.10
v/s Ratio Perm			0.00				0.03					
v/c Ratio	1.01	0.41	0.01		0.62	0.92	0.14	1.01	0.80		0.06	0.57
Uniform Delay, d1	33.2	18.6	15.4		40.6	34.5	28.2	39.2	28.6		44.9	34.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	44.5	0.2	0.0		7.6	16.2	0.2	44.3	8.1		1.6	2.2
Delay (s)	77.7	18.8	15.4		48.2	50.7	28.4	83.5	36.7		46.5	36.3
Level of Service	E	B	B		D	D	C	F	D		D	D
Approach Delay (s)		44.8				46.6			60.3			34.8
Approach LOS		D				D			E			C

Intersection Summary			
HCM Average Control Delay	49.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	91.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SWR
Lane Configurations	
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Volume (vph)	71
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	77
RTOR Reduction (vph)	63
Lane Group Flow (vph)	14
Turn Type	Perm
Protected Phases	
Permitted Phases	8
Actuated Green, G (s)	16.6
Effective Green, g (s)	16.6
Actuated g/C Ratio	0.18
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	288
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.05
Uniform Delay, d1	30.8
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	30.9
Level of Service	C
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	450	83	278	409	140	179
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	489	90	302	445	152	195

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1
Volume Total (vph)	489	90	302	445	347
Volume Left (vph)	489	0	0	0	152
Volume Right (vph)	0	90	0	445	0
Hadj (s)	0.53	-0.67	0.03	-0.67	0.12
Departure Headway (s)	7.9	6.7	7.3	6.6	7.4
Degree Utilization, x	1.08	0.17	0.61	0.82	0.71
Capacity (veh/h)	462	525	487	537	479
Control Delay (s)	92.5	9.9	20.1	31.5	26.3
Approach Delay (s)	79.6		26.9		26.3
Approach LOS	F		D		D

Intersection Summary			
Delay	45.0		
HCM Level of Service	E		
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	5085	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	5085	5085	1583
Volume (vph)	76	469	510	1398	1718	123
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	510	554	1520	1867	134
RTOR Reduction (vph)	0	435	0	0	0	82
Lane Group Flow (vph)	83	75	554	1520	1867	52
Turn Type		Perm	Prot			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	10.6	10.6	32.8	71.4	34.6	34.6
Effective Green, g (s)	10.6	10.6	32.8	71.4	34.6	34.6
Actuated g/C Ratio	0.12	0.12	0.36	0.79	0.38	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	208	186	645	4034	1955	609
v/s Ratio Prot	0.05		c0.31	0.30	c0.37	
v/s Ratio Perm		c0.05				0.03
v/c Ratio	0.40	0.40	0.86	0.38	0.95	0.08
Uniform Delay, d1	36.8	36.8	26.5	2.7	26.9	17.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	1.4	11.0	0.3	12.2	0.3
Delay (s)	38.0	38.2	37.5	3.0	39.1	17.9
Level of Service	D	D	D	A	D	B
Approach Delay (s)	38.2			12.2	37.7	
Approach LOS	D			B	D	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Volume (vph)	227	408	812	654	350	214	712	1999	363	89	2171	176
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	247	443	883	711	380	233	774	2173	395	97	2360	191
RTOR Reduction (vph)	0	0	158	0	0	57	0	0	24	0	0	47
Lane Group Flow (vph)	247	443	725	711	380	176	774	2173	371	97	2360	144
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	12.8	32.0	32.0	16.0	35.2	35.2	17.0	52.0	52.0	4.0	39.0	39.0
Effective Green, g (s)	12.8	32.0	32.0	16.0	35.2	35.2	17.0	52.0	52.0	4.0	39.0	39.0
Actuated g/C Ratio	0.11	0.27	0.27	0.13	0.29	0.29	0.14	0.43	0.43	0.03	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	366	944	422	458	1038	464	486	2204	686	114	1653	514
v/s Ratio Prot	0.07	0.13		c0.21	0.11		c0.23	0.43		0.03	c0.46	
v/s Ratio Perm			c0.46			c0.11			0.23			0.09
v/c Ratio	0.67	0.47	1.72	1.55	0.37	0.38	1.59	0.99	0.54	0.85	1.43	0.28
Uniform Delay, d1	51.6	36.9	44.0	52.0	33.6	33.7	51.5	33.6	25.2	57.7	40.5	30.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.9	0.4	333.4	259.2	0.2	0.5	276.3	16.1	3.0	42.1	196.0	1.4
Delay (s)	56.5	37.3	377.4	311.2	33.8	34.2	327.8	49.8	28.2	99.8	236.5	31.4
Level of Service	E	D	F	F	C	C	F	D	C	F	F	C
Approach Delay (s)		231.2			182.8			111.6			216.7	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	174.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	120.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEU	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863
Flt Permitted		0.38	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.66	1.00
Satd. Flow (perm)		708	3539	1583	1770	3539	1583	1770	1863	1583	1237	1863
Volume (vph)	10	300	500	92	44	626	51	230	134	58	97	60
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	326	543	100	48	680	55	250	146	63	105	65
RTOR Reduction (vph)	0	0	0	42	0	0	23	0	0	47	0	0
Lane Group Flow (vph)	0	337	543	58	48	680	32	250	146	16	105	65
Turn Type	Perm	Perm		Perm	Prot		custom	Prot		custom	Perm	
Protected Phases			4!		8!			2!				6!
Permitted Phases	4	4		4		8	8		2	2	6	
Actuated Green, G (s)		27.5	27.5	27.5	27.5	27.5	27.5	11.8	11.8	11.8	11.8	11.8
Effective Green, g (s)		27.5	27.5	27.5	27.5	27.5	27.5	11.8	11.8	11.8	11.8	11.8
Actuated g/C Ratio		0.58	0.58	0.58	0.58	0.58	0.58	0.25	0.25	0.25	0.25	0.25
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		412	2058	920	1029	2058	920	442	465	395	309	465
v/s Ratio Prot			0.15		0.03			c0.14				0.03
v/s Ratio Perm		c0.48		0.04		0.19	0.02		0.08	0.01	0.08	
v/c Ratio		0.82	0.26	0.06	0.05	0.33	0.03	0.57	0.31	0.04	0.34	0.14
Uniform Delay, d1		7.9	4.9	4.3	4.3	5.1	4.2	15.5	14.5	13.5	14.6	13.8
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		11.9	0.1	0.0	0.0	0.1	0.0	1.7	0.4	0.0	0.7	0.1
Delay (s)		19.8	5.0	4.3	4.3	5.2	4.2	17.2	14.8	13.5	15.2	13.9
Level of Service		B	A	A	A	A	A	B	B	B	B	B
Approach Delay (s)			10.0			5.1			15.9			15.2
Approach LOS			B			A			B			B

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	47.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	SWR
Lane Configurations	
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Volume (vph)	314
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	341
RTOR Reduction (vph)	182
Lane Group Flow (vph)	159
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	11.8
Effective Green, g (s)	11.8
Actuated g/C Ratio	0.25
Clearance Time (s)	4.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	395
v/s Ratio Prot	
v/s Ratio Perm	0.10
v/c Ratio	0.40
Uniform Delay, d1	14.8
Progression Factor	1.00
Incremental Delay, d2	0.7
Delay (s)	15.5
Level of Service	B
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1798		1770	1863	1583	1770	1844		1770	1863	1583
Flt Permitted	0.56	1.00		0.19	1.00	1.00	0.56	1.00		0.62	1.00	1.00
Satd. Flow (perm)	1039	1798		362	1863	1583	1052	1844		1158	1863	1583
Volume (vph)	248	540	162	10	295	110	149	184	13	139	228	140
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	270	587	176	11	321	120	162	200	14	151	248	152
RTOR Reduction (vph)	0	20	0	0	0	57	0	5	0	0	0	109
Lane Group Flow (vph)	270	743	0	11	321	63	162	209	0	151	248	43
Turn Type	Perm			Perm		Perm	Perm			Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)	22.0	22.0		22.0	22.0	22.0	11.9	11.9		11.9	11.9	11.9
Effective Green, g (s)	22.0	22.0		22.0	22.0	22.0	11.9	11.9		11.9	11.9	11.9
Actuated g/C Ratio	0.53	0.53		0.53	0.53	0.53	0.28	0.28		0.28	0.28	0.28
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	546	944		190	978	831	299	524		329	529	450
v/s Ratio Prot		c0.41			0.17			0.11			0.13	
v/s Ratio Perm	0.26			0.03		0.04	c0.15			0.13		0.03
v/c Ratio	0.49	0.79		0.06	0.33	0.08	0.54	0.40		0.46	0.47	0.10
Uniform Delay, d1	6.4	8.1		4.9	5.7	4.9	12.7	12.1		12.3	12.4	11.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	4.4		0.1	0.2	0.0	2.0	0.5		1.0	0.7	0.1
Delay (s)	7.1	12.4		5.0	5.9	5.0	14.7	12.6		13.4	13.0	11.1
Level of Service	A	B		A	A	A	B	B		B	B	B
Approach Delay (s)		11.0			5.6			13.5			12.6	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	41.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.86		0.95	0.95		0.95	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.85		1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.98	
Satd. Flow (prot)	1770	5085	1583	1770	6332		1681	1504		1681	1563	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	0.17	
Satd. Flow (perm)	1770	5085	1583	1770	6332		1681	1504		1681	272	
Volume (vph)	609	2879	374	126	3751	320	281	0	935	470	0	285
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	662	3129	407	137	4077	348	305	0	1016	511	0	310
RTOR Reduction (vph)	0	0	117	0	11	0	0	350	0	0	54	0
Lane Group Flow (vph)	662	3129	290	137	4414	0	305	666	0	368	399	0
Turn Type	Prot		Perm	Prot			Prot			Prot		
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2									
Actuated Green, G (s)	24.0	68.0	68.0	6.0	50.0		12.0	28.0		14.0	32.0	
Effective Green, g (s)	24.0	68.0	68.0	6.0	50.0		12.0	28.0		14.0	32.0	
Actuated g/C Ratio	0.20	0.57	0.57	0.05	0.42		0.10	0.23		0.12	0.27	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	354	2882	897	89	2638		168	351		196	223	
v/s Ratio Prot	c0.37	0.62		0.08	c0.70		0.18	0.19		c0.22	c0.21	
v/s Ratio Perm			0.18					0.25			c0.27	
v/c Ratio	1.87	1.09	0.32	1.54	1.67		1.82	1.90		1.88	1.79	
Uniform Delay, d1	48.0	26.0	13.8	57.0	35.0		54.0	46.0		53.0	44.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	402.2	45.3	1.0	290.9	304.6		389.4	413.9		413.7	372.1	
Delay (s)	450.2	71.3	14.7	347.9	339.6		443.4	459.9		466.7	416.1	
Level of Service	F	E	B	F	F		F	F		F	F	
Approach Delay (s)		125.6			339.9			456.1			438.7	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	278.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	165.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539		1770	1836	
Flt Permitted	0.73	1.00	1.00	0.75	1.00	1.00	0.49	1.00		0.62	1.00	
Satd. Flow (perm)	1359	1863	1583	1393	1863	1583	920	3539		1156	1836	
Volume (vph)	70	14	3	2	39	68	20	192	0	98	360	39
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	15	3	2	42	74	22	209	0	107	391	42
RTOR Reduction (vph)	0	0	3	0	0	62	0	0	0	0	5	0
Lane Group Flow (vph)	76	15	0	2	42	12	22	209	0	107	428	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	8.1	8.1	8.1	8.1	8.1	8.1	33.5	33.5		33.5	33.5	
Effective Green, g (s)	8.1	8.1	8.1	8.1	8.1	8.1	33.5	33.5		33.5	33.5	
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.68	0.68		0.68	0.68	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	222	304	259	227	304	259	621	2390		781	1240	
v/s Ratio Prot		0.01			0.02			0.06			c0.23	
v/s Ratio Perm	c0.06		0.00	0.00		0.01	0.02			0.09		
v/c Ratio	0.34	0.05	0.00	0.01	0.14	0.05	0.04	0.09		0.14	0.35	
Uniform Delay, d1	18.4	17.5	17.4	17.4	17.8	17.5	2.7	2.8		2.9	3.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.1	0.0	0.0	0.2	0.1	0.0	0.0		0.1	0.2	
Delay (s)	19.3	17.6	17.4	17.4	18.0	17.6	2.7	2.8		3.0	3.6	
Level of Service	B	B	B	B	B	B	A	A		A	A	
Approach Delay (s)		19.0			17.7			2.8			3.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	49.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0				4.0		4.0
Lane Util. Factor		0.91			0.86	1.00				0.97		0.88
Frt		1.00			1.00	0.85				1.00		0.85
Flt Protected		1.00			1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085			6408	1583				3433		2787
Flt Permitted		1.00			1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085			6408	1583				3433		2787
Volume (vph)	0	2239	0	0	4471	216	0	0	0	251	0	1342
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2434	0	0	4860	235	0	0	0	273	0	1459
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	3
Lane Group Flow (vph)	0	2434	0	0	4860	235	0	0	0	273	0	1456
Turn Type						Free				custom		custom
Protected Phases		2			6							
Permitted Phases						Free				8		8
Actuated Green, G (s)		61.0			61.0	110.0				41.0		41.0
Effective Green, g (s)		61.0			61.0	110.0				41.0		41.0
Actuated g/C Ratio		0.55			0.55	1.00				0.37		0.37
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		2820			3554	1583				1280		1039
v/s Ratio Prot		0.48			c0.76							
v/s Ratio Perm						0.15				0.08		c0.52
v/c Ratio		0.86			1.37	0.15				0.21		1.40
Uniform Delay, d1		20.9			24.5	0.0				23.5		34.5
Progression Factor		1.00			1.00	1.00				1.00		1.00
Incremental Delay, d2		3.8			167.2	0.2				0.1		186.7
Delay (s)		24.7			191.7	0.2				23.6		221.2
Level of Service		C			F	A				C		F
Approach Delay (s)		24.7			182.9			0.0			190.0	
Approach LOS		C			F			A			F	

Intersection Summary			
HCM Average Control Delay	142.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0		4.0		4.0			
Lane Util. Factor		0.91	1.00		0.91		1.00		1.00			
Frt		1.00	0.85		1.00		1.00		0.85			
Flt Protected		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (prot)		5085	1583		5085		1770		1583			
Flt Permitted		1.00	1.00		1.00		0.95		1.00			
Satd. Flow (perm)		5085	1583		5085		1770		1583			
Volume (vph)	0	2535	146	0	3003	0	88	0	180	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2755	159	0	3264	0	96	0	196	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	2755	159	0	3264	0	96	0	195	0	0	0
Turn Type			Free				custom		custom			
Protected Phases		2			6							
Permitted Phases			Free				4		4			
Actuated Green, G (s)		55.3	76.7		55.3		13.4		13.4			
Effective Green, g (s)		55.3	76.7		55.3		13.4		13.4			
Actuated g/C Ratio		0.72	1.00		0.72		0.17		0.17			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		3666	1583		3666		309		277			
v/s Ratio Prot		0.54			c0.64							
v/s Ratio Perm			0.10				0.05		c0.12			
v/c Ratio		0.75	0.10		0.89		0.31		0.70			
Uniform Delay, d1		6.5	0.0		8.3		27.6		29.8			
Progression Factor		1.00	1.00		1.00		1.00		1.00			
Incremental Delay, d2		1.5	0.1		3.7		0.6		7.9			
Delay (s)		8.0	0.1		12.0		28.2		37.7			
Level of Service		A	A		B		C		D			
Approach Delay (s)		7.6			12.0			34.6			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	76.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	1770	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	1770	3539	3433	1583
Volume (vph)	465	712	821	243	739	968
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	505	774	892	264	803	1052
RTOR Reduction (vph)	0	356	0	0	0	548
Lane Group Flow (vph)	505	418	892	264	803	504
Turn Type		Perm	Prot			Perm
Protected Phases	6		5	2	4	
Permitted Phases		6				4
Actuated Green, G (s)	26.0	26.0	51.0	81.0	31.0	31.0
Effective Green, g (s)	26.0	26.0	51.0	81.0	31.0	31.0
Actuated g/C Ratio	0.22	0.22	0.42	0.68	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	767	343	752	2389	887	409
v/s Ratio Prot	0.14		c0.50	0.07	0.23	
v/s Ratio Perm		c0.26				c0.32
v/c Ratio	0.66	1.22	1.19	0.11	0.91	1.23
Uniform Delay, d1	42.9	47.0	34.5	6.8	43.1	44.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	122.4	97.0	0.0	12.6	124.1
Delay (s)	45.0	169.4	131.5	6.9	55.7	168.6
Level of Service	D	F	F	A	E	F
Approach Delay (s)	120.3			103.0	119.7	
Approach LOS	F			F	F	

Intersection Summary			
HCM Average Control Delay	115.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00		0.95	0.95	1.00
Frt	1.00	0.97		1.00	1.00	0.85		0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97		0.95	0.96	1.00
Satd. Flow (prot)	1770	3429		1770	3539	1583		1742		1681	1699	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97		0.95	0.96	1.00
Satd. Flow (perm)	1770	3429		1770	3539	1583		1742		1681	1699	1583
Volume (vph)	558	513	135	25	581	1095	249	18	82	807	77	678
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	607	558	147	27	632	1190	271	20	89	877	84	737
RTOR Reduction (vph)	0	21	0	0	0	463	0	11	0	0	0	360
Lane Group Flow (vph)	607	684	0	27	632	727	0	369	0	468	493	377
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	22.0	39.0		7.0	24.0	24.0		17.0		21.0	21.0	21.0
Effective Green, g (s)	22.0	39.0		7.0	24.0	24.0		17.0		21.0	21.0	21.0
Actuated g/C Ratio	0.22	0.39		0.07	0.24	0.24		0.17		0.21	0.21	0.21
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	389	1337		124	849	380		296		353	357	332
v/s Ratio Prot	c0.34	0.20		0.02	0.18			c0.21		0.28	c0.29	
v/s Ratio Perm						c0.46						0.24
v/c Ratio	1.56	0.51		0.22	0.74	1.91		1.25		1.33	1.38	1.13
Uniform Delay, d1	39.0	23.2		43.9	35.2	38.0		41.5		39.5	39.5	39.5
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	264.5	0.3		0.9	5.9	420.8		136.3		165.0	188.1	91.1
Delay (s)	303.5	23.6		44.8	41.0	458.8		177.8		204.5	227.6	130.6
Level of Service	F	C		D	D	F		F		F	F	F
Approach Delay (s)		153.1			310.0			177.8			179.1	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	218.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	128.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	1863	1583
Flt Permitted	0.27	1.00	1.00	0.21	1.00	1.00	0.75	1.00	1.00	0.75	1.00	1.00
Satd. Flow (perm)	511	3539	1583	388	3539	1583	1393	3539	1583	1398	1863	1583
Volume (vph)	101	1107	56	56	844	58	58	9	9	126	14	35
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	1203	61	61	917	63	63	10	10	137	15	38
RTOR Reduction (vph)	0	0	29	0	0	30	0	0	7	0	0	28
Lane Group Flow (vph)	110	1203	32	61	917	33	63	10	3	137	15	10
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	19.2	19.2	19.2	19.2	19.2	19.2	9.1	9.1	9.1	9.1	9.1	9.1
Effective Green, g (s)	19.2	19.2	19.2	19.2	19.2	19.2	9.1	9.1	9.1	9.1	9.1	9.1
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.53	0.53	0.25	0.25	0.25	0.25	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	270	1872	837	205	1872	837	349	887	397	350	467	397
v/s Ratio Prot		c0.34			0.26			0.00			0.01	
v/s Ratio Perm	0.22		0.02	0.16		0.02	0.05		0.00	c0.10		0.01
v/c Ratio	0.41	0.64	0.04	0.30	0.49	0.04	0.18	0.01	0.01	0.39	0.03	0.02
Uniform Delay, d1	5.1	6.1	4.1	4.8	5.4	4.1	10.7	10.2	10.2	11.3	10.3	10.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.8	0.0	0.8	0.2	0.0	0.2	0.0	0.0	0.7	0.0	0.0
Delay (s)	6.1	6.9	4.1	5.6	5.6	4.1	10.9	10.2	10.2	12.0	10.3	10.3
Level of Service	A	A	A	A	A	A	B	B	B	B	B	B
Approach Delay (s)		6.7			5.5			10.8			11.5	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	6.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	36.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3443		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3443		1770	3539	1583	1770	3539	1583
Volume (vph)	53	1177	96	690	614	136	327	1174	98	62	655	712
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	1279	104	750	667	148	355	1276	107	67	712	774
RTOR Reduction (vph)	0	0	51	0	16	0	0	0	53	0	0	153
Lane Group Flow (vph)	58	1279	53	750	799	0	355	1276	54	67	712	621
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	4.0	30.8	30.8	29.0	55.8		14.0	41.0	41.0	4.0	31.0	31.0
Effective Green, g (s)	4.0	30.8	30.8	29.0	55.8		14.0	41.0	41.0	4.0	31.0	31.0
Actuated g/C Ratio	0.03	0.25	0.25	0.24	0.46		0.12	0.34	0.34	0.03	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	902	404	425	1590		205	1201	537	59	908	406
v/s Ratio Prot	0.02	c0.36		c0.42	0.23		c0.20	0.36		0.04	0.20	
v/s Ratio Perm			0.03						0.03			c0.39
v/c Ratio	0.51	1.42	0.13	1.76	0.50		1.73	1.06	0.10	1.14	0.78	1.53
Uniform Delay, d1	57.4	45.0	34.7	45.9	22.8		53.4	39.9	27.3	58.4	41.8	44.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	194.6	0.1	353.6	0.3		348.9	44.3	0.1	159.0	4.5	250.3
Delay (s)	61.0	239.6	34.8	399.5	23.0		402.3	84.2	27.4	217.4	46.3	295.2
Level of Service	E	F	C	F	C		F	F	C	F	D	F
Approach Delay (s)		217.7			203.5			145.7			177.7	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	184.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.59		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	120.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88	1.00	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	1863	2787	1770	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	1770	1863	2787	1770	5085	1583	3433	5085	1583
Volume (vph)	220	237	22	111	262	810	47	1652	95	805	2027	351
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	258	24	121	285	880	51	1796	103	875	2203	382
RTOR Reduction (vph)	0	0	20	0	0	34	0	0	35	0	0	41
Lane Group Flow (vph)	239	258	4	121	285	846	51	1796	68	875	2203	341
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.0	19.5	19.5	9.7	16.2	42.2	4.0	36.9	36.9	26.0	58.9	71.9
Effective Green, g (s)	13.0	19.5	19.5	9.7	16.2	42.2	4.0	36.9	36.9	26.0	58.9	71.9
Actuated g/C Ratio	0.12	0.18	0.18	0.09	0.15	0.39	0.04	0.34	0.34	0.24	0.54	0.67
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	413	336	286	159	279	1191	65	1736	540	826	2771	1111
v/s Ratio Prot	0.07	c0.14		c0.07	c0.15	0.17	0.03	c0.35		c0.25	0.43	0.04
v/s Ratio Perm			0.00			0.13			0.04			0.18
v/c Ratio	0.58	0.77	0.02	0.76	1.02	0.71	0.78	1.03	0.13	1.06	0.80	0.31
Uniform Delay, d1	45.0	42.1	36.4	48.1	45.9	27.8	51.6	35.6	24.5	41.0	19.8	7.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	10.1	0.0	19.1	59.5	2.0	44.9	31.1	0.1	48.2	1.6	0.2
Delay (s)	46.9	52.2	36.4	67.2	105.5	29.8	96.6	66.7	24.6	89.3	21.4	7.8
Level of Service	D	D	D	E	F	C	F	E	C	F	C	A
Approach Delay (s)		49.1			50.1			65.2			37.1	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	47.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	108.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	4.0
Lane Util. Factor		1.00			1.00			1.00			1.00	1.00
Frt		0.98			1.00			1.00			1.00	0.85
Flt Protected		0.99			1.00			0.97			1.00	1.00
Satd. Flow (prot)		1818			1859			1815			1856	1583
Flt Permitted		0.93			1.00			0.74			0.97	1.00
Satd. Flow (perm)		1697			1859			1382			1813	1583
Volume (vph)	22	115	20	0	218	4	136	121	0	16	207	14
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	125	22	0	237	4	148	132	0	17	225	15
RTOR Reduction (vph)	0	16	0	0	2	0	0	0	0	0	0	8
Lane Group Flow (vph)	0	155	0	0	239	0	0	280	0	0	242	7
Turn Type	Perm			Perm			Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)		8.6			8.6			16.5			16.5	16.5
Effective Green, g (s)		8.6			8.6			16.5			16.5	16.5
Actuated g/C Ratio		0.26			0.26			0.50			0.50	0.50
Clearance Time (s)		4.0			4.0			4.0			4.0	4.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		441			483			689			904	789
v/s Ratio Prot					c0.13							
v/s Ratio Perm		0.09						c0.20			0.13	0.00
v/c Ratio		0.35			0.49			0.41			0.27	0.01
Uniform Delay, d1		10.0			10.4			5.2			4.8	4.2
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.5			0.8			0.4			0.2	0.0
Delay (s)		10.5			11.2			5.6			5.0	4.2
Level of Service		B			B			A			A	A
Approach Delay (s)		10.5			11.2			5.6			4.9	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	33.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0				4.0		4.0
Lane Util. Factor		0.91	1.00		0.91	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		5085	1583		5085	1583				1770		1583
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		5085	1583		5085	1583				1770		1583
Volume (vph)	0	1956	469	0	2307	70	0	0	0	549	0	542
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2126	510	0	2508	76	0	0	0	597	0	589
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	2126	510	0	2508	76	0	0	0	597	0	588
Turn Type			Free			Free				custom		custom
Protected Phases		4			8							
Permitted Phases			Free			Free				6		6
Actuated Green, G (s)		38.0	75.0		38.0	75.0				29.0		29.0
Effective Green, g (s)		38.0	75.0		38.0	75.0				29.0		29.0
Actuated g/C Ratio		0.51	1.00		0.51	1.00				0.39		0.39
Clearance Time (s)		4.0			4.0					4.0		4.0
Vehicle Extension (s)		3.0			3.0					3.0		3.0
Lane Grp Cap (vph)		2576	1583		2576	1583				684		612
v/s Ratio Prot		0.42			c0.49							
v/s Ratio Perm			0.32			0.05				0.34		c0.37
v/c Ratio		0.83	0.32		0.97	0.05				0.87		0.96
Uniform Delay, d1		15.7	0.0		18.0	0.0				21.3		22.5
Progression Factor		1.00	1.00		1.00	1.00				1.00		1.00
Incremental Delay, d2		2.3	0.5		12.1	0.1				14.4		28.0
Delay (s)		18.0	0.5		30.1	0.1				35.7		50.5
Level of Service		B	A		C	A				D		D
Approach Delay (s)		14.6			29.3			0.0			43.1	
Approach LOS		B			C			A			D	

Intersection Summary			
HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0	4.0		4.0			
Lane Util. Factor		0.91	1.00		0.91	1.00	1.00		1.00			
Frt		1.00	0.85		1.00	0.85	1.00		0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (prot)		5085	1583		5085	1583	1770		1583			
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (perm)		5085	1583		5085	1583	1770		1583			
Volume (vph)	0	1428	403	0	2473	854	1015	0	365	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1552	438	0	2688	928	1103	0	397	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	4	0	0	0
Lane Group Flow (vph)	0	1552	438	0	2688	928	1103	0	394	0	0	0
Turn Type			Free			Free	custom		custom			
Protected Phases		4			8							
Permitted Phases			Free			Free	2		2			
Actuated Green, G (s)		47.0	110.0		47.0	110.0	55.0		55.0			
Effective Green, g (s)		47.0	110.0		47.0	110.0	55.0		55.0			
Actuated g/C Ratio		0.43	1.00		0.43	1.00	0.50		0.50			
Clearance Time (s)		4.0			4.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		2173	1583		2173	1583	885		792			
v/s Ratio Prot		0.31			c0.53							
v/s Ratio Perm			0.28			0.59	c0.62		0.25			
v/c Ratio		0.71	0.28		1.24	0.59	1.25		0.50			
Uniform Delay, d1		26.0	0.0		31.5	0.0	27.5		18.3			
Progression Factor		1.00	1.00		1.00	1.00	1.00		1.00			
Incremental Delay, d2		1.1	0.4		110.8	1.6	120.3		2.2			
Delay (s)		27.1	0.4		142.3	1.6	147.8		20.5			
Level of Service		C	A		F	A	F		C			
Approach Delay (s)		21.2			106.2			114.1			0.0	
Approach LOS		C			F			F			A	

Intersection Summary			
HCM Average Control Delay	84.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	110.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	71	1623	76	596	2259	669	621	619	103	50	926	887
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	1764	83	648	2455	727	675	673	112	54	1007	964
RTOR Reduction (vph)	0	0	32	0	0	170	0	0	62	0	0	155
Lane Group Flow (vph)	77	1764	51	648	2455	557	675	673	50	54	1007	809
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	4.0	32.0	32.0	16.0	44.0	44.0	17.0	52.0	52.0	4.0	39.0	39.0
Effective Green, g (s)	4.0	32.0	32.0	16.0	44.0	44.0	17.0	52.0	52.0	4.0	39.0	39.0
Actuated g/C Ratio	0.03	0.27	0.27	0.13	0.37	0.37	0.14	0.43	0.43	0.03	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	1356	422	458	1865	580	486	1534	686	114	1150	514
v/s Ratio Prot	0.02	0.35		c0.19	c0.48		c0.20	0.19		0.02	0.28	
v/s Ratio Perm			0.03			0.35			0.03			c0.51
v/c Ratio	0.68	1.30	0.12	1.41	1.32	0.96	1.39	0.44	0.07	0.47	0.88	1.57
Uniform Delay, d1	57.4	44.0	33.4	52.0	38.0	37.2	51.5	23.8	19.9	57.0	38.2	40.5
Progression Factor	1.00	1.00	1.00	0.93	0.64	0.49	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.7	140.9	0.1	194.7	144.8	20.5	187.4	0.9	0.2	3.1	9.4	267.3
Delay (s)	72.0	184.9	33.5	243.0	169.3	38.6	238.9	24.7	20.1	60.1	47.6	307.8
Level of Service	E	F	C	F	F	D	F	C	C	E	D	F
Approach Delay (s)		173.9			156.9			123.4			171.8	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	158.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	114.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	282	1854	339	173	2123	149	404	708	110	446	493	174
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	307	2015	368	188	2308	162	439	770	120	485	536	189
RTOR Reduction (vph)	0	0	93	0	0	33	0	0	44	0	0	106
Lane Group Flow (vph)	307	2015	275	188	2308	129	439	770	76	485	536	83
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	52.0	52.0	9.0	51.0	51.0	17.6	27.0	27.0	16.0	25.4	25.4
Effective Green, g (s)	10.0	52.0	52.0	9.0	51.0	51.0	17.6	27.0	27.0	16.0	25.4	25.4
Actuated g/C Ratio	0.08	0.43	0.43	0.08	0.42	0.42	0.15	0.22	0.22	0.13	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	286	2204	686	257	2161	673	504	796	356	458	749	335
v/s Ratio Prot	c0.09	0.40		0.05	c0.45		0.13	c0.22		c0.14	0.15	
v/s Ratio Perm			0.17			0.08			0.05			0.05
v/c Ratio	1.07	0.91	0.40	0.73	1.07	0.19	0.87	0.97	0.21	1.06	0.72	0.25
Uniform Delay, d1	55.0	31.9	23.3	54.3	34.5	21.6	50.1	46.1	37.9	52.0	43.9	39.4
Progression Factor	1.32	0.59	0.32	1.19	0.61	0.69	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.9	0.7	0.0	1.0	31.7	0.0	15.1	24.9	1.4	58.5	5.8	1.8
Delay (s)	112.4	19.3	7.4	65.7	52.9	14.9	65.2	70.9	39.2	110.5	49.7	41.1
Level of Service	F	B	A	E	D	B	E	E	D	F	D	D
Approach Delay (s)		28.3			51.5			66.2			72.8	
Approach LOS		C			D			E			E	

Intersection Summary			
HCM Average Control Delay	49.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	527	1925	288	66	1927	144	469	738	150	186	859	298
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	573	2092	313	72	2095	157	510	802	163	202	934	324
RTOR Reduction (vph)	0	0	77	0	0	44	0	0	52	0	0	1
Lane Group Flow (vph)	573	2092	236	72	2095	113	510	802	111	202	934	323
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	17.0	56.6	56.6	3.2	42.8	42.8	15.0	35.2	35.2	9.0	29.2	46.2
Effective Green, g (s)	17.0	56.6	56.6	3.2	42.8	42.8	15.0	35.2	35.2	9.0	29.2	46.2
Actuated g/C Ratio	0.14	0.47	0.47	0.03	0.36	0.36	0.12	0.29	0.29	0.08	0.24	0.38
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	486	2398	747	92	1814	565	429	1038	464	257	861	662
v/s Ratio Prot	c0.17	0.41		0.02	c0.41		c0.15	0.23		0.06	c0.26	0.07
v/s Ratio Perm			0.15			0.07			0.07			0.14
v/c Ratio	1.18	0.87	0.32	0.78	1.15	0.20	1.19	0.77	0.24	0.79	1.08	0.49
Uniform Delay, d1	51.5	28.5	19.7	58.1	38.6	26.7	52.5	38.7	32.2	54.6	45.4	28.0
Progression Factor	1.31	0.61	0.44	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	92.6	2.2	0.1	34.1	76.5	0.2	106.1	5.6	1.2	14.6	56.3	0.6
Delay (s)	160.3	19.7	8.8	92.1	115.1	26.9	158.6	44.3	33.4	69.1	101.7	28.5
Level of Service	F	B	A	F	F	C	F	D	C	E	F	C
Approach Delay (s)		45.6			108.4			82.6			80.9	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	76.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	102.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	316	1541	92	20	1449	264	217	386	143	169	911	182
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	343	1675	100	22	1575	287	236	420	155	184	990	198
RTOR Reduction (vph)	0	0	43	0	0	115	0	0	89	0	0	89
Lane Group Flow (vph)	343	1675	57	22	1575	172	236	420	66	184	990	109
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	39.8	39.8	1.6	31.4	31.4	7.0	24.1	24.1	8.5	25.6	25.6
Effective Green, g (s)	10.0	39.8	39.8	1.6	31.4	31.4	7.0	24.1	24.1	8.5	25.6	25.6
Actuated g/C Ratio	0.11	0.44	0.44	0.02	0.35	0.35	0.08	0.27	0.27	0.09	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	381	2249	700	61	1774	552	267	948	424	324	1007	450
v/s Ratio Prot	c0.10	0.33		0.01	c0.31		c0.07	0.12		0.05	c0.28	
v/s Ratio Perm			0.04			0.11			0.04			0.07
v/c Ratio	0.90	0.74	0.08	0.36	0.89	0.31	0.88	0.44	0.15	0.57	0.98	0.24
Uniform Delay, d1	39.5	20.9	14.5	43.7	27.6	21.4	41.1	27.4	25.2	39.0	32.0	24.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.71	0.34
Incremental Delay, d2	23.5	1.4	0.1	3.6	5.8	0.3	27.3	1.5	0.8	2.2	24.3	1.3
Delay (s)	63.0	22.3	14.6	47.3	33.5	21.7	68.4	28.9	25.9	39.0	47.1	9.6
Level of Service	E	C	B	D	C	C	E	C	C	D	D	A
Approach Delay (s)		28.5			31.8			39.8			40.6	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	33.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.91	1.00	1.00	0.91		1.00		1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.94	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		5085	1583	1770	5085		1770		1583	3433	3310	
Flt Permitted		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (perm)		5085	1583	1770	5085		1770		1583	3433	3310	
Volume (vph)	0	1026	81	567	852	0	55	0	548	407	225	171
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1115	88	616	926	0	60	0	596	442	245	186
RTOR Reduction (vph)	0	0	35	0	0	0	0	0	483	0	121	0
Lane Group Flow (vph)	0	1115	53	616	926	0	60	0	113	442	310	0
Turn Type			Perm	Prot			Prot		custom	Prot		
Protected Phases		4		3	8		5			1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		24.0	24.0	38.0	66.0		6.9		18.0	14.0	25.1	
Effective Green, g (s)		24.0	24.0	38.0	66.0		6.9		18.0	14.0	25.1	
Actuated g/C Ratio		0.22	0.22	0.35	0.60		0.06		0.16	0.13	0.23	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1109	345	611	3051		111		259	437	755	
v/s Ratio Prot		c0.22		c0.35	0.18		0.03			c0.13	c0.09	
v/s Ratio Perm			0.03						0.07			
v/c Ratio		1.01	0.15	1.01	0.30		0.54		0.44	1.01	0.41	
Uniform Delay, d1		43.0	34.8	36.0	10.8		50.0		41.4	48.0	36.1	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		28.3	0.2	38.4	0.1		5.3		5.3	45.9	1.6	
Delay (s)		71.3	35.0	74.4	10.8		55.3		46.7	93.9	37.8	
Level of Service		E	C	E	B		E		D	F	D	
Approach Delay (s)		68.7			36.2			47.5			66.2	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM Average Control Delay	53.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	0.97	0.91			0.91	1.00	0.95	0.95	0.88	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.95		1.00
Satd. Flow (prot)	3433	5085			5085	1583	1681	1770	2787	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00	0.51		1.00
Satd. Flow (perm)	3433	5085			5085	1583	1681	1770	2787	1846		1583
Volume (vph)	332	1181	0	0	1500	385	239	378	512	212	0	460
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	361	1284	0	0	1630	418	260	411	557	230	0	500
RTOR Reduction (vph)	0	0	0	0	0	111	0	0	86	0	0	235
Lane Group Flow (vph)	361	1284	0	0	1630	307	260	411	472	230	0	265
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	11.0	47.0			32.0	32.0	25.0	25.0	25.0	16.0		16.0
Effective Green, g (s)	11.0	47.0			32.0	32.0	25.0	25.0	25.0	16.0		16.0
Actuated g/C Ratio	0.11	0.47			0.32	0.32	0.25	0.25	0.25	0.16		0.16
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	378	2390			1627	507	420	443	697	295		253
v/s Ratio Prot	c0.11	0.25			c0.32		0.15	c0.23				
v/s Ratio Perm						0.19			0.17	0.12		c0.17
v/c Ratio	0.96	0.54			1.00	0.61	0.62	0.93	0.68	0.78		1.05
Uniform Delay, d1	44.3	18.8			34.0	28.7	33.3	36.6	33.8	40.3		42.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	34.4	0.2			22.8	2.0	6.7	28.0	5.2	12.3		69.3
Delay (s)	78.7	19.0			56.8	30.7	40.0	64.6	39.1	52.6		111.3
Level of Service	E	B			E	C	D	E	D	D		F
Approach Delay (s)		32.1			51.4			47.8			92.8	
Approach LOS		C			D			D			F	

Intersection Summary			
HCM Average Control Delay	50.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

2025 BUILDOUT PLUS PROJECT PHASES 1-5 WITH MITIGATION TRAFFIC CONDITION

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	3539	1583
Volume (vph)	6	1991	75	288	2181	183	79	102	406	157	135	24
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	2164	82	313	2371	199	86	111	441	171	147	26
RTOR Reduction (vph)	0	0	43	0	0	39	0	0	2	0	0	21
Lane Group Flow (vph)	7	2164	39	313	2371	160	86	111	439	171	147	5
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	43.3	43.3	10.9	53.4	53.4	4.0	14.8	25.7	5.0	15.8	15.8
Effective Green, g (s)	0.8	43.3	43.3	10.9	53.4	53.4	4.0	14.8	25.7	5.0	15.8	15.8
Actuated g/C Ratio	0.01	0.48	0.48	0.12	0.59	0.59	0.04	0.16	0.29	0.06	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	31	2446	762	416	3017	939	153	306	522	191	621	278
v/s Ratio Prot	0.00	c0.43		0.09	0.47		0.03	0.06	c0.10	c0.05	0.04	
v/s Ratio Perm			0.02			0.10			0.18			0.00
v/c Ratio	0.23	0.88	0.05	0.75	0.79	0.17	0.56	0.36	0.84	0.90	0.24	0.02
Uniform Delay, d1	44.3	21.1	12.4	38.2	13.9	8.3	42.1	33.4	30.2	42.2	31.9	30.7
Progression Factor	1.00	1.00	1.00	1.08	0.74	0.26	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	4.2	0.0	2.4	0.4	0.0	4.7	3.3	11.6	37.1	0.9	0.1
Delay (s)	48.0	25.3	12.5	43.7	10.7	2.2	46.8	36.7	41.9	79.4	32.8	30.8
Level of Service	D	C	B	D	B	A	D	D	D	E	C	C
Approach Delay (s)		24.9			13.7			41.6			55.8	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	425	1995	151	101	1910	64	269	229	144	255	311	458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	462	2168	164	110	2076	70	292	249	157	277	338	498
RTOR Reduction (vph)	0	0	51	0	0	26	0	0	87	0	0	2
Lane Group Flow (vph)	462	2168	113	110	2076	44	292	249	70	277	338	496
Turn Type	Prot		Perm	Prot		pm+ov	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.0	46.8	46.8	4.0	37.8	45.8	8.0	15.2	15.2	8.0	15.2	28.2
Effective Green, g (s)	13.0	46.8	46.8	4.0	37.8	45.8	8.0	15.2	15.2	8.0	15.2	28.2
Actuated g/C Ratio	0.14	0.52	0.52	0.04	0.42	0.51	0.09	0.17	0.17	0.09	0.17	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	496	2644	823	153	2136	876	305	598	267	305	598	566
v/s Ratio Prot	c0.13	0.43		0.03	c0.41	0.00	c0.09	0.07		0.08	0.10	c0.13
v/s Ratio Perm			0.07			0.02			0.04			0.19
v/c Ratio	0.93	0.82	0.14	0.72	0.97	0.05	0.96	0.42	0.26	0.91	0.57	0.88
Uniform Delay, d1	38.1	18.1	11.2	42.4	25.6	11.1	40.8	33.4	32.5	40.6	34.4	29.2
Progression Factor	1.09	0.74	0.21	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.2	0.8	0.0	14.9	13.4	0.0	39.7	2.1	2.4	28.9	3.8	14.2
Delay (s)	53.7	14.1	2.4	57.4	39.0	11.2	80.5	35.6	34.9	69.5	38.2	43.5
Level of Service	D	B	A	E	D	B	F	D	C	E	D	D
Approach Delay (s)		20.0			39.1			54.2			48.3	
Approach LOS		B			D			D			D	

Intersection Summary			
HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	261	253	250	279	151	268
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	284	275	272	303	164	291

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	284	275	272	303	164	291
Volume Left (vph)	284	0	0	0	164	0
Volume Right (vph)	0	275	0	303	0	0
Hadj (s)	0.53	-0.67	0.03	-0.67	0.53	0.03
Departure Headway (s)	7.7	6.5	7.2	6.5	7.8	7.3
Degree Utilization, x	0.61	0.50	0.54	0.54	0.36	0.59
Capacity (veh/h)	448	533	489	543	445	473
Control Delay (s)	20.9	14.7	17.1	15.7	13.8	19.0
Approach Delay (s)	17.8		16.4		17.1	
Approach LOS	C		C		C	

Intersection Summary			
Delay	17.1		
HCM Level of Service	C		
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Volume (vph)	250	265	694	514	510	736
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	288	754	559	554	800
RTOR Reduction (vph)	0	214	0	0	0	133
Lane Group Flow (vph)	272	74	754	559	554	667
Turn Type		Perm	Prot			pm+ov
Protected Phases	6		5	2	4	5
Permitted Phases		6				4
Actuated Green, G (s)	15.5	15.5	18.7	38.2	13.8	32.5
Effective Green, g (s)	15.5	15.5	18.7	38.2	13.8	32.5
Actuated g/C Ratio	0.26	0.26	0.31	0.64	0.23	0.54
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	914	409	1070	2253	790	963
v/s Ratio Prot	c0.08		0.22	0.16	0.16	c0.22
v/s Ratio Perm		0.05				0.21
v/c Ratio	0.30	0.18	0.70	0.25	0.70	0.69
Uniform Delay, d1	17.9	17.3	18.2	4.7	21.2	10.1
Progression Factor	1.00	1.00	1.00	1.00	0.96	1.21
Incremental Delay, d2	0.8	1.0	2.1	0.3	1.3	1.0
Delay (s)	18.7	18.3	20.3	5.0	21.7	13.2
Level of Service	B	B	C	A	C	B
Approach Delay (s)	18.5			13.8	16.7	
Approach LOS	B			B	B	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1763		1681	1696	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.52	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1763		1681	918	1583
Volume (vph)	684	255	100	49	299	571	59	17	9	534	40	375
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	743	277	109	53	325	621	64	18	10	580	43	408
RTOR Reduction (vph)	0	0	56	0	0	196	0	9	0	0	0	53
Lane Group Flow (vph)	743	277	53	53	325	425	64	19	0	303	320	355
Turn Type	Prot		Perm	Prot		pm+ov	Prot			Prot		pm+ov
Protected Phases	1	6		5	2	3	7	4		3	8	1
Permitted Phases			6			2						8
Actuated Green, G (s)	52.5	58.5	58.5	6.9	12.9	41.9	7.0	9.6		29.0	42.6	84.1
Effective Green, g (s)	52.5	58.5	58.5	6.9	12.9	41.9	7.0	9.6		29.0	42.6	84.1
Actuated g/C Ratio	0.44	0.49	0.49	0.06	0.11	0.35	0.06	0.08		0.24	0.36	0.70
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	774	1725	772	102	380	553	103	141		406	514	1109
v/s Ratio Prot	c0.42	0.08		0.03	c0.09	c0.19	0.04	0.01		0.18	0.15	0.14
v/s Ratio Perm			0.03			0.08					c0.07	0.08
v/c Ratio	0.96	0.16	0.07	0.52	0.86	0.77	0.62	0.13		0.75	0.62	0.32
Uniform Delay, d1	32.7	17.1	16.3	54.9	52.6	34.7	55.2	51.3		42.1	32.0	6.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.05	1.05	1.76
Incremental Delay, d2	22.7	0.2	0.2	4.4	21.1	6.4	11.1	0.4		5.7	1.8	0.1
Delay (s)	55.4	17.3	16.5	59.4	73.8	41.1	66.3	51.8		49.9	35.3	12.3
Level of Service	E	B	B	E	E	D	E	D		D	D	B
Approach Delay (s)		42.3			52.7			61.9			30.5	
Approach LOS		D			D			E			C	

Intersection Summary			
HCM Average Control Delay	42.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	36	1551	67	322	1236	391	328	507	4	18	507	603
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1686	73	350	1343	425	357	551	4	20	551	655
RTOR Reduction (vph)	0	0	38	0	0	149	0	0	3	0	0	2
Lane Group Flow (vph)	39	1686	35	350	1343	276	357	551	1	20	551	653
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		1	6		5	2	3
Permitted Phases			4			8			6			2
Actuated Green, G (s)	2.4	31.6	31.6	17.0	46.2	46.2	10.0	23.8	23.8	1.6	15.4	32.4
Effective Green, g (s)	2.4	31.6	31.6	17.0	46.2	46.2	10.0	23.8	23.8	1.6	15.4	32.4
Actuated g/C Ratio	0.03	0.35	0.35	0.19	0.51	0.51	0.11	0.26	0.26	0.02	0.17	0.36
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	92	1785	556	648	2610	813	381	936	419	61	606	640
v/s Ratio Prot	0.01	c0.33		0.10	0.26		c0.10	0.16		0.01	0.16	c0.19
v/s Ratio Perm			0.02			0.17			0.00			0.22
v/c Ratio	0.42	0.94	0.06	0.54	0.51	0.34	0.94	0.59	0.00	0.33	0.91	1.02
Uniform Delay, d1	43.1	28.3	19.4	33.0	14.5	12.9	39.7	28.8	24.4	43.7	36.6	28.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	10.8	0.0	0.9	0.2	0.2	30.2	2.7	0.0	3.1	20.0	40.8
Delay (s)	46.2	39.2	19.4	33.9	14.7	13.2	69.9	31.5	24.4	46.8	56.6	69.6
Level of Service	D	D	B	C	B	B	E	C	C	D	E	E
Approach Delay (s)		38.5			17.5			46.5			63.4	
Approach LOS		D			B			D			E	

Intersection Summary			
HCM Average Control Delay	37.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	3539	1583
Volume (vph)	8	2276	125	460	2207	227	102	401	471	302	498	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	2474	136	500	2399	247	111	436	512	328	541	35
RTOR Reduction (vph)	0	0	49	0	0	37	0	0	1	0	0	27
Lane Group Flow (vph)	9	2474	87	500	2399	210	111	436	511	328	541	8
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.8	51.0	51.0	18.2	68.4	68.4	7.7	24.8	43.0	10.0	27.1	27.1
Effective Green, g (s)	0.8	51.0	51.0	18.2	68.4	68.4	7.7	24.8	43.0	10.0	27.1	27.1
Actuated g/C Ratio	0.01	0.42	0.42	0.15	0.57	0.57	0.06	0.21	0.36	0.08	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	23	2161	673	521	2898	902	220	385	620	286	799	357
v/s Ratio Prot	0.00	c0.49		c0.15	0.47		0.03	c0.23	0.13	c0.10	0.15	
v/s Ratio Perm			0.05			0.13			0.20			0.00
v/c Ratio	0.39	1.14	0.13	0.96	0.83	0.23	0.50	1.13	0.82	1.15	0.68	0.02
Uniform Delay, d1	59.4	34.5	21.0	50.5	21.0	12.8	54.3	47.6	35.1	55.0	42.5	36.1
Progression Factor	1.00	1.00	1.00	0.70	0.42	0.35	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.7	71.2	0.1	5.3	0.2	0.0	1.8	87.0	8.8	98.9	4.6	0.1
Delay (s)	70.0	105.7	21.1	40.6	9.0	4.5	56.1	134.6	43.8	153.9	47.0	36.3
Level of Service	E	F	C	D	A	A	E	F	D	F	D	D
Approach Delay (s)		101.2			13.7			82.5			85.4	
Approach LOS		F			B			F			F	

Intersection Summary			
HCM Average Control Delay	61.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	678	2023	355	115	2135	261	250	325	99	188	312	512
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	737	2199	386	125	2321	284	272	353	108	204	339	557
RTOR Reduction (vph)	0	0	92	0	0	66	0	0	87	0	0	1
Lane Group Flow (vph)	737	2199	294	125	2321	218	272	353	21	204	339	556
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	25.0	70.2	70.2	7.8	53.0	53.0	10.0	17.0	17.0	9.0	16.0	41.0
Effective Green, g (s)	25.0	70.2	70.2	7.8	53.0	53.0	10.0	17.0	17.0	9.0	16.0	41.0
Actuated g/C Ratio	0.21	0.59	0.59	0.06	0.44	0.44	0.08	0.14	0.14	0.08	0.13	0.34
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	715	2975	926	223	2246	699	286	501	224	257	472	594
v/s Ratio Prot	c0.21	0.43		0.04	c0.46		c0.08	0.10		0.06	0.10	c0.19
v/s Ratio Perm			0.19			0.14			0.01			0.16
v/c Ratio	1.03	0.74	0.32	0.56	1.03	0.31	0.95	0.70	0.10	0.79	0.72	0.94
Uniform Delay, d1	47.5	18.2	12.7	54.4	33.5	21.7	54.8	49.1	44.8	54.6	49.8	38.2
Progression Factor	1.31	0.31	0.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.3	0.1	0.0	3.2	28.2	0.3	40.0	8.1	0.8	15.4	9.1	22.1
Delay (s)	81.6	5.7	0.1	57.6	61.7	22.0	94.7	57.2	45.7	70.0	58.9	60.4
Level of Service	F	A	A	E	E	C	F	E	D	E	E	E
Approach Delay (s)		21.9			57.4			69.4			61.7	
Approach LOS		C			E			E			E	

Intersection Summary			
HCM Average Control Delay	44.2	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	450	83	278	409	207	191
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	489	90	302	445	225	208

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	489	90	302	445	225	208
Volume Left (vph)	489	0	0	0	225	0
Volume Right (vph)	0	90	0	445	0	0
Hadj (s)	0.53	-0.67	0.03	-0.67	0.53	0.03
Departure Headway (s)	8.1	6.9	7.4	6.7	8.2	7.7
Degree Utilization, x	1.10	0.17	0.62	0.82	0.51	0.44
Capacity (veh/h)	457	508	483	532	432	460
Control Delay (s)	98.2	10.1	20.4	32.6	18.3	15.5
Approach Delay (s)	84.4		27.6		16.9	
Approach LOS	F		D		C	

Intersection Summary			
Delay	43.7		
HCM Level of Service	E		
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Volume (vph)	465	712	821	243	739	968
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	505	774	892	264	803	1052
RTOR Reduction (vph)	0	300	0	0	0	26
Lane Group Flow (vph)	505	474	892	264	803	1026
Turn Type		Perm	Prot			pm+ov
Protected Phases	6		5	2	4	5
Permitted Phases		6				4
Actuated Green, G (s)	30.0	30.0	53.0	87.0	25.0	78.0
Effective Green, g (s)	30.0	30.0	53.0	87.0	25.0	78.0
Actuated g/C Ratio	0.25	0.25	0.44	0.72	0.21	0.65
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	885	396	1516	2566	715	1082
v/s Ratio Prot	0.14		0.26	0.07	c0.23	c0.42
v/s Ratio Perm		c0.30				0.23
v/c Ratio	0.57	1.20	0.59	0.10	1.12	0.95
Uniform Delay, d1	39.4	45.0	25.3	4.9	47.5	19.2
Progression Factor	1.00	1.00	1.00	1.00	0.89	0.68
Incremental Delay, d2	2.7	110.7	0.6	0.1	57.4	2.3
Delay (s)	42.0	155.7	25.9	5.0	99.8	15.3
Level of Service	D	F	C	A	F	B
Approach Delay (s)	110.8			21.1	51.9	
Approach LOS	F			C	D	

Intersection Summary			
HCM Average Control Delay	61.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1635		1681	1699	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1635		1681	0	1583
Volume (vph)	558	513	135	25	581	1095	249	18	82	807	77	678
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	607	558	147	27	632	1190	271	20	89	877	84	737
RTOR Reduction (vph)	0	0	85	0	0	162	0	81	0	0	0	85
Lane Group Flow (vph)	607	558	62	27	632	1028	271	28	0	468	493	652
Turn Type	Prot		Perm	Prot		pm+ov	Prot			Prot		pm+ov
Protected Phases	1	6		5	2	3	7	4		3	8	1
Permitted Phases			6			2						8
Actuated Green, G (s)	32.0	50.5	50.5	7.3	25.8	61.8	23.2	10.2		36.0	36.0	55.0
Effective Green, g (s)	32.0	50.5	50.5	7.3	25.8	61.8	23.2	10.2		36.0	36.0	55.0
Actuated g/C Ratio	0.27	0.42	0.42	0.06	0.22	0.52	0.19	0.08		0.30	0.30	0.46
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	472	1489	666	108	761	815	342	139		504	510	778
v/s Ratio Prot	c0.34	0.16		0.02	0.18	c0.38	c0.15	0.02		0.28	0.29	0.22
v/s Ratio Perm			0.04			0.27						0.19
v/c Ratio	1.29	0.37	0.09	0.25	0.83	1.26	0.79	0.20		0.93	0.97	0.84
Uniform Delay, d1	44.0	23.9	20.9	53.7	45.0	29.1	46.1	51.1		40.8	41.4	28.6
Progression Factor	1.00	1.00	1.00	0.89	0.93	0.91	1.00	1.00		0.72	0.73	0.38
Incremental Delay, d2	144.0	0.2	0.1	0.3	2.7	119.8	11.9	0.7		15.1	21.6	4.5
Delay (s)	188.0	24.1	21.0	47.9	44.6	146.2	58.0	51.8		44.6	51.6	15.4
Level of Service	F	C	C	D	D	F	E	D		D	D	B
Approach Delay (s)		99.6			110.0			56.2			34.0	
Approach LOS		F			F			E			C	

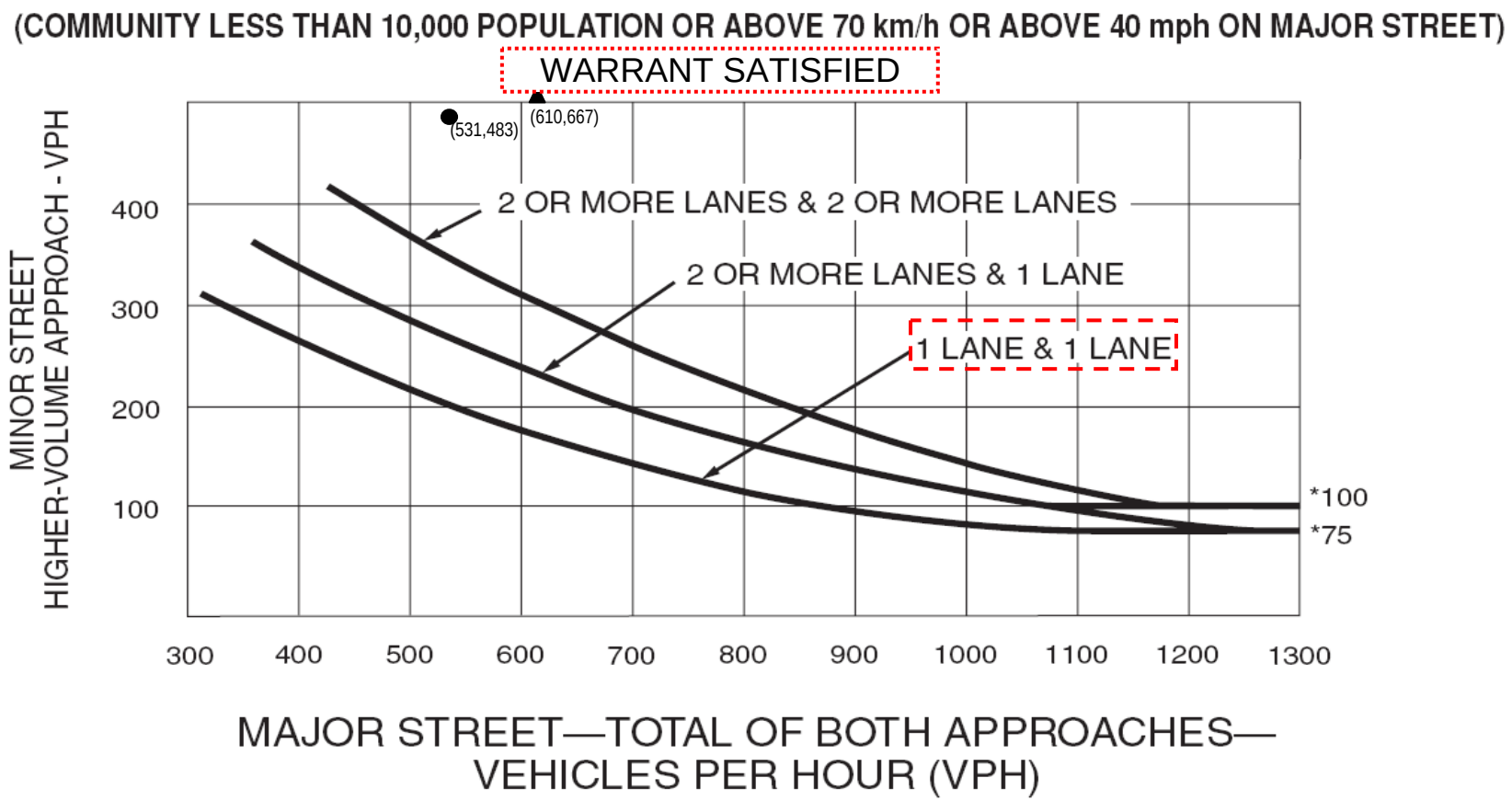
Intersection Summary			
HCM Average Control Delay	78.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	122.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	71	1623	76	596	2259	669	621	619	103	50	926	887
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	1764	83	648	2455	727	675	673	112	54	1007	964
RTOR Reduction (vph)	0	0	32	0	0	185	0	0	60	0	0	1
Lane Group Flow (vph)	77	1764	51	648	2455	542	675	673	52	54	1007	963
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		1	6		5	2	3
Permitted Phases			4			8			6			2
Actuated Green, G (s)	4.0	33.0	33.0	24.0	53.0	53.0	18.0	43.0	43.0	4.0	29.0	53.0
Effective Green, g (s)	4.0	33.0	33.0	24.0	53.0	53.0	18.0	43.0	43.0	4.0	29.0	53.0
Actuated g/C Ratio	0.03	0.28	0.28	0.20	0.44	0.44	0.15	0.36	0.36	0.03	0.24	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	1398	435	687	2246	699	515	1268	567	114	855	752
v/s Ratio Prot	0.02	c0.35		0.19	0.48		c0.20	0.19		0.02	0.28	c0.26
v/s Ratio Perm			0.03			0.34			0.03			0.35
v/c Ratio	0.68	1.26	0.12	0.94	1.09	0.78	1.31	0.53	0.09	0.47	1.18	1.28
Uniform Delay, d1	57.4	43.5	32.6	47.3	33.5	28.5	51.0	30.5	25.5	57.0	45.5	33.5
Progression Factor	1.00	1.00	1.00	0.95	0.59	0.36	0.94	0.76	0.90	1.00	1.00	1.00
Incremental Delay, d2	14.7	123.7	0.1	15.3	47.1	3.4	149.3	1.1	0.2	3.1	92.1	136.6
Delay (s)	72.0	167.2	32.7	60.4	66.7	13.6	197.4	24.2	23.1	60.1	137.6	170.1
Level of Service	E	F	C	E	E	B	F	C	C	E	F	F
Approach Delay (s)		157.6			55.6			104.2			151.0	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM Average Control Delay	105.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	114.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX D

SIGNAL WARRANT ANALYSIS WORKSHEETS



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

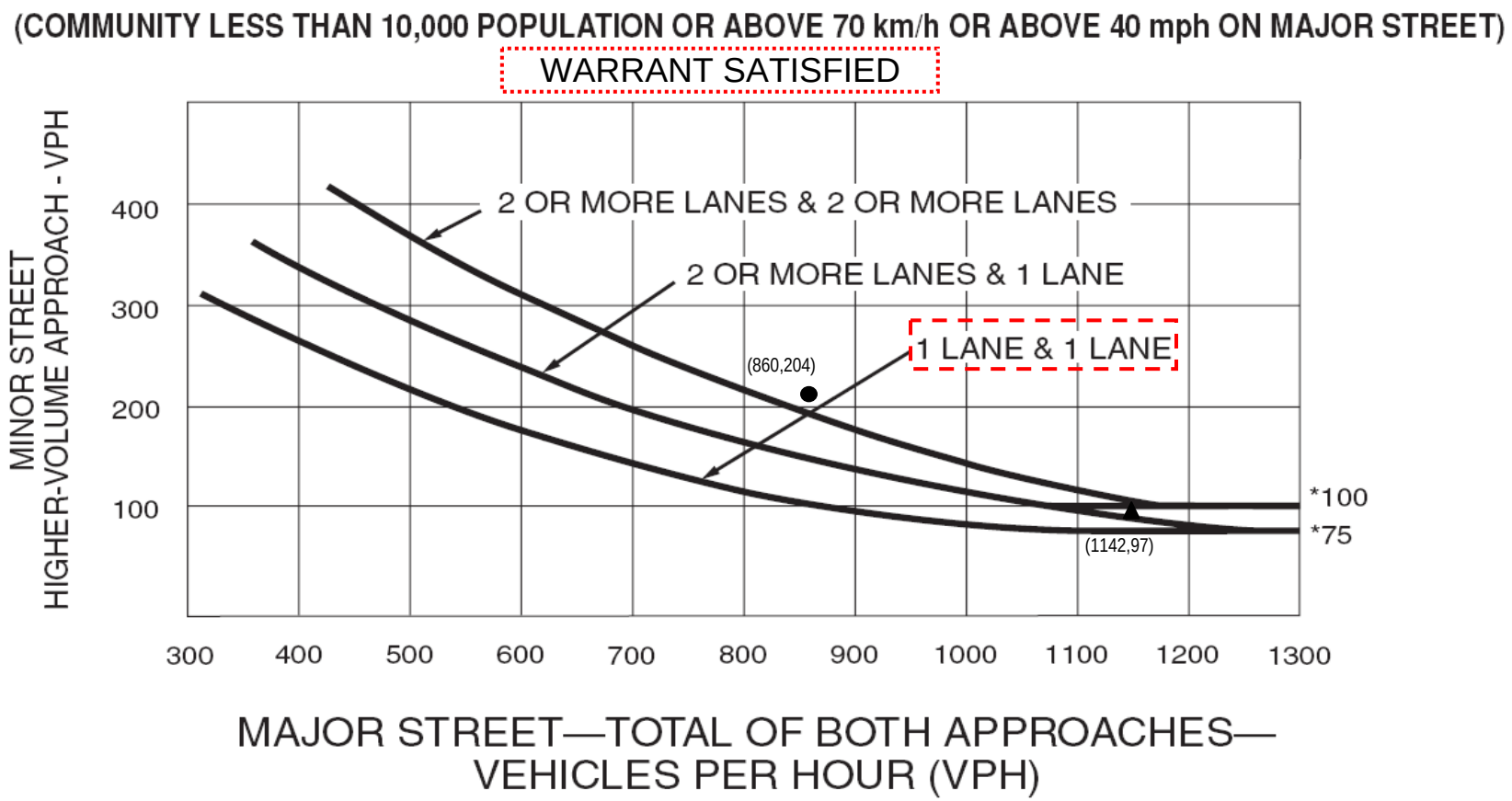
● AM Peak Hour (531,483)

▲ PM Peak Hour (610,667)

Source: Federal Highway Administration, MUTCD 2003, Figure 4C-2

DKS Associates
TRANSPORTATION SOLUTIONS

Figure C-1
2010 Baseline + Project Phase 1 Condition Peak Hour Signal Warrant Analysis for Hayes Avenue and Palo Alto Avenue



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

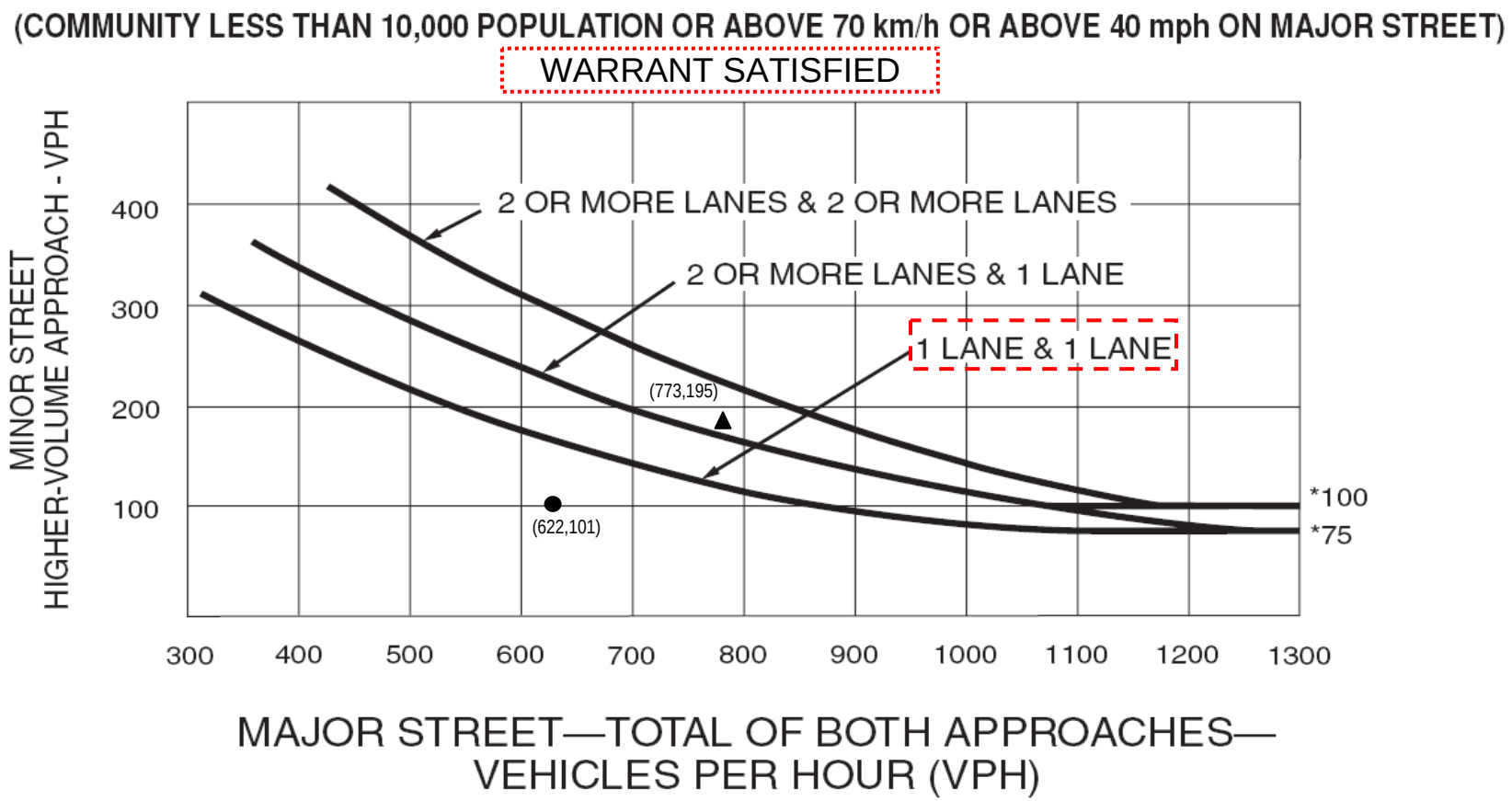
● AM Peak Hour (860,204)

▲ PM Peak Hour (1142,97)

Source: Federal Highway Administration, MUTCD 2003, Figure 4C-2

DKS Associates
TRANSPORTATION SOLUTIONS

Figure C-2
2010 Baseline + Project Phase 1 Condition Peak Hour Signal Warrant Analysis for Grantland Avenue and Bullard Avenue



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

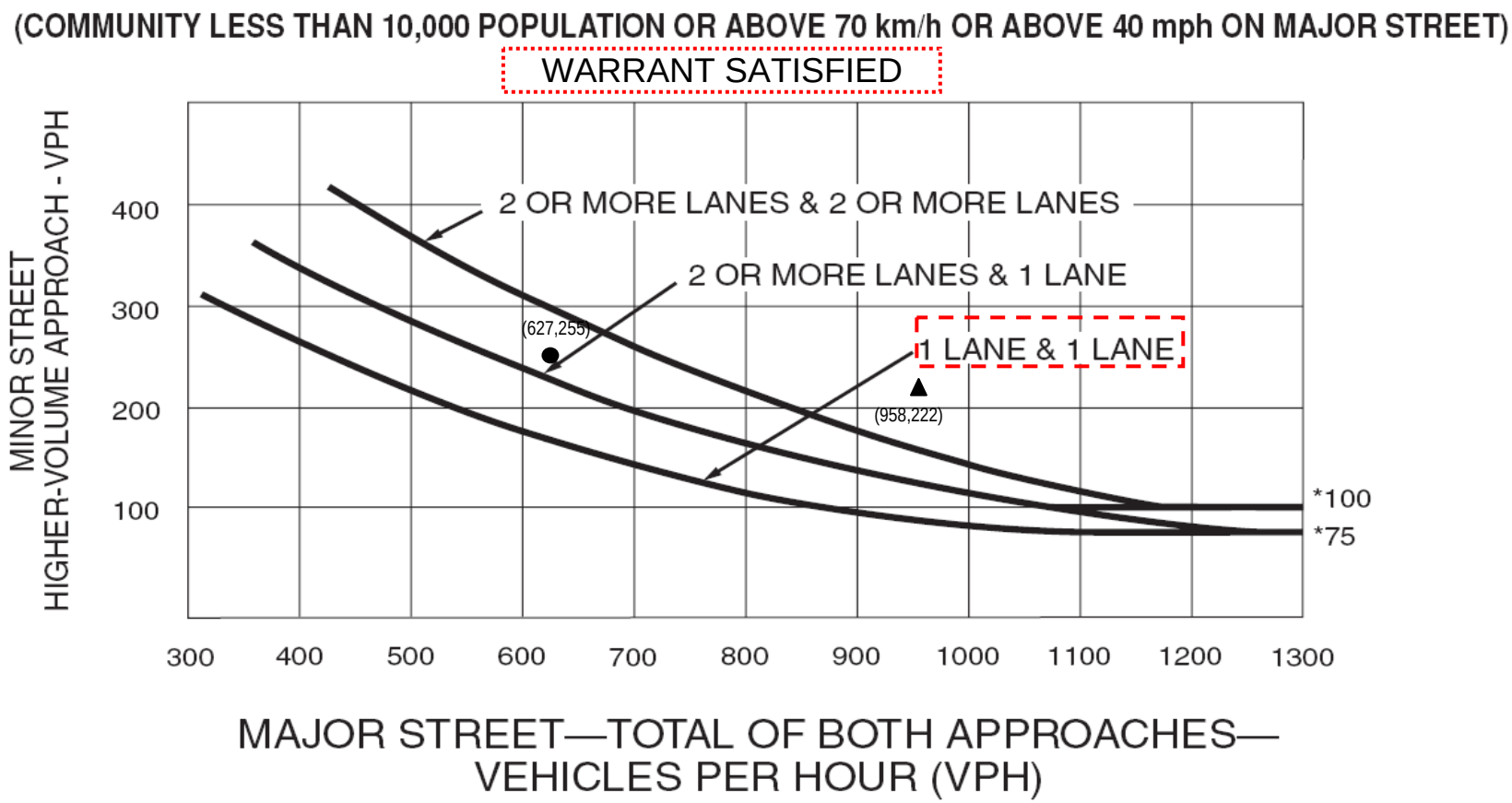
● AM Peak Hour (622,101)

▲ PM Peak Hour (773,195)

Source: Federal Highway Administration, MUTCD 2003, Figure 4C-2

DKS Associates
TRANSPORTATION SOLUTIONS

Figure C-3
2010 Baseline + Project Phase 1 Condition Peak Hour Signal Warrant Analysis for Grantland Avenue and Barstow Avenue



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

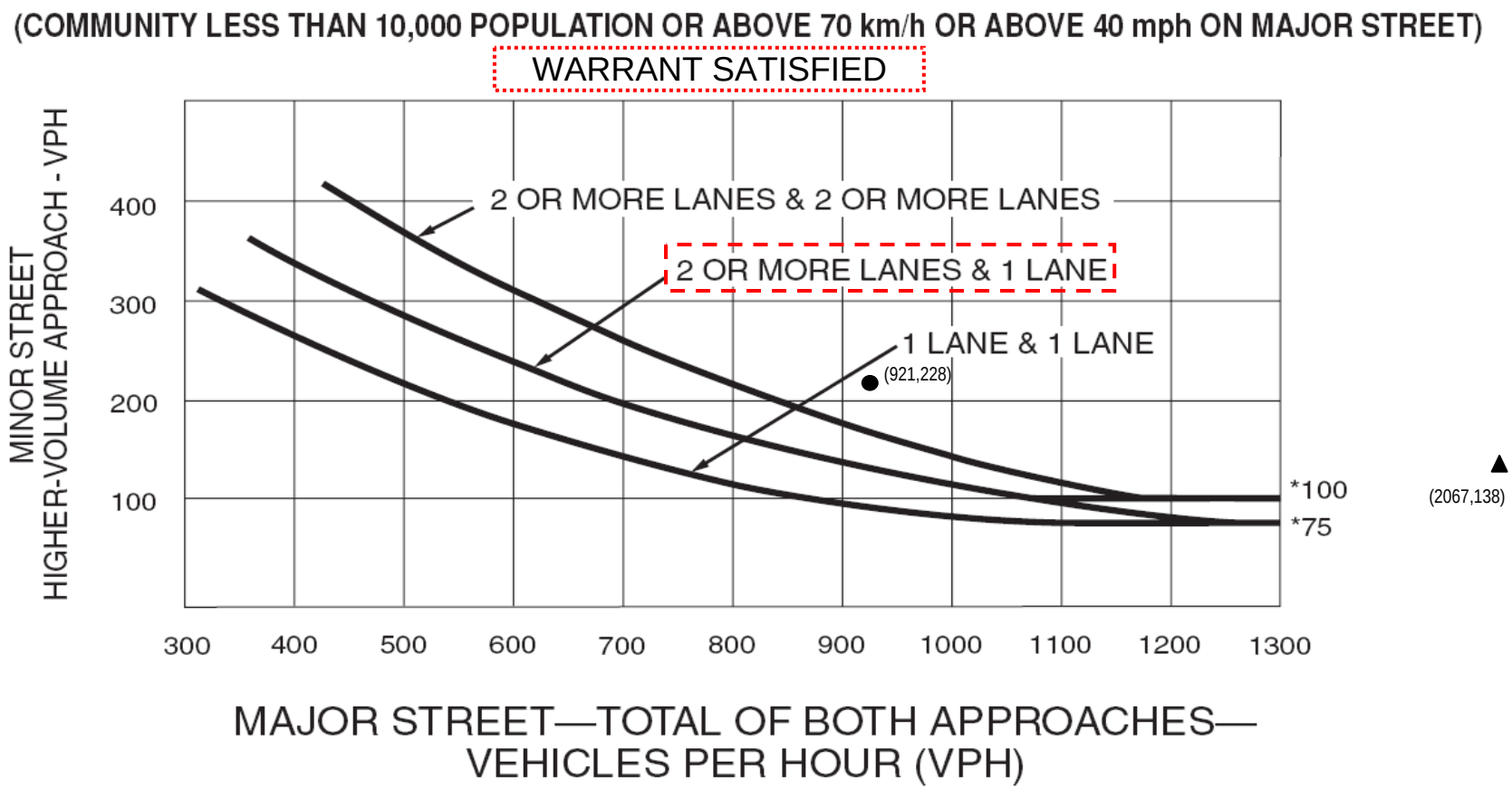
● AM Peak Hour (627,255)

▲ PM Peak Hour (958, 222)

Source: Federal Highway Administration, MUTCD 2003, Figure 4C-2

DKS Associates
TRANSPORTATION SOLUTIONS

Figure C-4
2012 Baseline + Project Phases 1 & 2 Condition Peak Hour Signal Warrant Analysis for Polk Avenue and Sierra Avenue



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

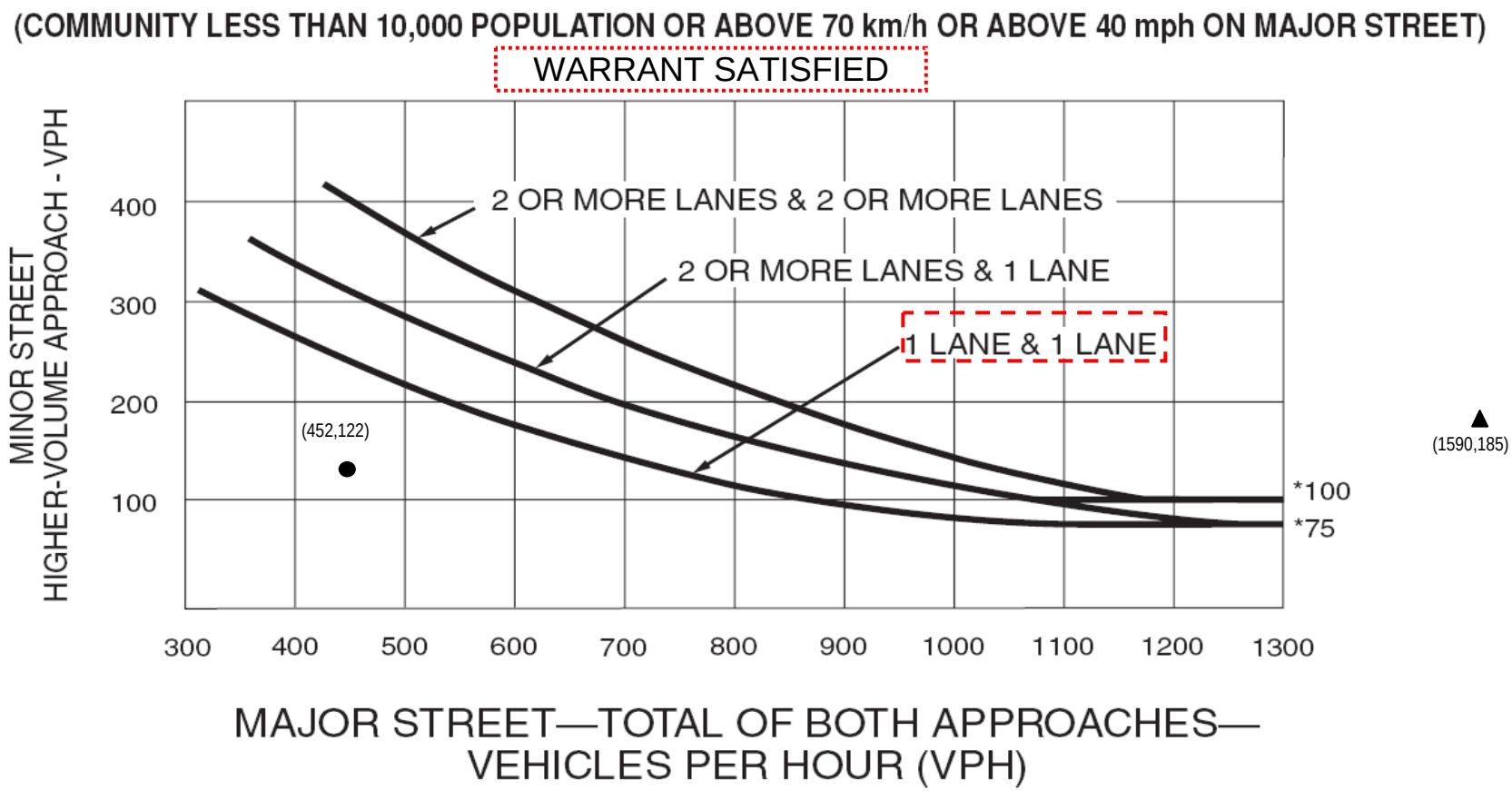
● AM Peak Hour (921,228)

▲ PM Peak Hour (2067,138)

Source: Federal Highway Administration, MUTCD 2003, Figure 4C-2

DKS Associates
TRANSPORTATION SOLUTIONS

Figure C-5
2012 Baseline + Project Phases 1 & 2 Condition Peak Hour Signal Warrant Analysis for Dante Avenue and Bullard Avenue



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

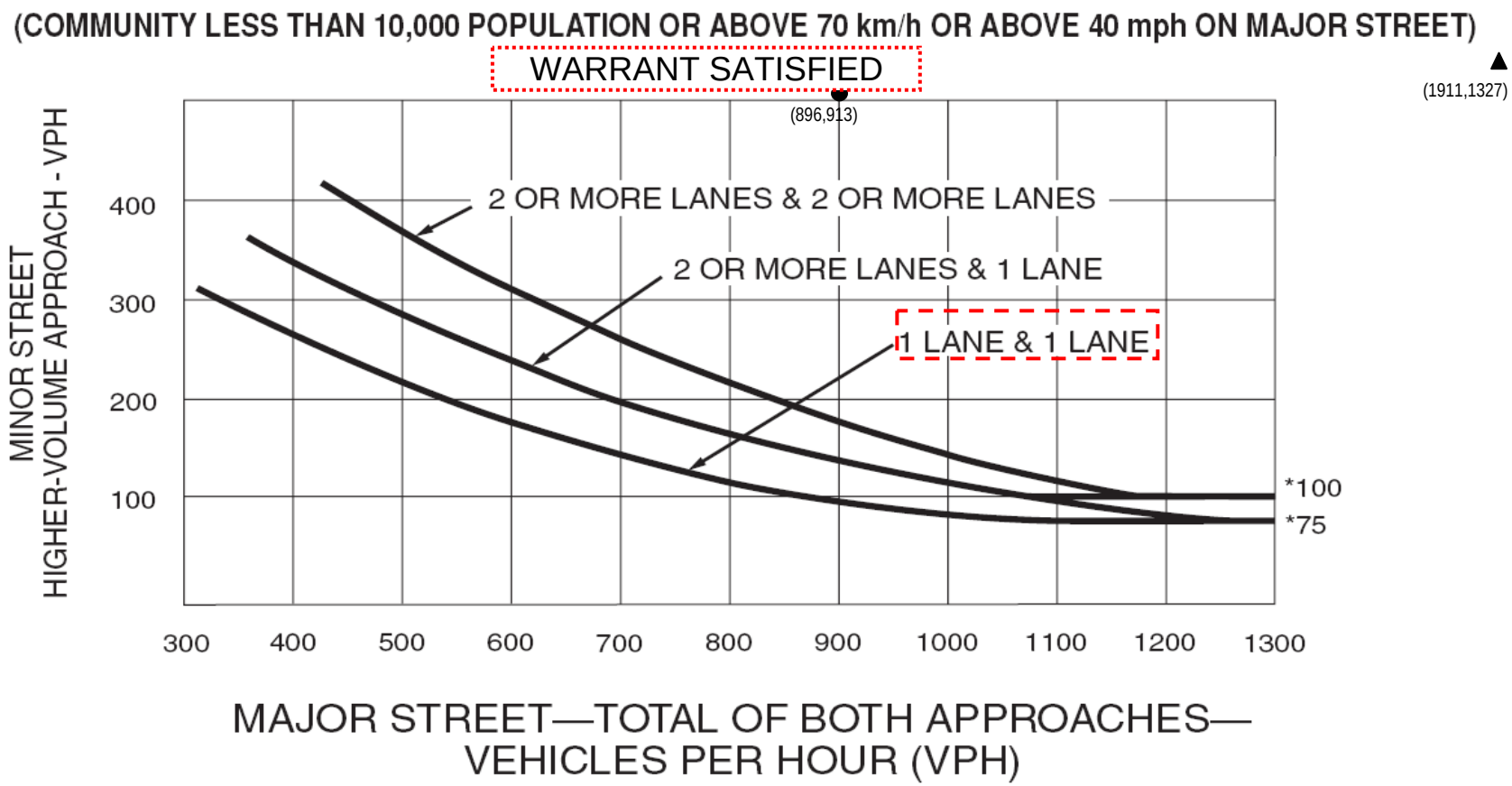
● AM Peak Hour (452,122)

▲ PM Peak Hour (1590,185)

Source: Federal Highway Administration, MUTCD 2003, Figure 4C-2

DKS Associates
TRANSPORTATION SOLUTIONS

Figure C-6
2017 Baseline + Project Phases 1-4 Condition Peak Hour Signal Warrant Analysis for Parkway Drive and Herndon Avenue



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

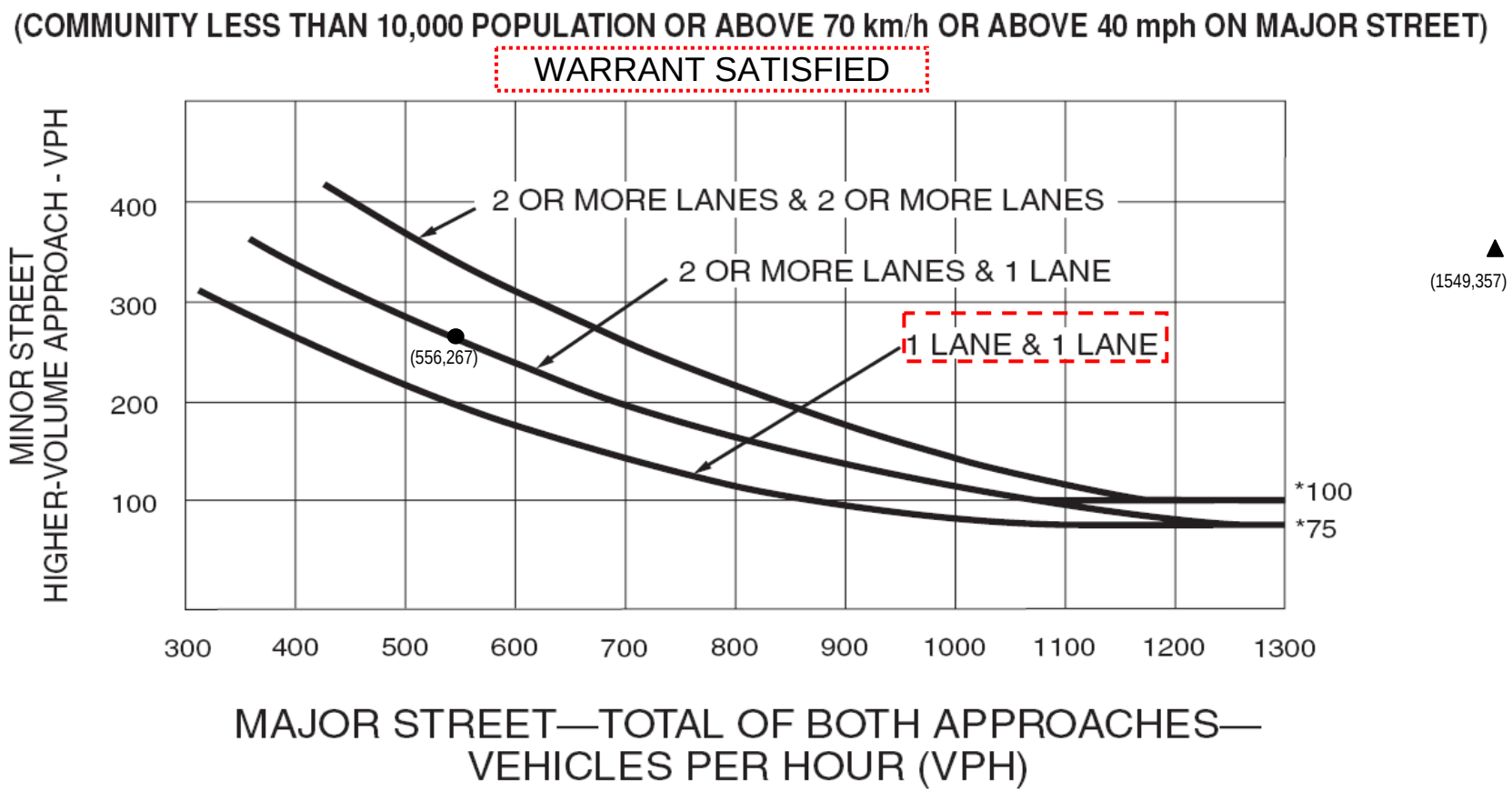
● AM Peak Hour (896,913)

▲ PM Peak Hour (1911,1327)

Source: Federal Highway Administration, MUTCD 2003, Figure 4C-2

DKS Associates
TRANSPORTATION SOLUTIONS

Figure C-7
2017 Baseline + Project Phases 1-4 Condition Peak Hour Signal Warrant Analysis for SR-99 NB Ramps and Herndon Avenue



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

● AM Peak Hour (556,267)

▲ PM Peak Hour (1549,357)

Source: Federal Highway Administration, MUTCD 2003, Figure 4C-2

DKS Associates
TRANSPORTATION SOLUTIONS

Figure C-8
2017 Baseline + Project Phases 1-4 Condition Peak Hour Signal Warrant Analysis for Grantland Avenue and Parkway Drive

APPENDIX E

FREEWAY LEVEL OF SERVICE WORKSHEETS

					Model										Peak Hour Directional Volumes									
Freeway	From	To	Existing	2007	2010 Baseline	2010 Project	2012 Baseline	2012 Project	2017 Baseline	2017 Project	2019 Baseline	2019 Project	2025 Baseline	2025 Project	2010 Baseline	2010 Project	2012 Baseline	2012 Project	2017 Baseline	2017 Project	2019 Baseline	2019 Project	2025 Baseline	2025 Project
Northbound AM																								
SR-99	HERNDON AVENUE	Avenue 7	2270	2195	2316	2350	2410	2461	2697	2732	2788	2819	3540	3550	2391	2425	2485	2536	2772	2807	2863	2894	3615	3625
SR-99	Veterans Avenue	HERNDON AVENUE	2073	1881	2026	2357	2142	2796	2598	2972	2706	3167	3291	3834	2218	2549	2334	2988	2790	3164	2898	3359	3483	4026
SR-99	SHAW AVENUE	Veterans Avenue	2073	1881	2026	2357	2142	2796	2494	3831	3093	4038	3675	4572	2218	2549	2334	2988	2686	4023	3285	4230	3867	4764
SR-99	ASHLAN AVENUE	SHAW AVENUE	2204	1937	2109	2389	2189	2812	2998	3946	3169	4119	4018	4943	2376	2656	2456	3079	3265	4213	3436	4386	4285	5210
SR-99	Dakota Ave	ASHLAN AVENUE	2961	2876	3083	3286	3247	3753	4005	4815	4196	4997	5066	5961	3168	3371	3332	3838	4090	4900	4281	5082	5151	6046
Southbound AM																								
SR-99	Avenue 7	HERNDON AVENUE	2560	3604	3954	4021	4169	4334	4635	4864	4854	5104	5496	5760	2910	2977	3125	3290	3591	3820	3810	4060	4452	4716
SR-99	HERNDON AVENUE	Veterans Avenue	2337	3250	3449	3591	3572	3742	4007	4096	4168	4290	4846	5140	2536	2678	2659	2829	3094	3183	3255	3377	3933	4227
SR-99	Veterans Avenue	SHAW AVENUE	2337	3250	3449	3591	3572	3742	5035	5290	5217	5474	6060	6347	2536	2678	2659	2829	4122	4377	4304	4561	5147	5434
SR-99	SHAW AVENUE	ASHLAN AVENUE	2486	3650	3849	3937	3995	4026	5090	5300	5234	5447	6368	6604	2685	2773	2831	2862	3926	4136	4070	4283	5204	5440
SR-99	ASHLAN AVENUE	Dakota Ave	3339	4938	5102	5190	5293	5457	5876	6069	6000	6207	7518	7773	3503	3591	3694	3858	4277	4470	4401	4608	5919	6174
Northbound PM																								
SR-99	HERNDON AVENUE	Avenue 7	3229	3784	4137	4244	4358	4592	4862	5152	5087	5392	5825	6129	3582	3689	3803	4037	4307	4597	4532	4837	5270	5574
SR-99	Veterans Avenue	HERNDON AVENUE	2948	3527	3785	4161	3921	4391	4765	5602	4933	5774	5553	6563	3206	3582	3342	3812	4186	5023	4354	5195	4974	5984
SR-99	SHAW AVENUE	Veterans Avenue	2948	3527	3785	4161	3921	4391	5562	6077	5601	6150	6656	7557	3206	3582	3342	3812	4983	5498	5022	5571	6077	6978
SR-99	ASHLAN AVENUE	SHAW AVENUE	3136	3815	3972	4221	4184	4521	5374	5814	5545	5962	6980	7531	3293	3542	3505	3842	4695	5135	4866	5283	6301	6852
SR-99	Dakota Ave	ASHLAN AVENUE	4212	5474	5655	5740	5770	5984	6442	6743	6539	6913	8276	8633	4393	4478	4508	4722	5180	5481	5277	5651	7014	7371
Southbound PM																								
SR-99	Avenue 7	HERNDON AVENUE	2981	3403	3611	3645	3763	3814	4194	4229	4343	4374	5335	5345	3189	3223	3341	3392	3772	3807	3921	3952	4913	4923
SR-99	HERNDON AVENUE	Veterans Avenue	2722	2903	3127	3619	3294	4192	3871	4842	4056	4856	4847	5898	2946	3438	3113	4011	3690	4661	3875	4675	4666	5717
SR-99	Veterans Avenue	SHAW AVENUE	2722	2903	3127	3619	3294	4192	4199	5935	4968	6060	6093	7495	2946	3438	3113	4011	4018	5754	4787	5879	5912	7314
SR-99	SHAW AVENUE	ASHLAN AVENUE	2894	3183	3500	3955	3680	4332	4757	5658	4885	5802	6320	7490	3211	3666	3391	4043	4468	5369	4596	5513	6031	7201
SR-99	ASHLAN AVENUE	Dakota Ave	3888	4390	4741	5094	5040	5655	5937	6626	6055	6699	7559	8650	4239	4592	4538	5153	5435	6124	5553	6197	7057	8148

Count Data

District	Route	Rte Suf	County	PM Prefix	Postmile	Description	Back Peak Hour	Back Peak Month	Back AADT	Ahead Peak Hour	Ahead Peak Month	Ahead AADT
6	99		FRE		26.554	ASHLAN AVENUE INTERCHANGE	9000	98000	90000	6100	71000	67000
6	99		FRE		28.102	SHAW AVENUE	6100	71000	67000	5700	67000	63000
6	99		FRE		30.988	HERNDON AVENUE	5700	67000	63000	6800	77000	69000

Freeway	From	To	Existing	Lanes	Spacing	Truck	AM K	AM D	PM K	PM D	SB AM	NB PM
SR-99	Avenue 7	HERNDON	69,000	2	0.5	24	0.07	0.53	0.09	0.52	2560	3229
SR-99	HERNDON	SHAW AVE	63,000	2	0.5	24	0.07	0.53	0.09	0.52	2337	2948
SR-99	SHAW AVE	ASHLAN A	67,000	2	0.7	24	0.07	0.53	0.09	0.52	2486	3136
SR-99	ASHLAN A	Dakota Ave	90,000	3	1.0	24	0.07	0.53	0.09	0.52	3339	4212

EXISTING TRAFFIC CONDITION

1.2007 AM NB Herndon - Ave-7

HCS2000: Basic Freeway Segments Release 4.1d

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing

Description: El Paseo Fresno

Flow Inputs and Adjustments

Volume, V	2270	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	617	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, fp	1.00	
Flow rate, vp	1382	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1382	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	65.5	mi/h
Number of lanes, N	2	
Density, D	21.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

2.2007 AM SB Ave-7 - Herndon

HCS2000: Basic Freeway Segments Release 4.1d

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing

Description: El Paseo Fresno

Flow Inputs and Adjustments

Volume, V	2560	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	696	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, fp	1.00	
Flow rate, vp	1558	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1558	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	65.4	mi/h
Number of lanes, N	2	
Density, D	23.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

3.2007 AM NB Shaw - Herndon

HCS2000: Basic Freeway Segments Release 4.1d

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing

Description: El Paseo Fresno

Flow Inputs and Adjustments

Volume, V	2073	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	563	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, fp	1.00	
Flow rate, vp	1262	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1262	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	65.5	mi/h
Number of lanes, N	2	
Density, D	19.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

4.2007 AM SB Herndon - Shaw

HCS2000: Basic Freeway Segments Release 4.1d

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing

Description: El Paseo Fresno

Flow Inputs and Adjustments

Volume, V	2337	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	635	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, fp	1.00	
Flow rate, vp	1423	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1423	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	65.5	mi/h
Number of lanes, N	2	
Density, D	21.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

5.2007 AM NB Ashlan - Shaw

HCS2000: Basic Freeway Segments Release 4.1d

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno

Flow Inputs and Adjustments

Volume, V	2204	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	599	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, fp	1.00	
Flow rate, vp	1342	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1342	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	2	
Density, D	20.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

6.2007 AM SB Shaw - Ashlan

HCS2000: Basic Freeway Segments Release 4.1d

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing

Description: El Paseo Fresno

Flow Inputs and Adjustments

Volume, V	2486	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	676	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, fp	1.00	
Flow rate, vp	1513	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1513	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	2	
Density, D	23.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

7.2007 AM NB Dakota - Ashlan

HCS2000: Basic Freeway Segments Release 4.1d

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno

Flow Inputs and Adjustments

Volume, V	2961	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	805	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, fp	1.00	
Flow rate, vp	1202	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1202	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	18.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

8.2007 AM SB Ashlan - Dakota

HCS2000: Basic Freeway Segments Release 4.1d

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing

Description: El Paseo Fresno

Flow Inputs and Adjustments

Volume, V	3339	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	907	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, fp	1.00	
Flow rate, vp	1355	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1355	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	21.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing

Description: El Paseo Fresno

Flow Inputs and Adjustments

Volume, V	3229	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	877	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1965	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1965	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	31.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno

Flow Inputs and Adjustments

Volume, V	2981	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	810	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1815	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1815	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	64.2	mi/h
Number of lanes, N	2	
Density, D	28.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing

Description: El Paseo Fresno

Flow Inputs and Adjustments

Volume, V	2948	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	801	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1794	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1794	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	64.4	mi/h
Number of lanes, N	2	
Density, D	27.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing

Description: El Paseo Fresno

Flow Inputs and Adjustments

Volume, V	2722	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	740	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1657	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1657	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	65.2	mi/h
Number of lanes, N	2	
Density, D	25.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno

Flow Inputs and Adjustments

Volume, V	3136	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	852	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1909	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1909	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	30.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing

Description: El Paseo Fresno

Flow Inputs and Adjustments

Volume, V	2894	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	786	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1762	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1762	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	63.7	mi/h
Number of lanes, N	2	
Density, D	27.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing

Description: El Paseo Fresno

Flow Inputs and Adjustments

Volume, V	4212	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1145	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1709	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1709	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.1	mi/h
Number of lanes, N	3	
Density, D	26.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing

Description: El Paseo Fresno

Flow Inputs and Adjustments

Volume, V	3888	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1057	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1578	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1578	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.4	mi/h
Number of lanes, N	3	
Density, D	24.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

2010 BASELINE TRAFFIC CONDITION

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2391	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	650	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1455	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1455	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	65.5	mi/h
Number of lanes, N	2	
Density, D	22.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2910	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	791	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1771	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1771	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	2	
Density, D	27.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2218	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	603	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1350	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1350	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	65.5	mi/h
Number of lanes, N	2	
Density, D	20.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2536	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	689	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1544	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1544	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	65.4	mi/h
Number of lanes, N	2	
Density, D	23.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2376	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	646	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1446	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1446	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	2	
Density, D	22.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2685	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	730	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1634	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1634	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.3	mi/h
Number of lanes, N	2	
Density, D	25.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3168	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	861	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1286	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1286	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3503	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	952	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1422	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1422	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	22.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3582	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	973	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2180	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2180	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	57.9	mi/h
Number of lanes, N	2	
Density, D	37.7	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3189	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	867	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1941	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1941	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	62.7	mi/h
Number of lanes, N	2	
Density, D	30.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3206	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	871	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1951	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1951	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	62.6	mi/h
Number of lanes, N	2	
Density, D	31.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2946	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	801	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1793	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1793	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	64.4	mi/h
Number of lanes, N	2	
Density, D	27.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3293	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	895	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2004	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2004	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	61.0	mi/h
Number of lanes, N	2	
Density, D	32.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3211	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	873	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1955	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1955	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	61.8	mi/h
Number of lanes, N	2	
Density, D	31.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3293	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	895	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2004	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2004	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	61.0	mi/h
Number of lanes, N	2	
Density, D	32.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4239	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1152	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1720	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1720	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.0	mi/h
Number of lanes, N	3	
Density, D	26.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

2012 BASELINE TRAFFIC CONDITION

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2485	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	675	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1008	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1008	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	15.0	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3125	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	849	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1268	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1268	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	18.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2334	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	634	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	947	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	947	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	14.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2659	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	723	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1079	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1079	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	16.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2456	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	667	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	997	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	997	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	66.0	mi/h
Number of lanes, N	3	
Density, D	15.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2831	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	769	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1149	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1149	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	66.0	mi/h
Number of lanes, N	3	
Density, D	17.4	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3332	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	905	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1352	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1352	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	21.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3694	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1004	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1499	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1499	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	23.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3803	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1033	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1543	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1543	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	66.9	mi/h
Number of lanes, N	3	
Density, D	23.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3341	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	908	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1356	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1356	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	20.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3342	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	908	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1356	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1356	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	20.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3113	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	846	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1263	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1263	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	18.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3505	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	952	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1422	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1422	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	66.0	mi/h
Number of lanes, N	3	
Density, D	21.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3391	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	921	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1376	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1376	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	66.0	mi/h
Number of lanes, N	3	
Density, D	20.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4508	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1225	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1829	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1829	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	63.3	mi/h
Number of lanes, N	3	
Density, D	28.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4538	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1233	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1842	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1842	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	63.1	mi/h
Number of lanes, N	3	
Density, D	29.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

2017 BASELINE TRAFFIC CONDITION

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2772	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	753	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1125	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1125	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	16.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3591	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	976	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1457	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1457	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	21.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Veterans Ave - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2790	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	758	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1132	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1132	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	17.6	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - Veterans
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3094	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	841	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1256	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1256	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	19.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2686	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	730	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1090	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1090	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	16.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Veterans Ave - Shaw Ave
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4122	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1120	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1673	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1673	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.2	mi/h
Number of lanes, N	3	
Density, D	26.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3265	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	887	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1325	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1325	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	66.0	mi/h
Number of lanes, N	3	
Density, D	20.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3926	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1067	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1593	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1593	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	65.8	mi/h
Number of lanes, N	3	
Density, D	24.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4090	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1111	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1660	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1660	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.3	mi/h
Number of lanes, N	3	
Density, D	25.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4277	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1162	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1736	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1736	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	27.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4307	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1170	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1748	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1748	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	66.0	mi/h
Number of lanes, N	3	
Density, D	26.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3591	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	976	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1457	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1457	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	21.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Veterans Ave - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2790	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	758	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1132	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1132	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	17.6	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - Veterans
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3094	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	841	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1256	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1256	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	19.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2686	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	730	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1090	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1090	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	16.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Veterans Ave - Shaw Ave
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4122	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1120	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1673	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1673	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.2	mi/h
Number of lanes, N	3	
Density, D	26.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3265	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	887	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1325	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1325	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	66.0	mi/h
Number of lanes, N	3	
Density, D	20.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3926	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1067	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1593	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1593	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	65.8	mi/h
Number of lanes, N	3	
Density, D	24.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4090	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1111	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1660	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1660	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.3	mi/h
Number of lanes, N	3	
Density, D	25.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4277	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1162	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1736	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1736	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	27.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

2019 BASELINE TRAFFIC CONDITION

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2863	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	778	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1162	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1162	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	17.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3810	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1035	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1546	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1546	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	66.9	mi/h
Number of lanes, N	3	
Density, D	23.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Veterans Ave - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	2898	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	787	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1176	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1176	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	18.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - Veterans
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3255	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	885	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1321	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1321	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	20.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3285	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	893	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1333	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1333	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	20.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Veterans Ave - Shaw Ave
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4304	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1170	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1747	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1747	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	27.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3436	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	934	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1394	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1394	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	66.0	mi/h
Number of lanes, N	3	
Density, D	21.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4070	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1106	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1652	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1652	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	65.6	mi/h
Number of lanes, N	3	
Density, D	25.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4281	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1163	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1737	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1737	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	27.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4401	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1196	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1786	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1786	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	63.6	mi/h
Number of lanes, N	3	
Density, D	28.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4532	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1232	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1839	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1839	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	65.1	mi/h
Number of lanes, N	3	
Density, D	28.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3921	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1065	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1591	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1591	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	66.8	mi/h
Number of lanes, N	3	
Density, D	23.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	Veterans Ave - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4354	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1183	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1767	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1767	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	63.7	mi/h
Number of lanes, N	3	
Density, D	27.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3875	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1053	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1572	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1572	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.4	mi/h
Number of lanes, N	3	
Density, D	24.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	5022	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1365	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2038	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2038	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	33.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	Veterans Ave - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4787	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1301	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1943	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1943	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	62.0	mi/h
Number of lanes, N	3	
Density, D	31.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4866	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1322	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1975	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1975	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	62.5	mi/h
Number of lanes, N	3	
Density, D	31.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4596	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1249	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1865	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1865	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	64.0	mi/h
Number of lanes, N	3	
Density, D	29.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	5277	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1434	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2141	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2141	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	58.3	mi/h
Number of lanes, N	3	
Density, D	36.7	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	5553	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1509	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2253	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2253	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	55.2	mi/h
Number of lanes, N	3	
Density, D	40.8	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

2025 BASELINE TRAFFIC CONDITION

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3615	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	982	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1467	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1467	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	21.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4452	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1210	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1807	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1807	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	65.4	mi/h
Number of lanes, N	3	
Density, D	27.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Veterans Ave - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3483	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	946	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1413	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1413	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	21.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - Veterans
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3933	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1069	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1596	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1596	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.4	mi/h
Number of lanes, N	3	
Density, D	24.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	3867	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1051	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1177	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1177	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	66.0	mi/h
Number of lanes, N	4	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Veterans Ave - Shaw Ave
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	5147	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1399	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1566	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1566	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	65.9	mi/h
Number of lanes, N	4	
Density, D	23.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4285	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1164	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1304	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	67.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1304	pc/h/ln
Free-flow speed, FFS	67.5	mi/h
Average passenger-car speed, S	67.5	mi/h
Number of lanes, N	4	
Density, D	19.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	5204	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1414	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1584	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	67.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1584	pc/h/ln
Free-flow speed, FFS	67.5	mi/h
Average passenger-car speed, S	67.2	mi/h
Number of lanes, N	4	
Density, D	23.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	5151	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1400	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1568	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1568	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	65.9	mi/h
Number of lanes, N	4	
Density, D	23.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	5919	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1608	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1801	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1801	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	64.7	mi/h
Number of lanes, N	4	
Density, D	27.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	5270	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1432	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2139	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2139	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	59.9	mi/h
Number of lanes, N	3	
Density, D	35.7	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4913	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1335	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1994	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1994	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	62.9	mi/h
Number of lanes, N	3	
Density, D	31.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	Veterans Ave - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4974	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1352	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2018	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2018	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	60.8	mi/h
Number of lanes, N	3	
Density, D	33.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	4666	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1268	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1893	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1893	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	62.6	mi/h
Number of lanes, N	3	
Density, D	30.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	6077	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1651	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1850	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1850	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	64.2	mi/h
Number of lanes, N	4	
Density, D	28.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	Veterans Ave - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	5912	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1607	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1799	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1799	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	64.7	mi/h
Number of lanes, N	4	
Density, D	27.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	6301	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1712	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1918	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	67.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1918	pc/h/ln
Free-flow speed, FFS	67.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	4	
Density, D	29.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	6031	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1639	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1836	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	67.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1836	pc/h/ln
Free-flow speed, FFS	67.5	mi/h
Average passenger-car speed, S	65.5	mi/h
Number of lanes, N	4	
Density, D	28.0	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2025

Description: El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	7014	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1906	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2135	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2135	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	59.3	mi/h
Number of lanes, N	4	
Density, D	36.0	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline

Flow Inputs and Adjustments

Volume, V	7057	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1918	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2148	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2148	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	59.0	mi/h
Number of lanes, N	4	
Density, D	36.4	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

EXISTING PLUS PROJECT PHASES 1-5 TRAFFIC CONDITION

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno project

Flow Inputs and Adjustments

Volume, V	2301	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	625	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1401	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1401	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	65.5	mi/h
Number of lanes, N	2	
Density, D	21.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno project

Flow Inputs and Adjustments

Volume, V	2810	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	764	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1710	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1710	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	2	
Density, D	26.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno project

Flow Inputs and Adjustments

Volume, V	3018	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	820	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1837	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1837	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	64.0	mi/h
Number of lanes, N	2	
Density, D	28.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno project

Flow Inputs and Adjustments

Volume, V	2594	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	705	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1579	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1579	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	65.4	mi/h
Number of lanes, N	2	
Density, D	24.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno project

Flow Inputs and Adjustments

Volume, V	3154	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	857	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1920	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1920	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	62.2	mi/h
Number of lanes, N	2	
Density, D	30.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno project

Flow Inputs and Adjustments

Volume, V	2699	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	733	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1643	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1643	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.3	mi/h
Number of lanes, N	2	
Density, D	25.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno project

Flow Inputs and Adjustments

Volume, V	3762	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1022	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1527	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1527	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	23.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno project

Flow Inputs and Adjustments

Volume, V	3546	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	964	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1439	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1439	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	22.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno project

Flow Inputs and Adjustments

Volume, V	3534	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	960	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2151	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2151	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	58.6	mi/h
Number of lanes, N	2	
Density, D	36.7	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno project

Flow Inputs and Adjustments

Volume, V	3012	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	818	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1833	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1833	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	64.0	mi/h
Number of lanes, N	2	
Density, D	28.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno project

Flow Inputs and Adjustments

Volume, V	3789	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1030	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2306	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2306	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	54.1	mi/h
Number of lanes, N	2	
Density, D	42.6	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno project

Flow Inputs and Adjustments

Volume, V	3814	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1036	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2322	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2322	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	53.5	mi/h
Number of lanes, N	2	
Density, D	43.4	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno project

Flow Inputs and Adjustments

Volume, V	3553	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	965	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2163	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2163	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	57.7	mi/h
Number of lanes, N	2	
Density, D	37.5	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno project

Flow Inputs and Adjustments

Volume, V	3811	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1036	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2320	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2320	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	53.0	mi/h
Number of lanes, N	2	
Density, D	43.8	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing

Description: El Paseo Fresno project

Flow Inputs and Adjustments

Volume, V	4586	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1246	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1861	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1861	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	62.9	mi/h
Number of lanes, N	3	
Density, D	29.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2007 Existing
Description:	El Paseo Fresno project

Flow Inputs and Adjustments

Volume, V	4532	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1232	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1839	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1839	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	63.2	mi/h
Number of lanes, N	3	
Density, D	29.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

2010 BASELINE PLUS PROJECT PHASE 1 TRAFFIC CONDITION

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2010

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	2425	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	659	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1476	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1476	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	65.5	mi/h
Number of lanes, N	2	
Density, D	22.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	2977	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	809	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1812	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1812	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	64.2	mi/h
Number of lanes, N	2	
Density, D	28.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	2549	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	693	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1552	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1552	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	65.4	mi/h
Number of lanes, N	2	
Density, D	23.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	2678	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	728	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1630	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1630	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	65.3	mi/h
Number of lanes, N	2	
Density, D	25.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2010

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	2656	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	722	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1617	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1617	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.3	mi/h
Number of lanes, N	2	
Density, D	25.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	2773	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	754	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1688	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1688	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.1	mi/h
Number of lanes, N	2	
Density, D	26.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2010

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3371	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	916	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1368	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1368	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	21.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3591	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	976	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1457	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1457	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	22.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2010

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3689	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1002	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2245	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2245	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	56.0	mi/h
Number of lanes, N	2	
Density, D	40.1	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3223	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	876	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1962	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1962	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	31.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3582	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	973	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2180	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2180	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	57.9	mi/h
Number of lanes, N	2	
Density, D	37.7	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3438	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	934	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2093	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2093	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	60.0	mi/h
Number of lanes, N	2	
Density, D	34.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3542	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	962	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2156	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2156	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	57.9	mi/h
Number of lanes, N	2	
Density, D	37.3	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3666	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	996	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2231	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2231	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	55.8	mi/h
Number of lanes, N	2	
Density, D	40.0	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2010

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4478	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1217	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1817	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1817	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	63.4	mi/h
Number of lanes, N	3	
Density, D	28.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4592	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1248	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1863	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1863	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	62.9	mi/h
Number of lanes, N	3	
Density, D	29.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

2012 BASELINE PLUS PROJECT PHASES 1 & 2 TRAFFIC CONDITION

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2012

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	2536	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	689	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1029	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1029	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	15.4	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	2977	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	809	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1812	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1812	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	64.2	mi/h
Number of lanes, N	2	
Density, D	28.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	2549	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	693	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1552	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1552	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	65.4	mi/h
Number of lanes, N	2	
Density, D	23.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	2678	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	728	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1630	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1630	pc/h/ln
Free-flow speed, FFS	65.5	mi/h
Average passenger-car speed, S	65.3	mi/h
Number of lanes, N	2	
Density, D	25.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2010

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	2656	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	722	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1617	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1617	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.3	mi/h
Number of lanes, N	2	
Density, D	25.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	2773	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	754	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1688	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1688	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.1	mi/h
Number of lanes, N	2	
Density, D	26.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2010

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3371	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	916	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1368	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1368	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	21.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2010
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3591	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	976	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1457	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1457	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	22.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2012

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4037	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1097	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1638	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1638	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	66.6	mi/h
Number of lanes, N	3	
Density, D	24.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3392	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	922	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1376	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1376	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	20.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3812	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1036	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1547	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1547	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	66.9	mi/h
Number of lanes, N	3	
Density, D	23.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4011	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1090	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1628	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1628	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	66.6	mi/h
Number of lanes, N	3	
Density, D	24.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3842	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1044	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1559	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1559	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	65.9	mi/h
Number of lanes, N	3	
Density, D	23.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4043	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1099	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1641	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1641	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	65.6	mi/h
Number of lanes, N	3	
Density, D	25.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2012

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4722	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1283	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1916	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1916	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	62.3	mi/h
Number of lanes, N	3	
Density, D	30.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2012
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5153	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1400	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2091	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2091	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	59.4	mi/h
Number of lanes, N	3	
Density, D	35.2	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

2017 BASELINE PLUS PROJECT PHASES 1-4 TRAFFIC CONDITION

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	2807	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	763	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1139	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1139	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	17.0	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3820	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1038	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1550	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1550	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	66.9	mi/h
Number of lanes, N	3	
Density, D	23.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Veterans Ave - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3164	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	860	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1284	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1284	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - Veterans
Jurisdiction:	Caltrans
Analysis Year:	2017

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3183	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	865	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1292	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1292	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	20.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4023	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1093	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1633	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1633	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.3	mi/h
Number of lanes, N	3	
Density, D	25.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Veterans Ave - Shaw Ave
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4377	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1189	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1776	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1776	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	63.7	mi/h
Number of lanes, N	3	
Density, D	27.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2017

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4213	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1145	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1710	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1710	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	65.3	mi/h
Number of lanes, N	3	
Density, D	26.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4136	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1124	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1678	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1678	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	65.5	mi/h
Number of lanes, N	3	
Density, D	25.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2017

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4900	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1332	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1988	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1988	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	61.3	mi/h
Number of lanes, N	3	
Density, D	32.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2017

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4470	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1215	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1814	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1814	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	63.4	mi/h
Number of lanes, N	3	
Density, D	28.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4597	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1249	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1865	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1865	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	64.8	mi/h
Number of lanes, N	3	
Density, D	28.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3807	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1035	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1545	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1545	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	66.9	mi/h
Number of lanes, N	3	
Density, D	23.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	Veterans Ave - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5023	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1365	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2038	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2038	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	33.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4661	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1267	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1891	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1891	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	62.6	mi/h
Number of lanes, N	3	
Density, D	30.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5498	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1494	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2231	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2231	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	55.9	mi/h
Number of lanes, N	3	
Density, D	39.9	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	Veterans Ave - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5754	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1564	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2335	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2335	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	52.5	mi/h
Number of lanes, N	3	
Density, D	44.5	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5135	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1395	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2084	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2084	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	60.5	mi/h
Number of lanes, N	3	
Density, D	34.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2017
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5369	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1459	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2179	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2179	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	58.2	mi/h
Number of lanes, N	3	
Density, D	37.4	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2017

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5481	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1489	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2224	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2224	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	56.1	mi/h
Number of lanes, N	3	
Density, D	39.7	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2017

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	6124	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1664	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2485	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2485	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

2019 BASELINE PLUS PROJECT PHASES 1-5 TRAFFIC CONDITION

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2019

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	2894	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	786	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1174	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1174	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	17.5	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4060	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1103	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1648	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1648	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	66.6	mi/h
Number of lanes, N	3	
Density, D	24.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Veterans Ave - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3359	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	913	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1363	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1363	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	21.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - Veterans
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3377	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	918	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1370	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1370	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	3	
Density, D	21.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4230	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1149	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1717	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1717	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.0	mi/h
Number of lanes, N	3	
Density, D	26.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Veterans Ave - Shaw Ave
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4561	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1239	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1851	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1851	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	63.0	mi/h
Number of lanes, N	3	
Density, D	29.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2019

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4386	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1192	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1780	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1780	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	64.8	mi/h
Number of lanes, N	3	
Density, D	27.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4283	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1164	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1738	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1738	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	65.2	mi/h
Number of lanes, N	3	
Density, D	26.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5082	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1381	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2062	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2062	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	60.0	mi/h
Number of lanes, N	3	
Density, D	34.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4608	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1252	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1870	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1870	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	62.9	mi/h
Number of lanes, N	3	
Density, D	29.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4837	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1314	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1963	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1963	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	63.4	mi/h
Number of lanes, N	3	
Density, D	30.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3952	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1074	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1604	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1604	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	66.7	mi/h
Number of lanes, N	3	
Density, D	24.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	Veterans Ave - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5195	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1412	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2108	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2108	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	59.0	mi/h
Number of lanes, N	3	
Density, D	35.7	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4675	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1270	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1897	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1897	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	62.6	mi/h
Number of lanes, N	3	
Density, D	30.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5571	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1514	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2261	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2261	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	55.0	mi/h
Number of lanes, N	3	
Density, D	41.1	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	Veterans Ave - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5879	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1598	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2386	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2386	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5283	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1436	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2144	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2144	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	59.1	mi/h
Number of lanes, N	3	
Density, D	36.3	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2019
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5513	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1498	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2237	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2237	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	56.6	mi/h
Number of lanes, N	3	
Density, D	39.5	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2019

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5651	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1536	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2293	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2293	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	53.9	mi/h
Number of lanes, N	3	
Density, D	42.5	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2019

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	6197	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1684	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2515	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2515	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

2025 BUILDOUT PLUS PROJECT PHASES 1-5 TRAFFIC CONDITION

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	3625	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	985	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1471	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1471	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	22.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4716	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1282	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1914	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1914	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	64.2	mi/h
Number of lanes, N	3	
Density, D	29.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Veterans Ave - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4026	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1094	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1634	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1634	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.3	mi/h
Number of lanes, N	3	
Density, D	25.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - Veterans
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4227	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1149	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1715	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1715	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	64.0	mi/h
Number of lanes, N	3	
Density, D	26.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4764	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1295	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1450	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1450	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	66.0	mi/h
Number of lanes, N	4	
Density, D	22.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	Veterans Ave - Shaw Ave
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5434	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1477	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1654	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1654	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	65.6	mi/h
Number of lanes, N	4	
Density, D	25.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5210	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1416	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1586	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	67.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1586	pc/h/ln
Free-flow speed, FFS	67.5	mi/h
Average passenger-car speed, S	67.2	mi/h
Number of lanes, N	4	
Density, D	23.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

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E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5440	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1478	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1656	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	67.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1656	pc/h/ln
Free-flow speed, FFS	67.5	mi/h
Average passenger-car speed, S	66.9	mi/h
Number of lanes, N	4	
Density, D	24.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2025

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	6046	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1643	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1840	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1840	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	64.3	mi/h
Number of lanes, N	4	
Density, D	28.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	AM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	6174	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1678	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1879	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1879	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	4	
Density, D	29.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	HERNDON AVE - Avenue 7
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5574	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1515	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2262	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2262	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	56.4	mi/h
Number of lanes, N	3	
Density, D	40.1	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	Avenue 7 - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	4923	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1338	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	1998	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	67.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1998	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	62.9	mi/h
Number of lanes, N	3	
Density, D	31.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	Veterans Ave - HERNDON AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5984	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1626	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2428	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2428	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	3	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	HERNDON AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	5717	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1554	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2320	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	64.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2320	pc/h/ln
Free-flow speed, FFS	64.5	mi/h
Average passenger-car speed, S	53.0	mi/h
Number of lanes, N	3	
Density, D	43.8	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	SHAW AVE - Veterans Ave
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	6978	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1896	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2124	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2124	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	59.6	mi/h
Number of lanes, N	4	
Density, D	35.6	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	Veterans Ave - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	7314	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1987	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2226	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2226	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	56.9	mi/h
Number of lanes, N	4	
Density, D	39.1	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	ASHLAN AVE - SHAW AVE
Jurisdiction:	Caltrans
Analysis Year:	2025

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	6852	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1862	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2085	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	67.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2085	pc/h/ln
Free-flow speed, FFS	67.5	mi/h
Average passenger-car speed, S	61.4	mi/h
Number of lanes, N	4	
Density, D	33.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	SHAW AVE - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	7201	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1957	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2192	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.70	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	1.0	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	67.5	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2192	pc/h/ln
Free-flow speed, FFS	67.5	mi/h
Average passenger-car speed, S	58.8	mi/h
Number of lanes, N	4	
Density, D	37.3	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Northbound
From/To:	Dakota Ave - ASHLAN AVE
Jurisdiction:	Caltrans
Analysis Year:	2025

Description: El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	7371	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	2003	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2243	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2243	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	56.4	mi/h
Number of lanes, N	4	
Density, D	39.8	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1a

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	Kevin Stankiewicz
Agency or Company:	DKS Associates
Date Performed:	2/13/2008
Analysis Time Period:	PM
Freeway/Direction:	Southbound
From/To:	ASHLAN AVE - Dakota Ave
Jurisdiction:	Caltrans
Analysis Year:	2025
Description:	El Paseo Fresno - Baseline + Project

Flow Inputs and Adjustments

Volume, V	8148	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	2214	v
Trucks and buses	24	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.893	
Driver population factor, vp	1.00	
Flow rate, vp	2480	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.00	interchange/mi
Number of lanes, N	4	
Free-flow speed:	Ideal	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	2.5	mi/h
Number of lanes adjustment, fN	1.5	mi/h
Free-flow speed, FFS	66.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2480	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	4	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

APPENDIX F

FREEWAY WEAVING SECTION ANALYSIS WORKSHEETS

EXISTING TRAFFIC CONDITION

EX PM			
Herndon/Shaw			
Northbound			
Herdon Off Ramp	3 NBL	3 NBR	Total
	65	533	598
Shaw On Ramp	35 EBL	35 WBR	Total
	41	302	343

Section Data

W1	598
W2	343
Vw (total)	941
R	0.36
V (Main Vol)	2,948

Southbound			
Herdon On Ramp	17 NBR	17 EBT	Total
	29	290	319
Shaw Off Ramp	34 NBL	34 NBR	Total
	55	259	314

Section Data

W1	319
W2	314
Vw (total)	633
R	0.50
V (Main Vol)	2,722

EX AM			
Herndon/Shaw			
Northbound			
Herdon Off Ramp	3 NBL	3 NBR	Total
	42	337	379
Shaw On Ramp	35 EBL	35 WBR	Total
	95	192	287

Section Data

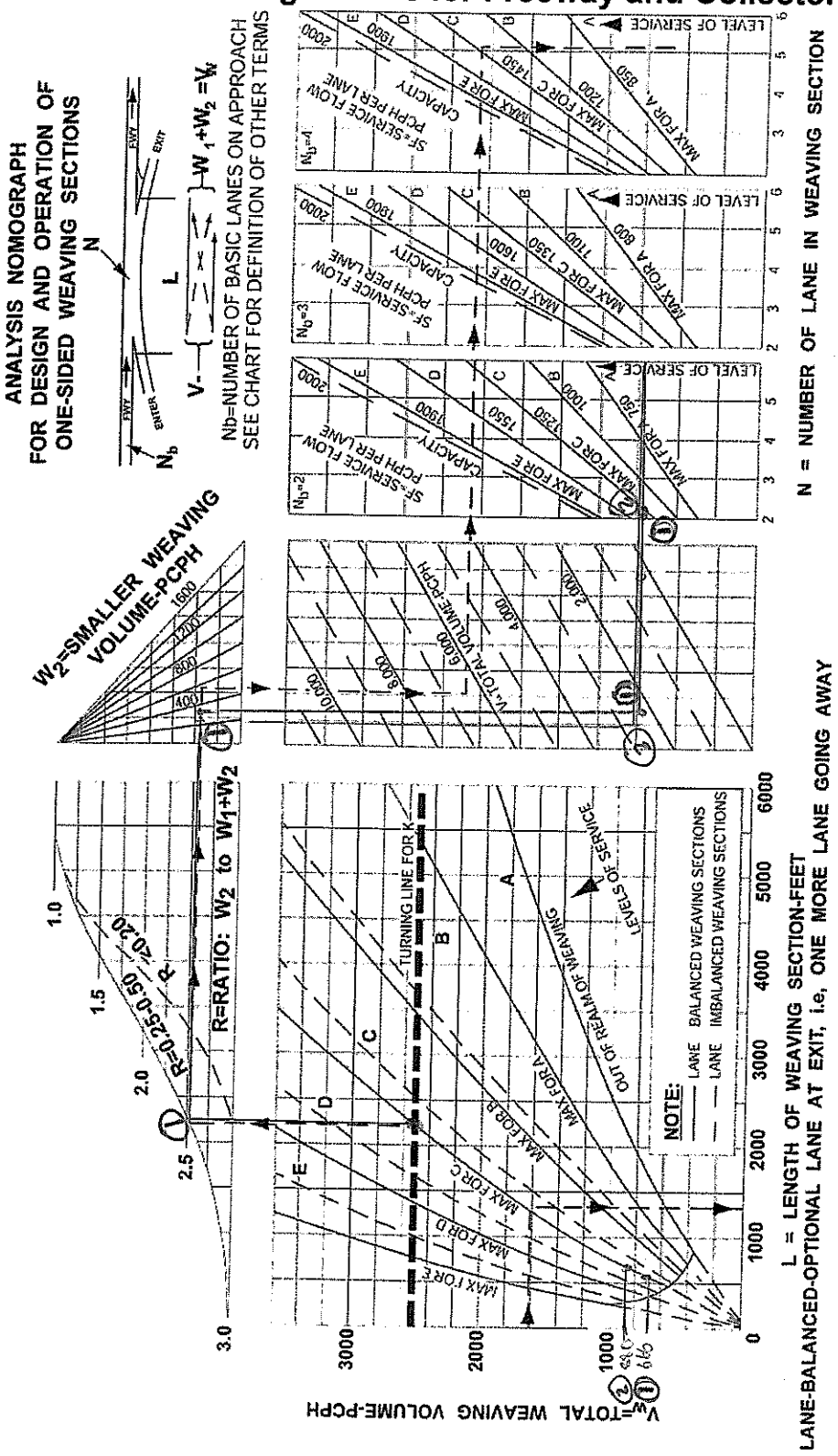
W1	379
W2	287
Vw (total)	666
R	0.43
V (Main Vol)	2,073

Southbound			
Herdon On Ramp	17 NBR	17 EBT	Total
	116	499	615
Shaw Off Ramp	34 NBL	34 NBR	Total
	38	227	265

Section Data

W1	615
W2	265
Vw (total)	880
R	0.30
V (Main Vol)	2,337

Figure 504.7A
Design Curve for Freeway and Collector Weaving



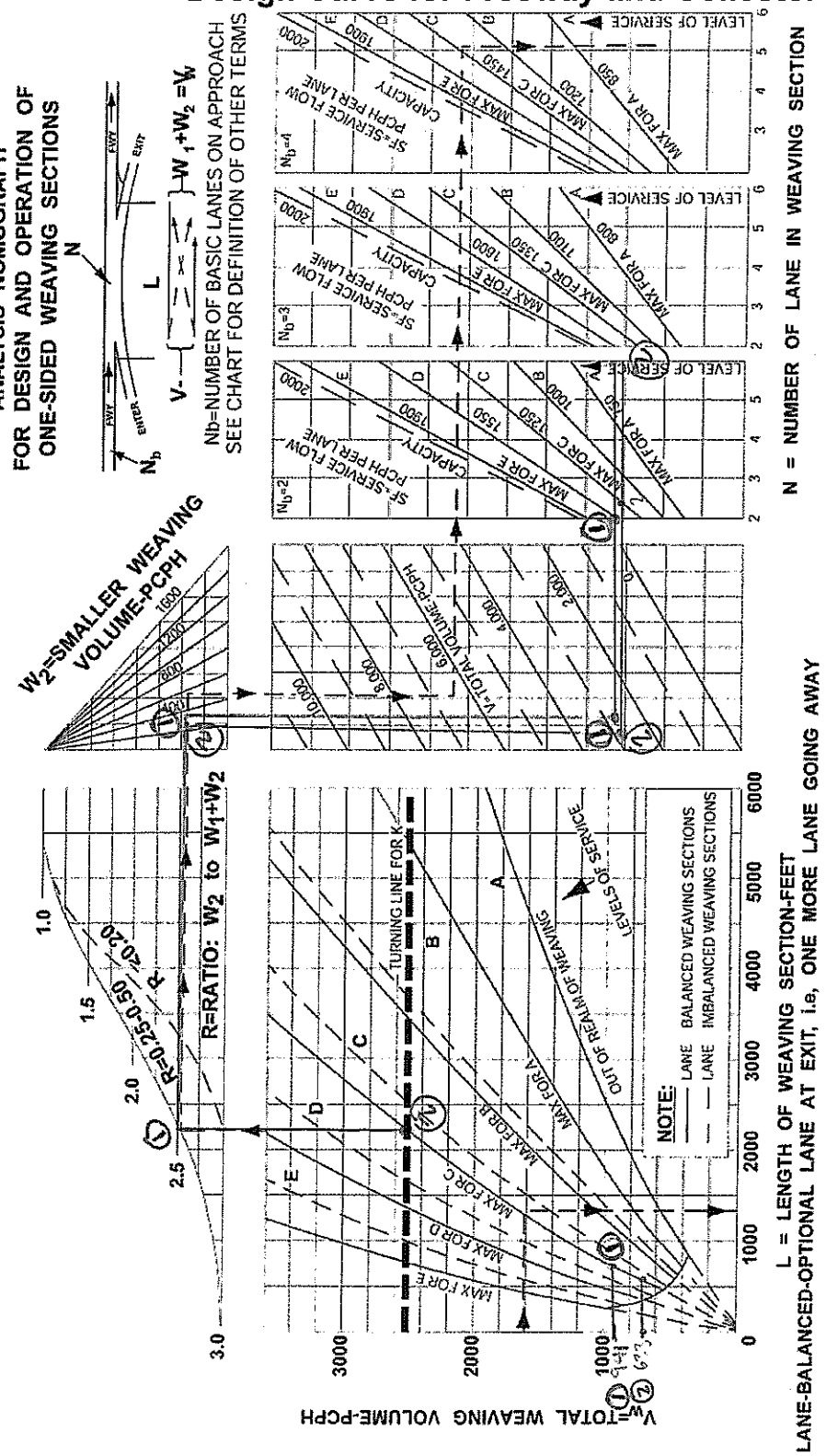
NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W, with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, turning line for K; from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2; this would be rounded to N = 5 lanes.

Ex AM
(Hypothetical)

① NB LOS C
② SB LOS C

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K." from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2- this would be rounded to N = 5 lanes.

Ex Pm
(Herndon/Shaw)

① NB LOS C → D (worst case = LOS D)

② SB LOS C

2010 BASELINE TRAFFIC CONDITION

2010 AM			
Herndon/Shaw			
Northbound			
Herdon Off Ramp	3 NBL	3 NBR	Total
	55	654	709
Shaw On Ramp	35 EBL	35 WBR	Total
	112	259	371

Section Data

W1	709
W2	371
Vw (total)	1080
R	0.34
V (Main Vol)	2,334

Southbound			
Herdon On Ramp	17 NBR	17 EBT	Total
	183	822	1005
Shaw Off Ramp	34 NBL	34 NBR	Total
	65	267	332

Section Data

W1	1005
W2	332
Vw (total)	1337
R	0.25
V (Main Vol)	2,659

2010 PM			
Herndon/Shaw			
Northbound			
Herdon Off Ramp	3 NBL	3 NBR	Total
	85	891	976
Shaw On Ramp	35 EBL	35 WBR	Total
	63	359	422

Section Data

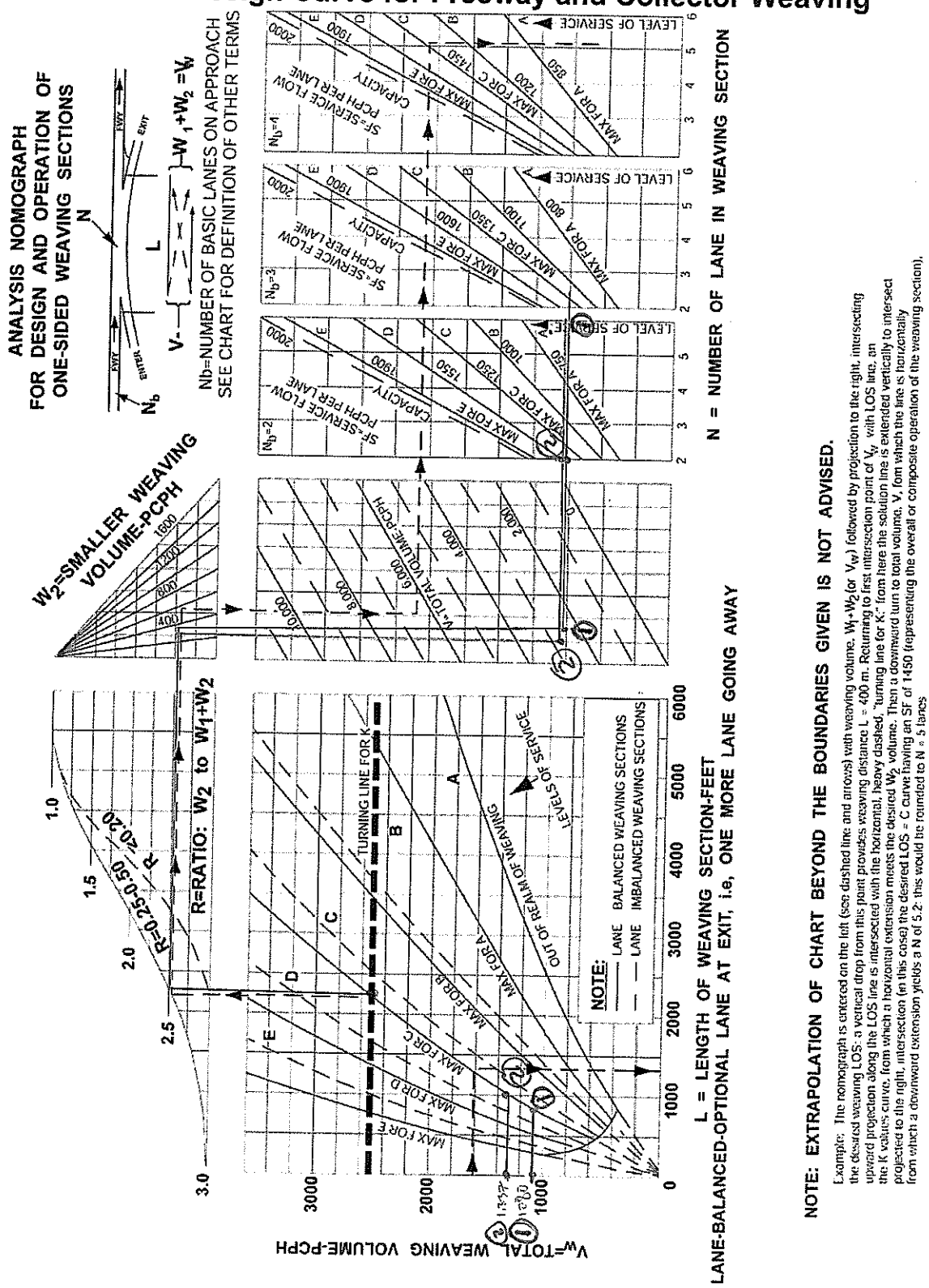
W1	976
W2	422
Vw (total)	1398
R	0.30
V (Main Vol)	3,342

Southbound			
Herdon On Ramp	17 NBR	17 EBT	Total
	62	559	621
Shaw Off Ramp	34 NBL	34 NBR	Total
	96	292	388

Section Data

W1	621
W2	388
Vw (total)	1009
R	0.38
V (Main Vol)	3,113

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

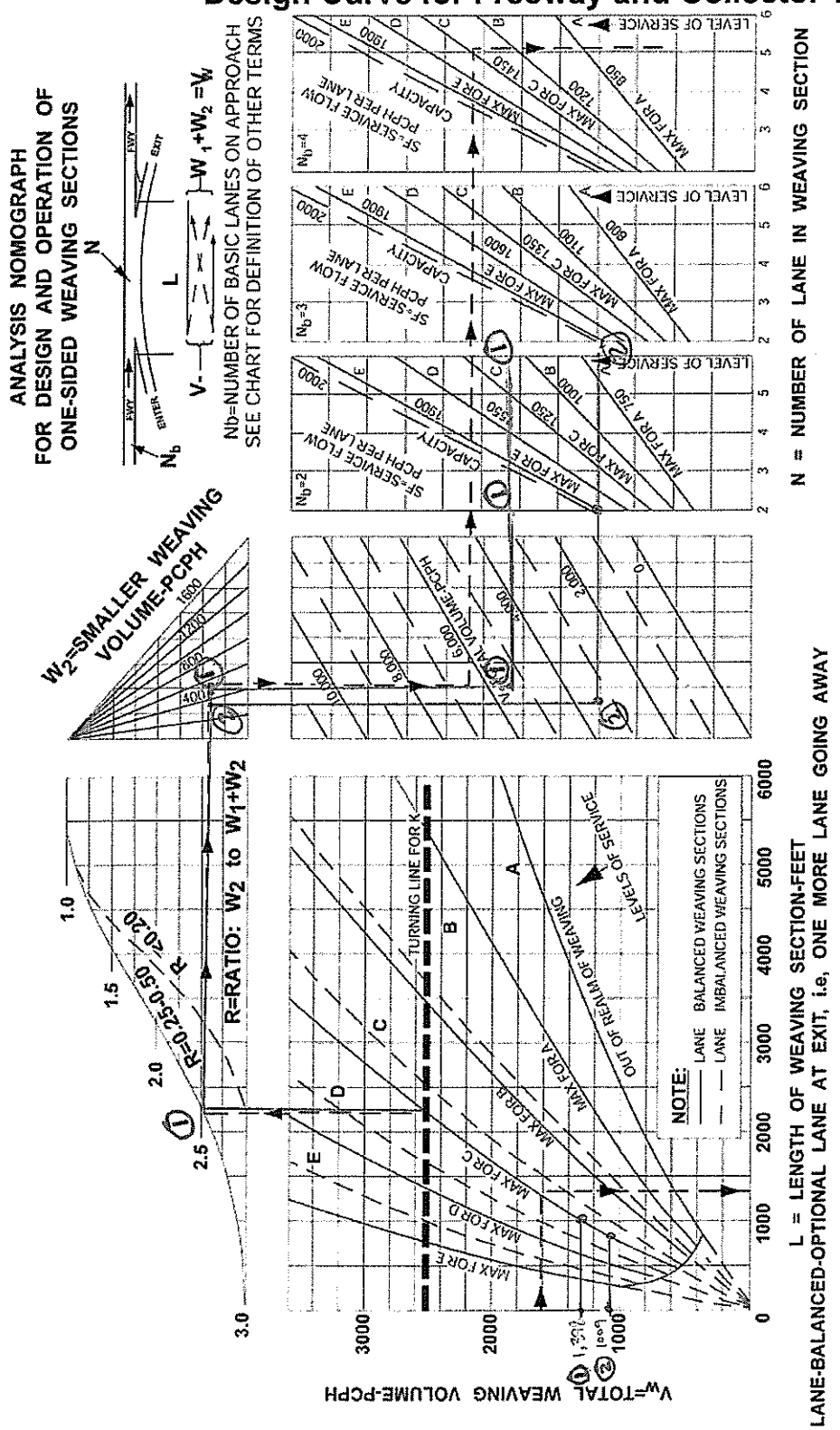
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W, with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K:" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes

2010 Baseline Analysis (shown to Hamilton)

① NB LOS D

② SB LOS D.

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_w) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_w, with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K:" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2; this would be rounded to N = 5 lanes.

2016 PM (Herndon / Shaw)

① NB LOS F

② SB LOS E

2012 BASELINE TRAFFIC CONDITION

2012 AM			
Herndon/Shaw			
Northbound			
Herdon Off Ramp	3 NBL	3 NBR	Total
	59	681	740
Shaw On Ramp	35 EBL	35 WBR	Total
	132	268	400

Section Data

W1	740
W2	400
Vw (total)	1140
R	0.35
V (Main Vol)	2,334

Southbound			
Herdon On Ramp	17 NBR	17 EBT	Total
	184	844	1028
Shaw Off Ramp	34 NBL	34 NBR	Total
	66	277	343

Section Data

W1	1028
W2	343
Vw (total)	1371
R	0.25
V (Main Vol)	2,659

2012 PM			
Herndon/Shaw			
Northbound			
Herdon Off Ramp	3 NBL	3 NBR	Total
	82	901	983
Shaw On Ramp	35 EBL	35 WBR	Total
	65	372	437

Section Data

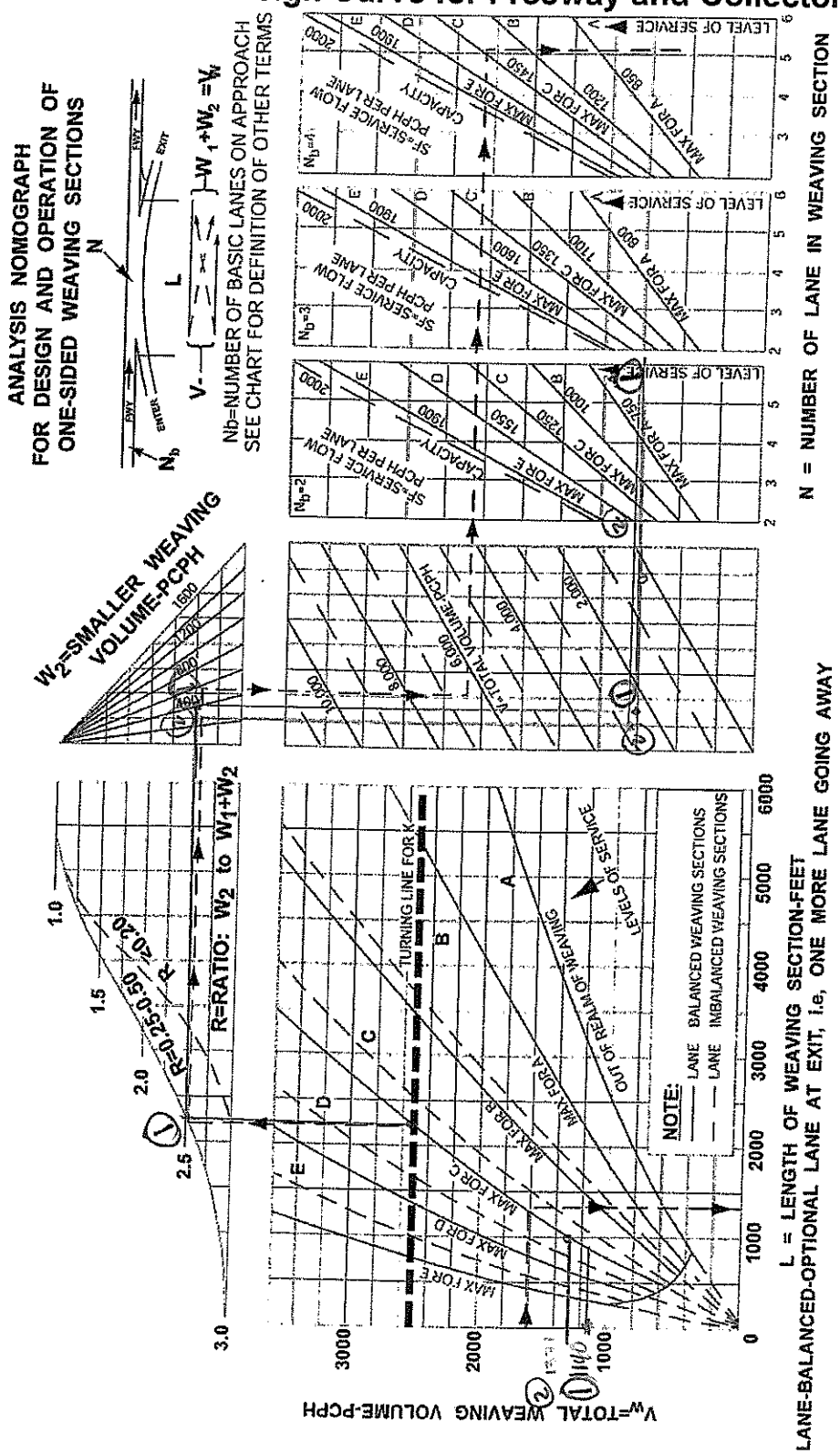
W1	983
W2	437
Vw (total)	1420
R	0.31
V (Main Vol)	3,342

Southbound			
Herdon On Ramp	17 NBR	17 EBT	Total
	63	591	654
Shaw Off Ramp	34 NBL	34 NBR	Total
	106	306	412

Section Data

W1	654
W2	412
Vw (total)	1066
R	0.39
V (Main Vol)	3,113

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

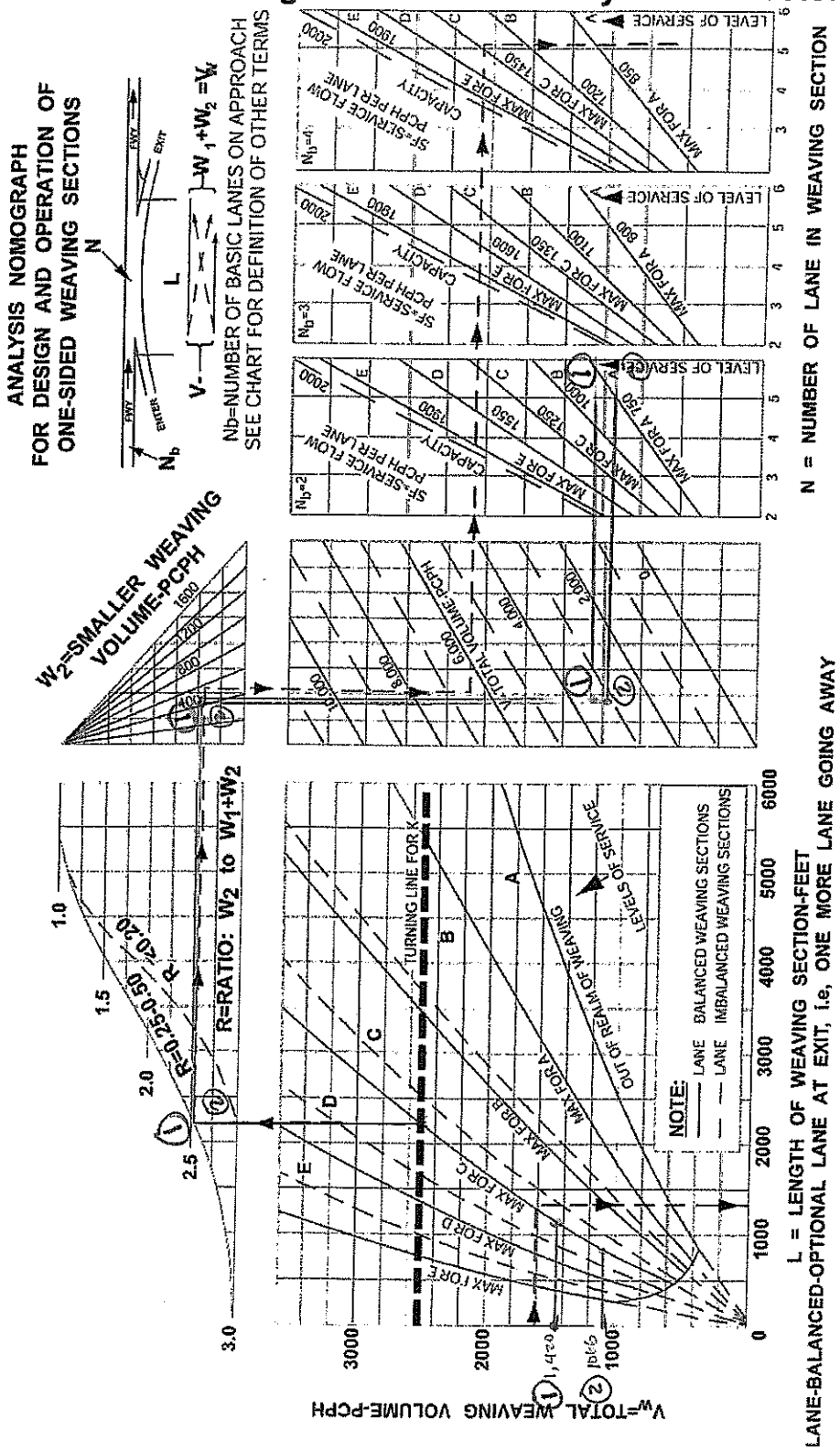
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_w) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_w, with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, form which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section). from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes.

2012 AVM
(Herndon / Swift)

① NB LOS D

② SB LOS D

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: This nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, Turning line for K: from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V_t form which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to N = 6 lanes.

2017 Pin (Hardin/Shaw)

① NB LOS F

② SB LOS E

2017 BASELINE TRAFFIC CONDITION

2017 AM

Herndon/Vetrans Analysis

Northbound

Herdon Off Ramp	3NBL	3NBR	Total
	26	485	511

Vetrans On Ramp	26EBR	26WBR	Total
	182	99	281

Section Data

W1	511
W2	281
Vw (total)	792
R	0.35
V (Main Vol)	2,790

Southbound

Herdon On Ramp	17 NBR	17 EBT	Total
	153	460	613

Vetrans Off Ramp	27 SBL	27 SBR	Total
	44	73	117

Section Data

W1	613
W2	117
Vw (total)	730
R	0.16
V (Main Vol)	3,094

Veterans/Shaw Analysis

Northbound

Vetrans Off Ramp	26 NBL	26 NBR	Total
	225	352	577

Shaw On Ramp	35 EBR	35 WBR	Total
	24	443	467

Section Data

W1	577
W2	467
Vw (total)	1044
R	0.45
V (Main Vol)	2,686

Southbound

Vetrans On Ramp	27 EBR	27 WBR	Total
	459	684	1143

Shaw Off Ramp	34 SBL	34 SBR	Total
	314	139	453

Section Data

W1	1143
W2	453
Vw (total)	1596
R	0.28
V (Main Vol)	4,983

2017 PM

Herndon/Vetrans Analysis

Northbound

Herdon Off Ramp	3NBL	3NBR	Total
	46	582	628

Vetrans On Ramp	26EBR	26WBR	Total
	436	204	640

Section Data

W1	640
W2	628
Vw (total)	1268
R	0.50
V (Main Vol)	4,186

Southbound

Herdon On Ramp	17 NBR	17 EBT	Total
	74	473	547

Vetrans Off Ramp	27 SBL	27 SBR	Total
	122	140	262

Section Data

W1	547
W2	262
Vw (total)	809
R	0.32
V (Main Vol)	3,690

Veterans/Shaw Analysis

Northbound

Vetrans Off Ramp	26 NBL	26 NBR	Total
	708	729	1437

Shaw On Ramp	35 EBR	35 WBR	Total
	32	915	947

Section Data

W1	1437
W2	947
Vw (total)	2384
R	0.40
V (Main Vol)	4,983

Southbound

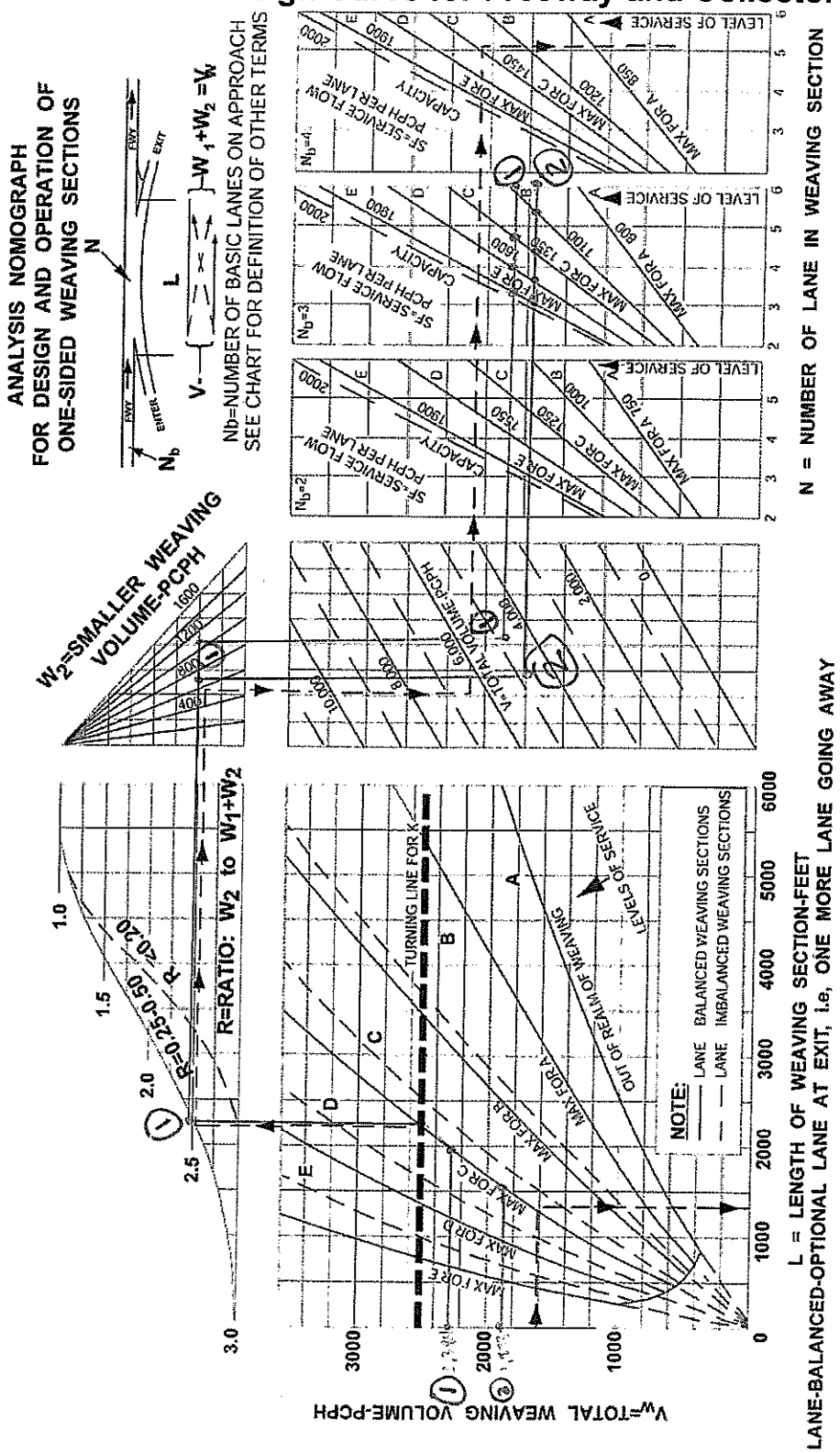
Vetrans On Ramp	27 EBR	27 WBR	Total
	382	809	1191

Shaw Off Ramp	34 SBL	34 SBR	Total
	357	285	642

Section Data

W1	1191
W2	642
Vw (total)	1833
R	0.35
V (Main Vol)	4,983

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

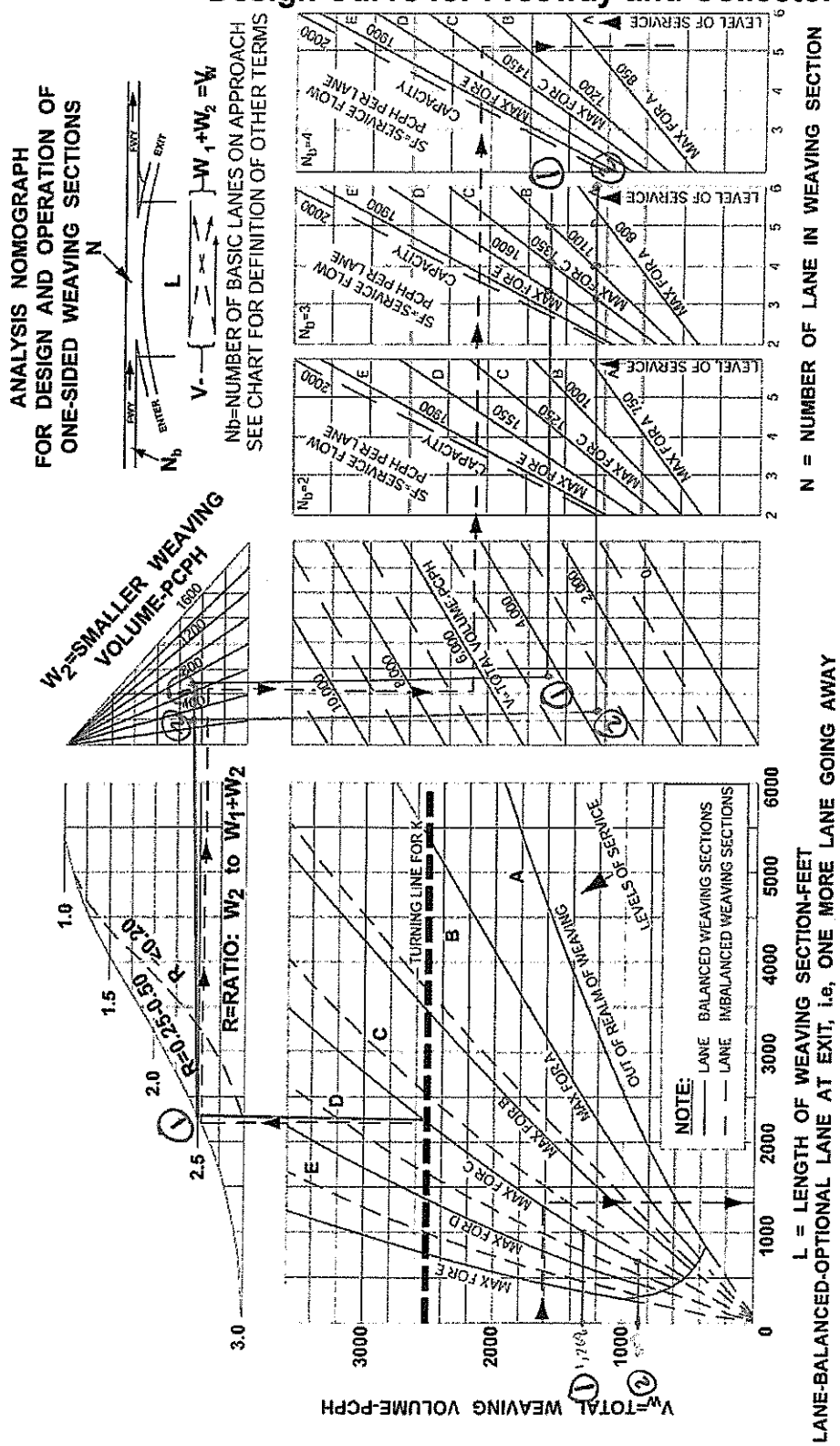
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W, with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes.

2017 PM
(Volume/Shape)

① NB LOS E with 3 lanes. LOS D with 4 lanes, LOS E w/ [illegible]

② SB LOS E with 3 lanes. LOS A with 4 lanes.

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

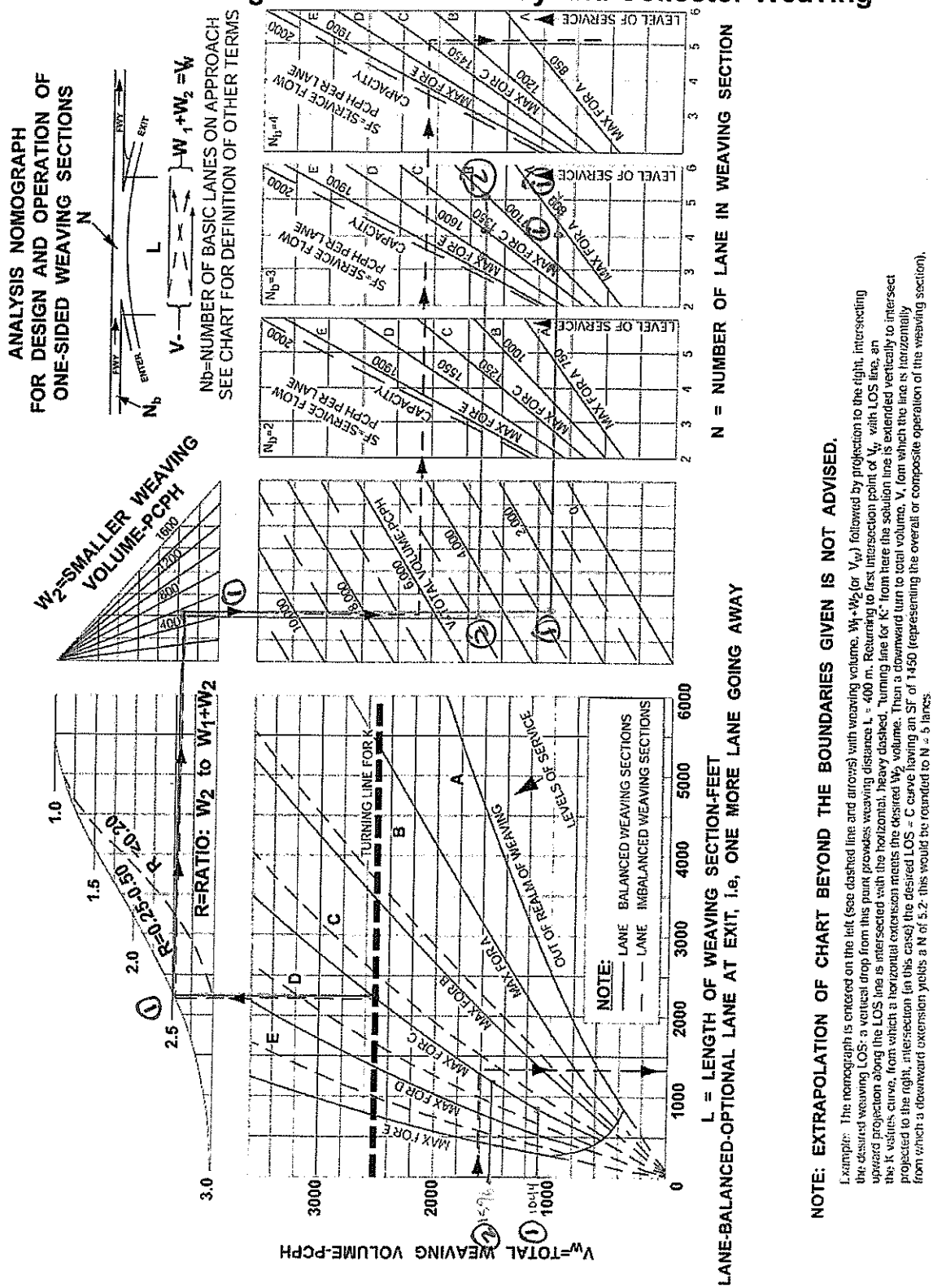
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_{W1}) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K." From here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, for which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2; this would be rounded to N = 5 lanes.

2017 PM
(Velevans/Hayden)

① NB LOS = D with 3 lanes, LOS = C with 4 lanes.

② SB LOS = C with 3 lanes.

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

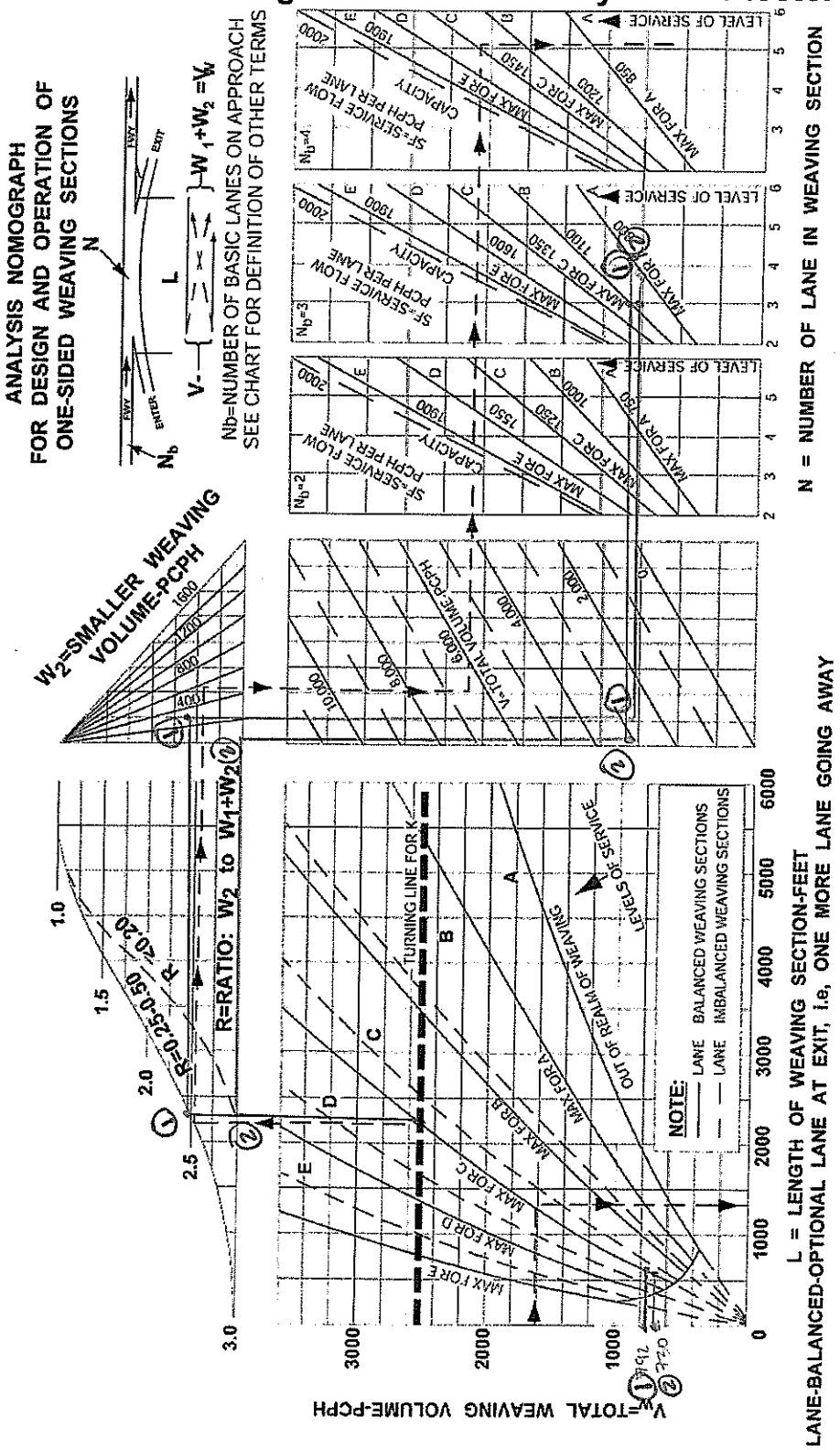
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_w) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_w with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the R values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2- this would be rounded to N = 5 lanes.

① NB LOS = B with 3 lanes

② SB LOS = D with 3 lanes, LOS C with 4 lanes

2014 AM
(Weekends / Sat)

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_w) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_w with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes.

2017 AM
(Hendrul Velasquez Analysis)

① NB LOS B w/ 3 lanes
② SB LOS B w/ 3 lanes

2019 BASELINE TRAFFIC CONDITION

2019 AM

Herndon/Vetrans Analysis

Northbound

Herdon Off Ramp	3NBL	3NBR	Total
	27	509	536

Vetrans On Ramp	26EBR	26WBR	Total
	197	105	302

Section Data

W1	536
W2	302
Vw (total)	838
R	0.36
V (Main Vol)	2,898

Southbound

Herdon On Ramp	17 NBR	17 EBT	Total
	171	464	635

Vetrans Off Ramp	27 SBL	27 SBR	Total
	54	86	140

Section Data

W1	635
W2	140
Vw (total)	775
R	0.18
V (Main Vol)	3,255

Veterans/Shaw Analysis

Northbound

Vetrans Off Ramp	26 NBL	26 NBR	Total
	272	415	687

Shaw On Ramp	35 EBR	35 WBR	Total
	27	478	505

Section Data

W1	687
W2	505
Vw (total)	1192
R	0.42
V (Main Vol)	3,285

Southbound

Vetrans On Ramp	27 EBR	27 WBR	Total
	480	709	1189

Shaw Off Ramp	34 SBL	24 SBR	Total
	321	142	463

Section Data

W1	1189
W2	463
Vw (total)	1652
R	0.28
V (Main Vol)	4,304

2019 PM

Herndon/Vetrans Analysis

Northbound

Herdon Off Ramp	3NBL	3NBR	Total
	40	595	635

Vetrans On Ramp	26EBR	26WBR	Total
	470	245	715

Section Data

W1	715
W2	635
Vw (total)	1350
R	0.47
V (Main Vol)	4,354

Southbound

Herdon On Ramp	17 NBR	17 EBT	Total
	95	496	591

Vetrans Off Ramp	27 SBL	27 SBR	Total
	142	148	290

Section Data

W1	591
W2	290
Vw (total)	881
R	0.33
V (Main Vol)	3,255

Veterans/Shaw Analysis

Northbound

Vetrans Off Ramp	26 NBL	26 NBR	Total
	620	762	1382

Shaw On Ramp	35 EBR	35 WBR	Total
	36	824	860

Section Data

W1	1382
W2	860
Vw (total)	2242
R	0.38
V (Main Vol)	5,022

Southbound

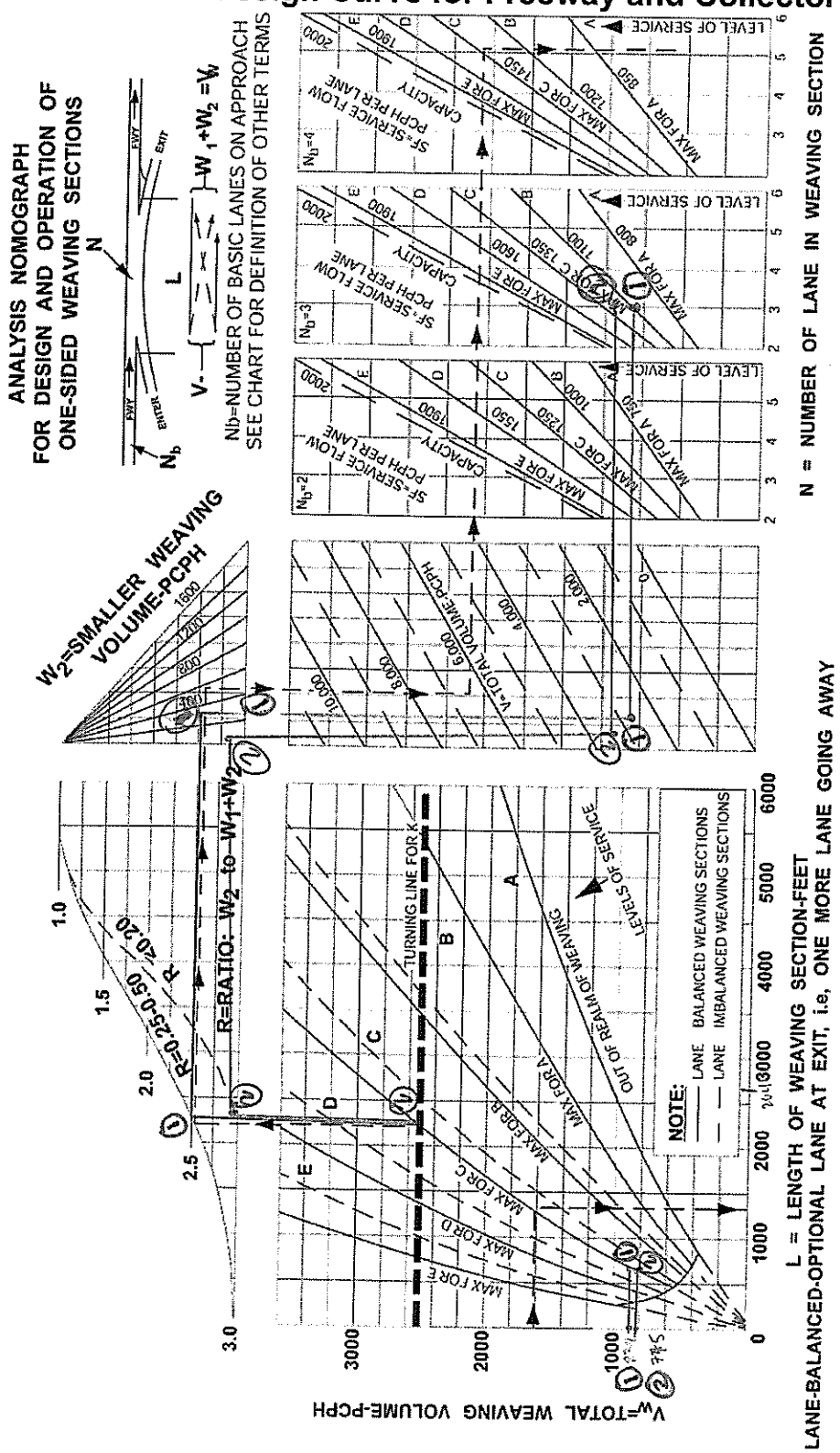
Vetrans On Ramp	27 EBR	27 WBR	Total
	392	820	1212

Shaw Off Ramp	34 SBL	24 SBR	Total
	363	310	673

Section Data

W1	1212
W2	673
Vw (total)	1885
R	0.36
V (Main Vol)	4,787

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

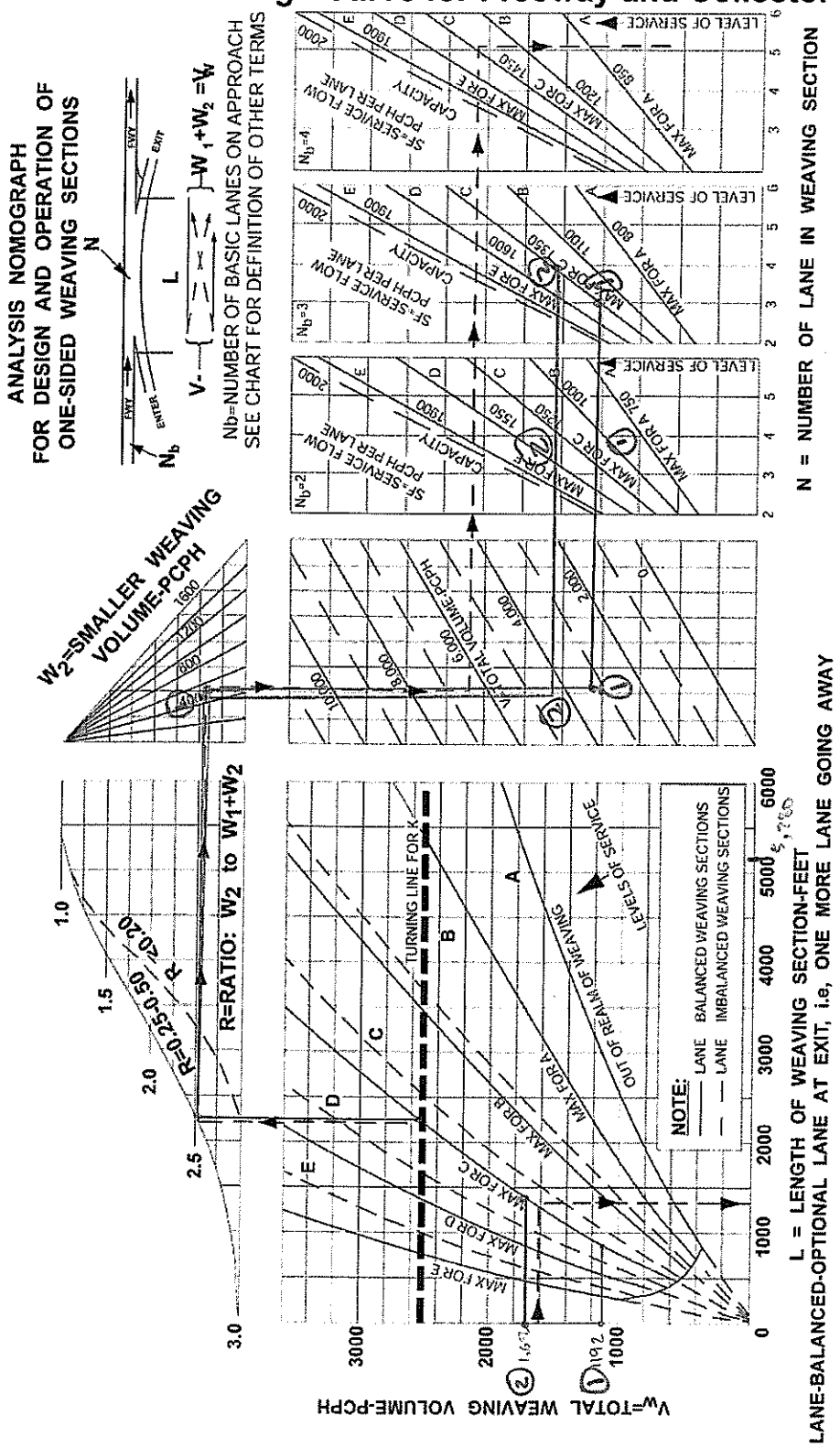
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS: a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension means the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes

2019 Am
(Highway / Highway)

① NB = LOS B with 3 Lanes

② SB = LOS B with 3 Lanes

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

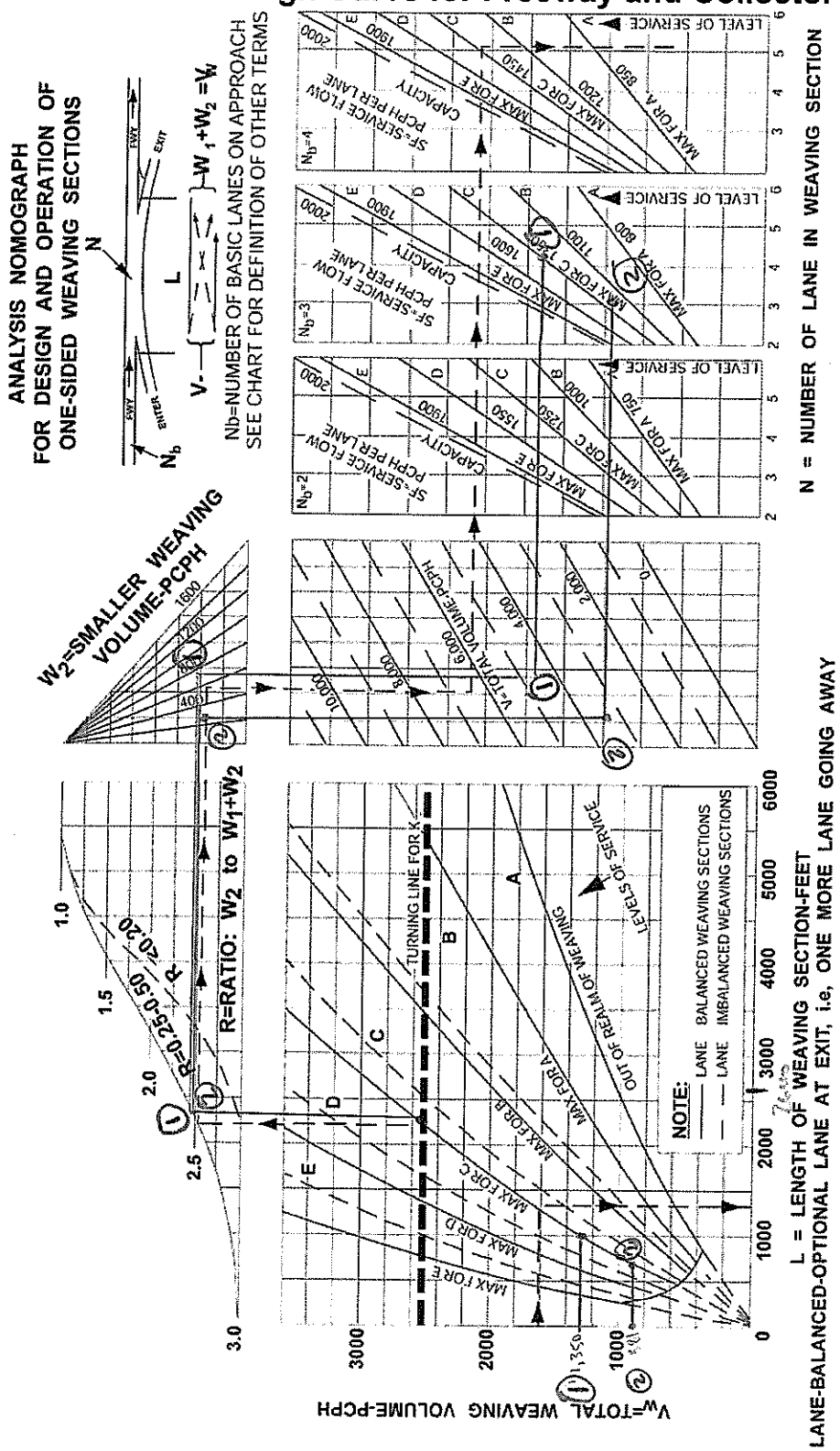
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W, with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension means the desired W_2 volume. Then a downward turn to total volume, V_W from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes.

2019 AM
(Wednesday / Shaw)

① NB = LOS C with 3 lanes

② SB = LOS D with 3 lanes, LOS C with 4 lanes

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

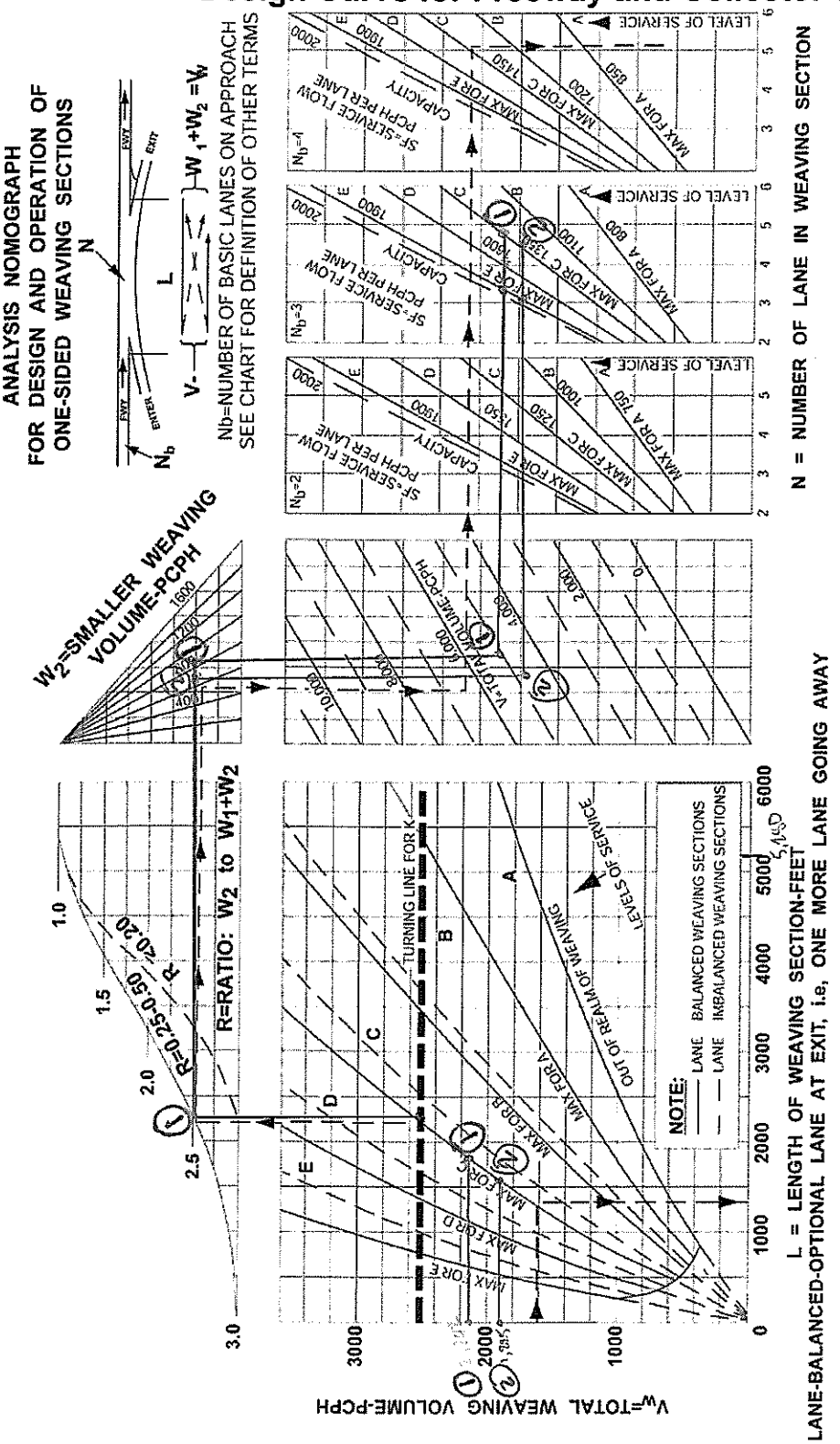
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K;" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V_W form which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2; this would be rounded to N = 5 lanes

2019 Pin
(Herndon / Velvaro)

① NB LOS E with 3 lanes, LOS D with 4 lanes

② SB LOS D with 3 lanes

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K:" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes

2019 Plan
(Volume/capacity)

① NB LOS E with 3 lanes, LOS D with 5 lanes

② SB LOS E with 3 lanes, LOS

2025 BASELINE TRAFFIC CONDITION

2025 AM

Herndon/Vetrans Analysis

Northbound

Herdon Off Ramp	3NBL	3NBR	Total
	26	516	542

Vetrans On Ramp	26EBR	26WBR	Total
	259	127	386

Section Data

W1	542
W2	386
Vw (total)	928
R	0.42
V (Main Vol)	3,483

Southbound

Herdon On Ramp	17 NBR	17 EBT	Total
	270	454	724

Vetrans Off Ramp	27 SBL	27 SBR	Total
	18	90	108

Section Data

W1	724
W2	108
Vw (total)	832
R	0.13
V (Main Vol)	3,933

Veterans/Shaw Analysis

Northbound

Vetrans Off Ramp	26 NBL	26 NBR	Total
	260	511	771

Shaw On Ramp	35 EBR	35 WBR	Total
	259	127	386

Section Data

W1	771
W2	386
Vw (total)	1157
R	0.33
V (Main Vol)	4,974

Southbound

Vetrans On Ramp	27 EBR	27 WBR	Total
	360	962	1322

Shaw Off Ramp	34 SBL	24 SBR	Total
	470	260	730

Section Data

W1	1322
W2	730
Vw (total)	2052
R	0.36
V (Main Vol)	4,666

2025 PM

Herndon/Vetrans Analysis

Northbound

Herdon Off Ramp	3NBL	3NBR	Total
	35	637	672

Vetrans On Ramp	26EBR	26WBR	Total
	214	214	428

Section Data

W1	672
W2	428
Vw (total)	1100
R	0.39
V (Main Vol)	4,974

Veterans/Shaw Analysis

Northbound

Vetrans Off Ramp	26 NBL	26 NBR	Total
	625	906	1531

Shaw On Ramp	35 EBR	35 WBR	Total
	99	710	809

Section Data

W1	1531
W2	809
Vw (total)	2340
R	0.35
V (Main Vol)	6,077

Southbound

Herdon On Ramp	17 NBR	17 EBT	Total
	103	483	586

Vetrans Off Ramp	27 SBL	27 SBR	Total
	37	189	226

Section Data

W1	586
W2	226
Vw (total)	812
R	0.28
V (Main Vol)	4,666

Southbound

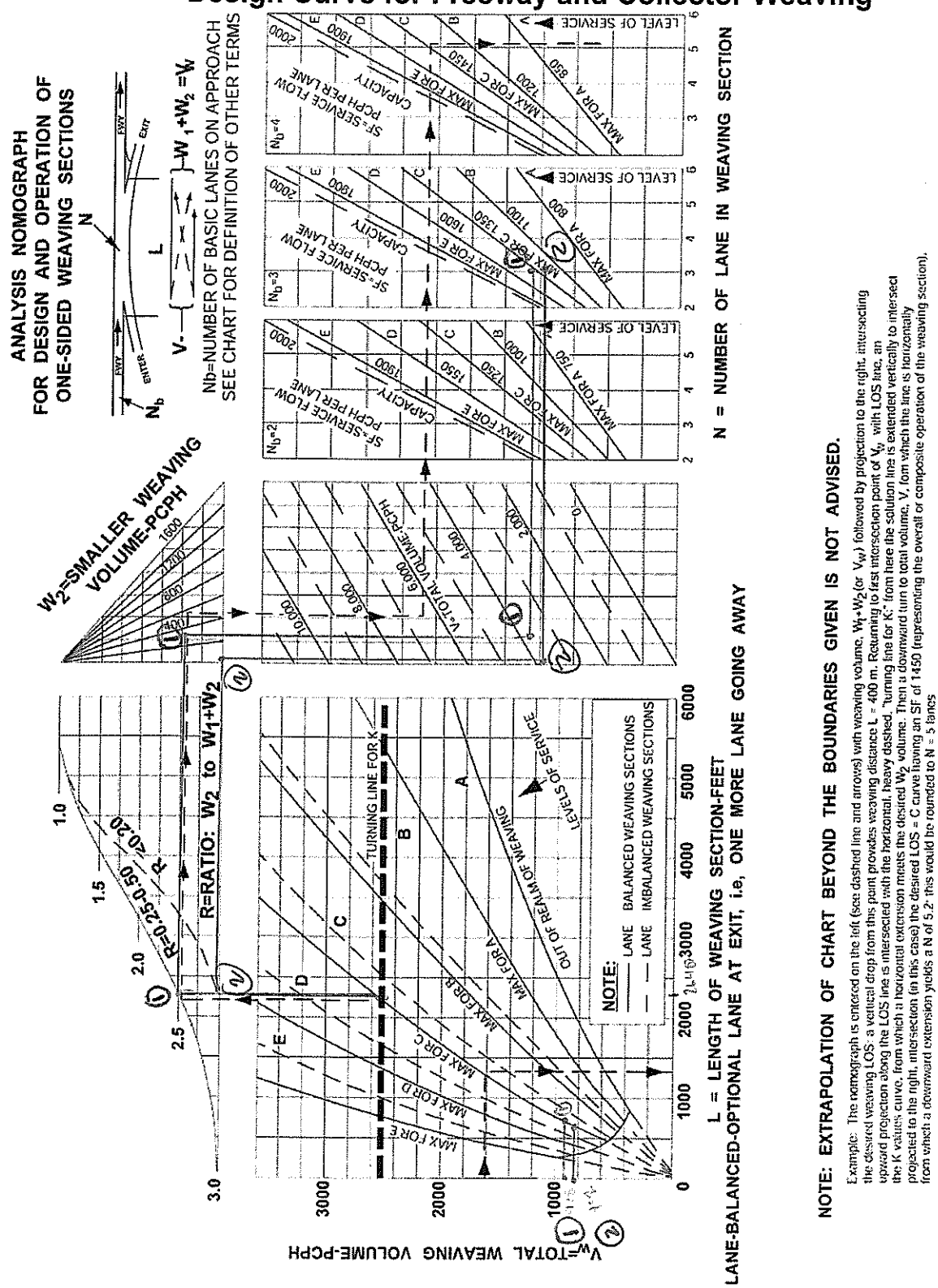
Vetrans On Ramp	27 EBR	27 WBR	Total
	352	1119	1471

Shaw Off Ramp	34 SBL	24 SBR	Total
	556	466	1022

Section Data

W1	1471
W2	1022
Vw (total)	2493
R	0.41
V (Main Vol)	5,912

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

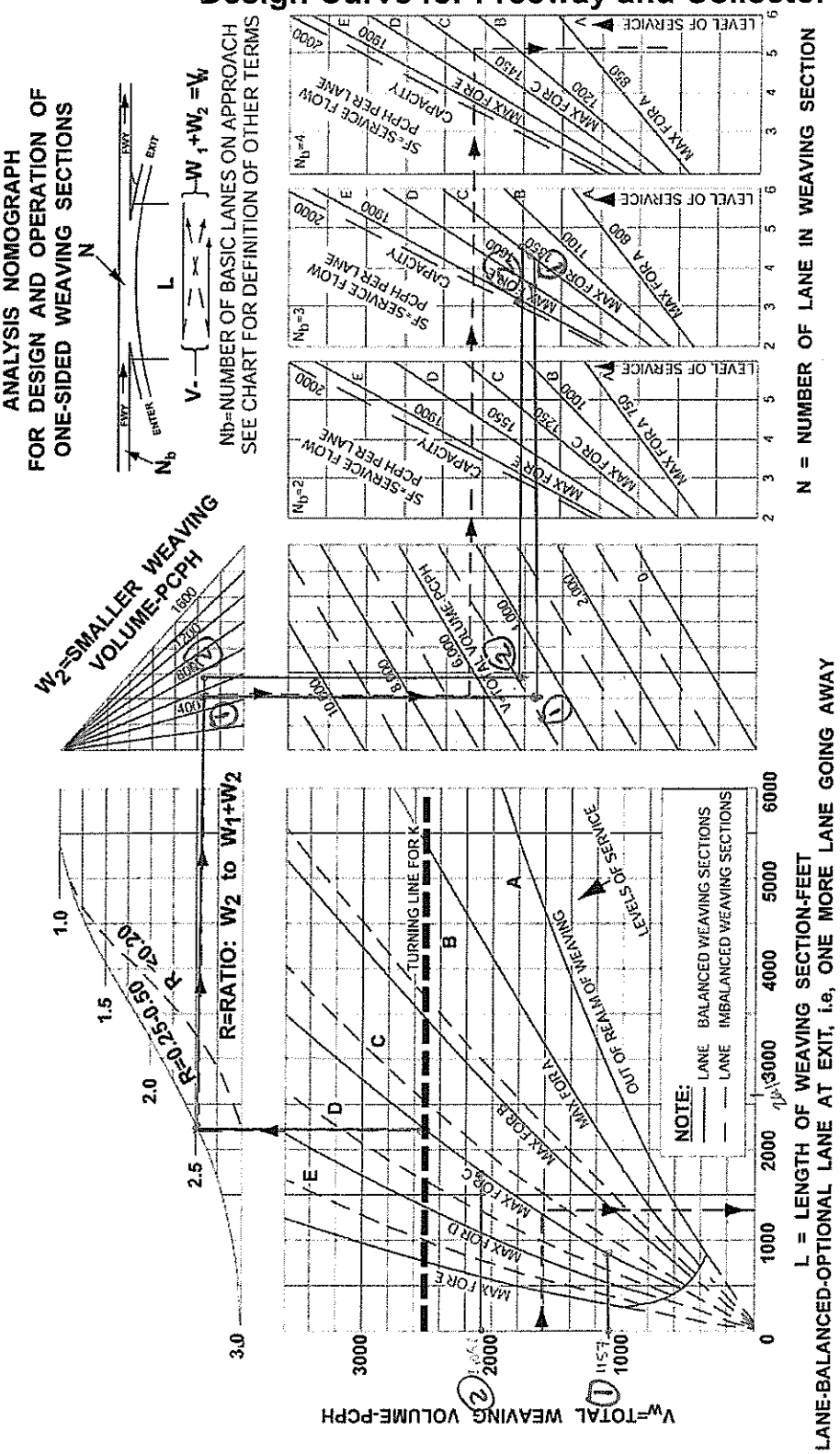
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS: a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, turning line for K.* from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2* this would be rounded to N = 5 lanes

2025 AM
(Herndon / Vel Ranch)

① NB LOS - C with 3 lanes.

② SB LOS - C with 3 lanes

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

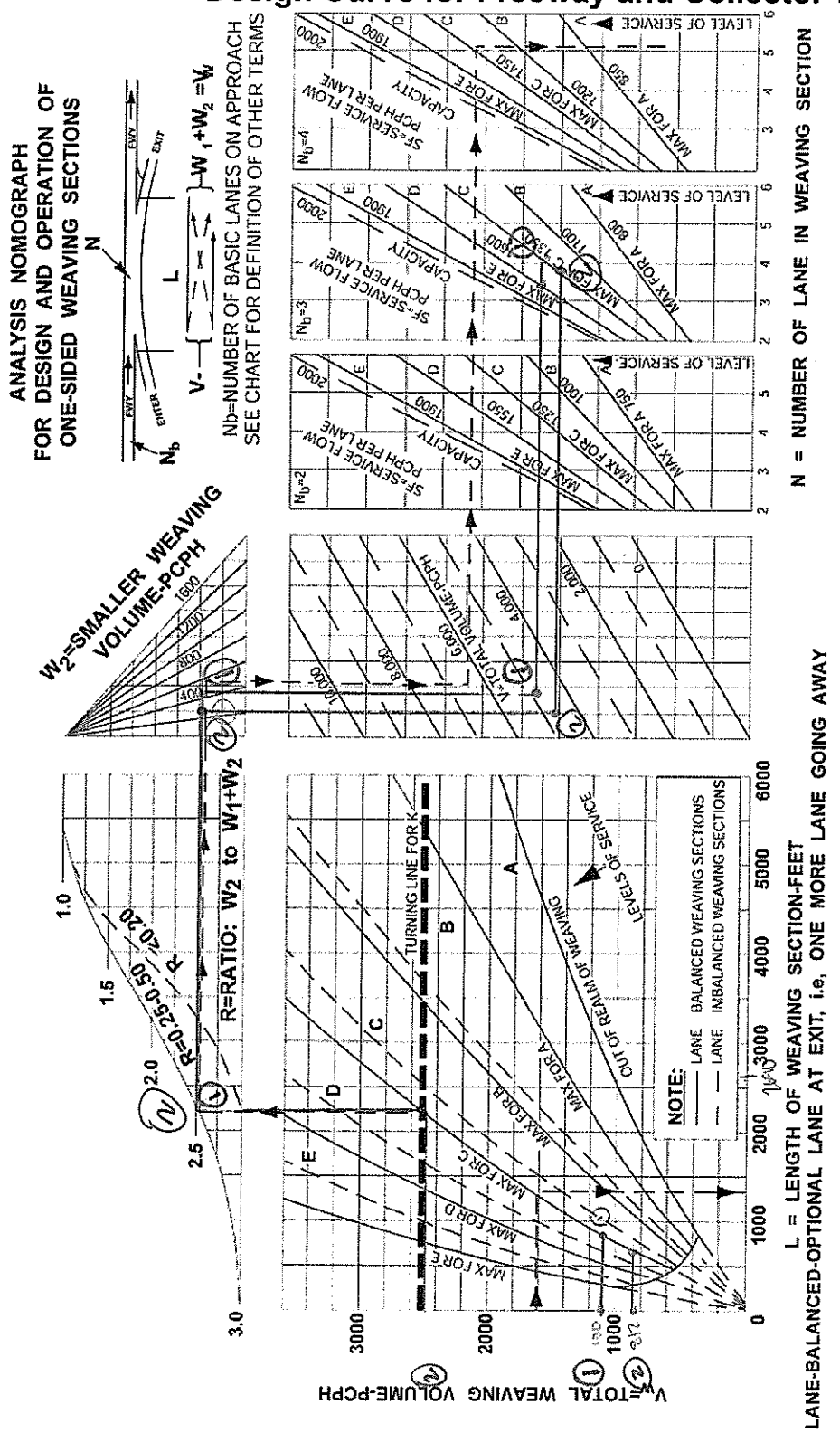
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS: a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K:" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes

① NB LOS = D with 3 lanes, LOS = C with 3 lanes

② SB LOS = E with 4 lanes, LOS = C with 5 lanes.

2025 AM
(Veterans/Shaw)

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

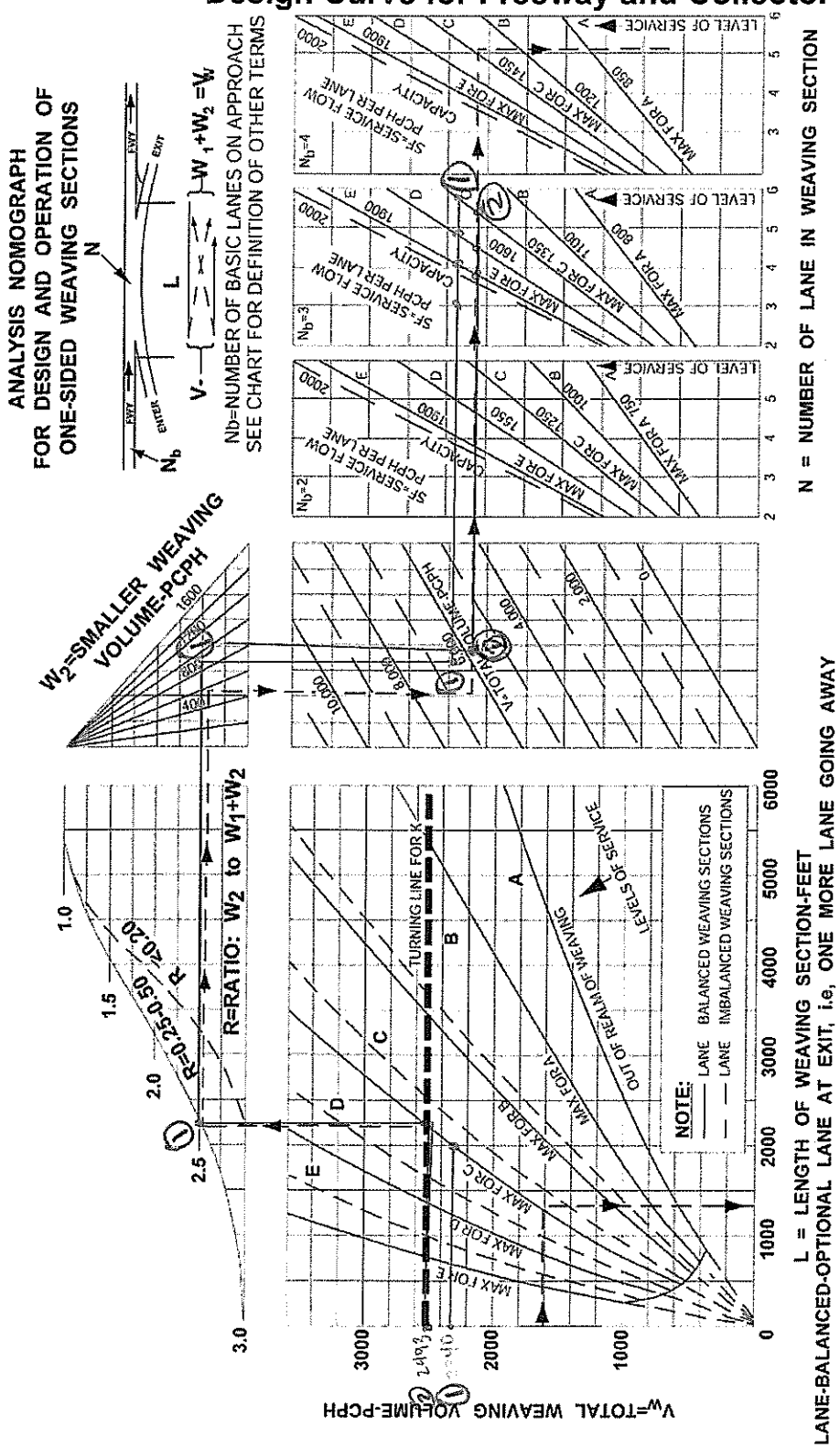
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K." from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V_W form which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2; this would be rounded to N = 5 lanes.

2025 PM
(Herdon / Veterans)

① NB = LOS D with 3 lanes, LOS C with 4 lanes

② SB = LOS E with 3 lanes, LOS C with 4 lanes

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V_1 (or V_T) is projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2; this would be rounded to N = 5 lanes

① NB LOS = F with 3 lanes, LOS D with 5 lanes, LOS C w/6 lanes

② SB LOS = F with 3 lanes, LOS D with 4 lanes, LOS C with 5 lanes

2025 PM

Velowest / Chapin

EXISTING PLUS PROJECT PHASES 1-5 TRAFFIC CONDITION

EX + Proj AM			
Herndon/Shaw			
Northbound			
Herdon Off Ramp	3 NBL	3 NBR	Total
	19	1315	1334
Shaw On Ramp	35 EBL	35 WBR	Total
	95	192	287

Section Data

W1	1334
W2	287
Vw (total)	1621
R	0.18
V (Main Vol)	3,018

Southbound			
Herdon On Ramp	17 NBR	17 EBT	Total
	77	724	801
Shaw Off Ramp	34 NBL	34 NBR	Total
	81	285	366

Section Data

W1	801
W2	366
Vw (total)	1167
R	0.31
V (Main Vol)	2,594

EX + Proj PM			
Herndon/Shaw			
Northbound			
Herdon Off Ramp	3 NBL	3 NBR	Total
	20	1641	1661
Shaw On Ramp	35 EBL	35 WBR	Total
	41	302	343

Section Data

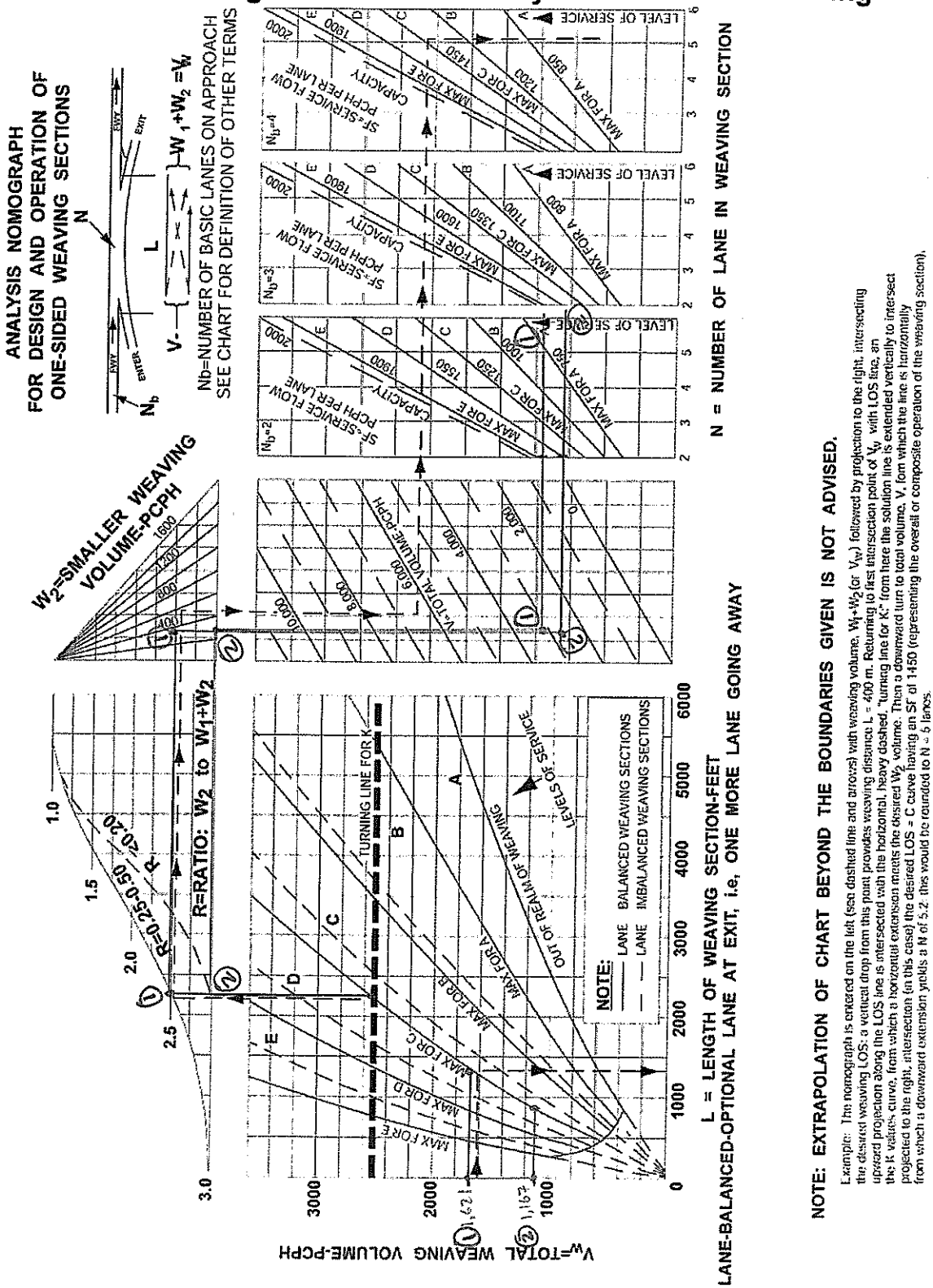
W1	1661
W2	343
Vw (total)	2004
R	0.17
V (Main Vol)	3,497

Southbound			
Herdon On Ramp	17 NBR	17 EBT	Total
	11	1776	1787
Shaw Off Ramp	34 NBL	34 NBR	Total
	143	482	625

Section Data

W1	1787
W2	625
Vw (total)	2412
R	0.26
V (Main Vol)	3,814

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

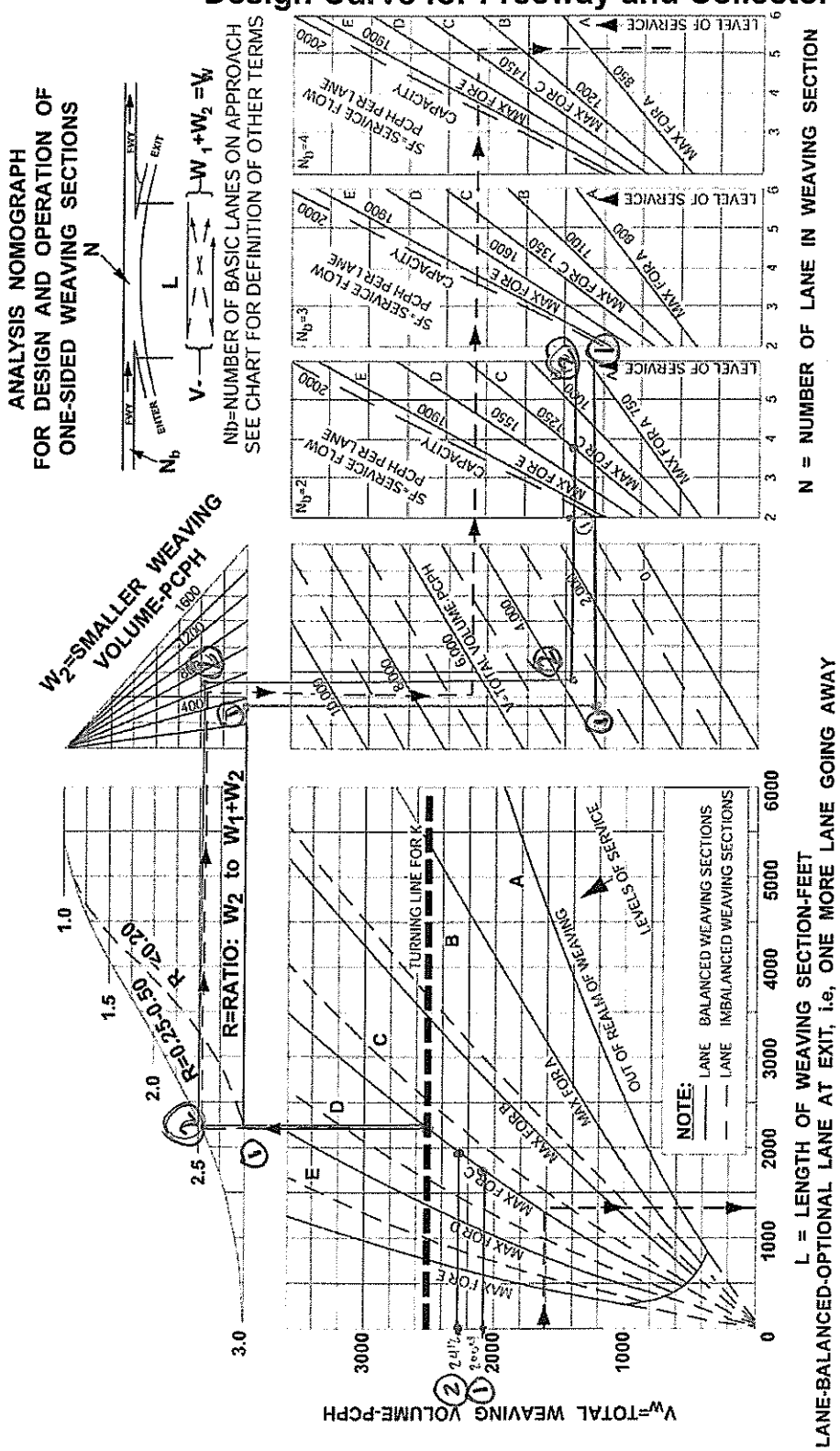
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the R values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes.

Ex + Proj Alm (Herndon/Shaw)

① NB LOS E

② SB LOS D.

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W, with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K." from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes.

EX + Proj PM (Hendon / Shaw)

① NB LOS F

② SB LOS F.

2010 BASELINE PLUS PROJECT PHASE 1 TRAFFIC CONDITION

2010 + Proj AM			
Herndon/Shaw			
Northbound			
Herdon Off Ramp	3 NBL	3 NBR	Total
	55	838	893
Shaw On Ramp	35 EBL	35 WBR	Total
	119	270	389

Section Data

W1	893
W2	389
Vw (total)	1282
R	0.30
V (Main Vol)	2,549

Southbound			
Herdon On Ramp	17 NBR	17 EBT	Total
	183	918	1101
Shaw Off Ramp	34 NBL	34 NBR	Total
	76	268	344

Section Data

W1	1101
W2	344
Vw (total)	1445
R	0.24
V (Main Vol)	2,678

2010 + Proj PM			
Herndon/Shaw			
Northbound			
Herdon Off Ramp	3 NBL	3 NBR	Total
	85	1171	1256
Shaw On Ramp	35 EBL	35 WBR	Total
	80	380	460

Section Data

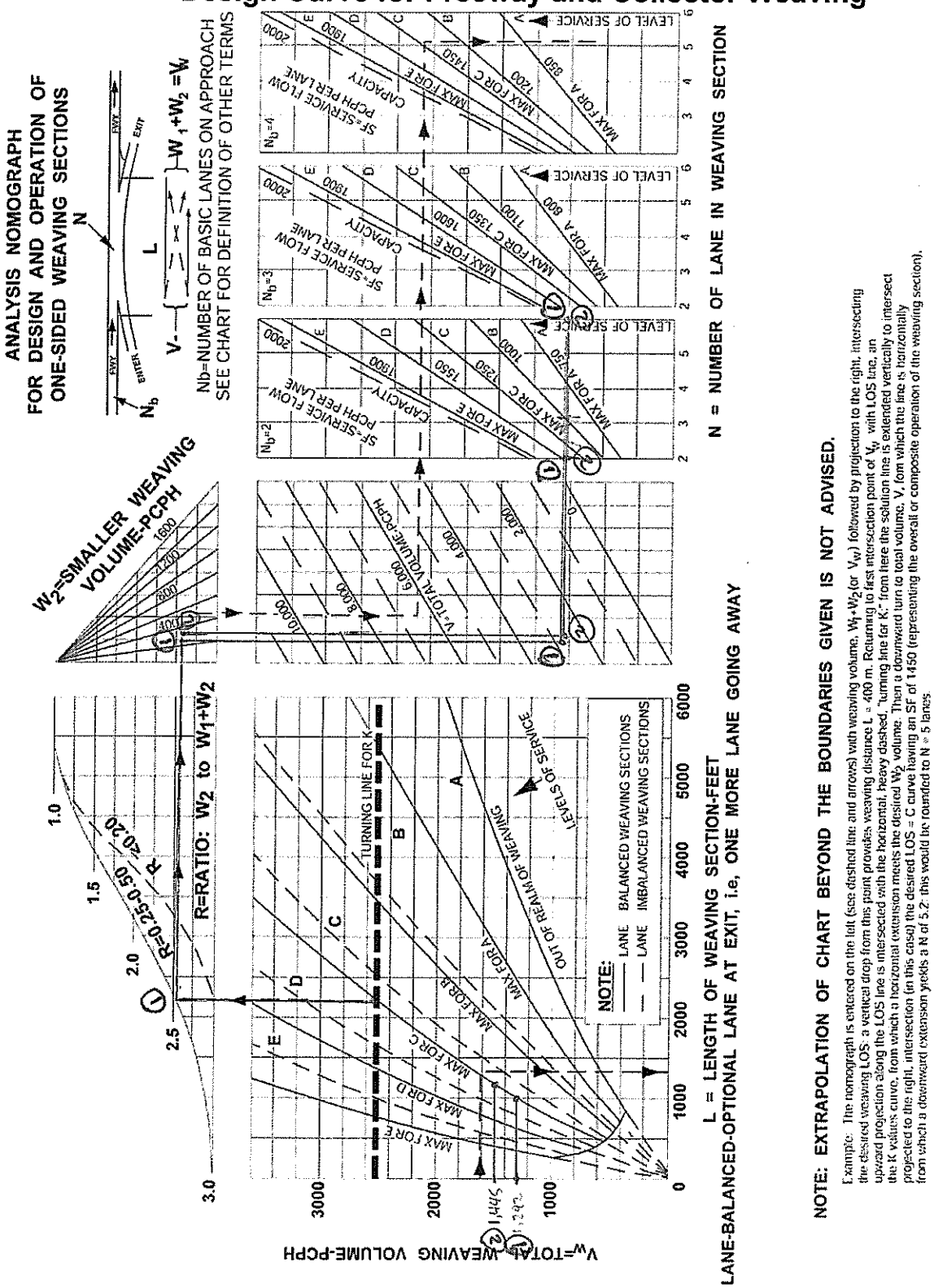
W1	1256
W2	460
Vw (total)	1716
R	0.27
V (Main Vol)	3,689

Southbound			
Herdon On Ramp	17 NBR	17 EBT	Total
	62	837	899
Shaw Off Ramp	34 NBL	34 NBR	Total
	120	293	413

Section Data

W1	899
W2	413
Vw (total)	1312
R	0.31
V (Main Vol)	3,438

Figure 504.7A
Design Curve for Freeway and Collector Weaving



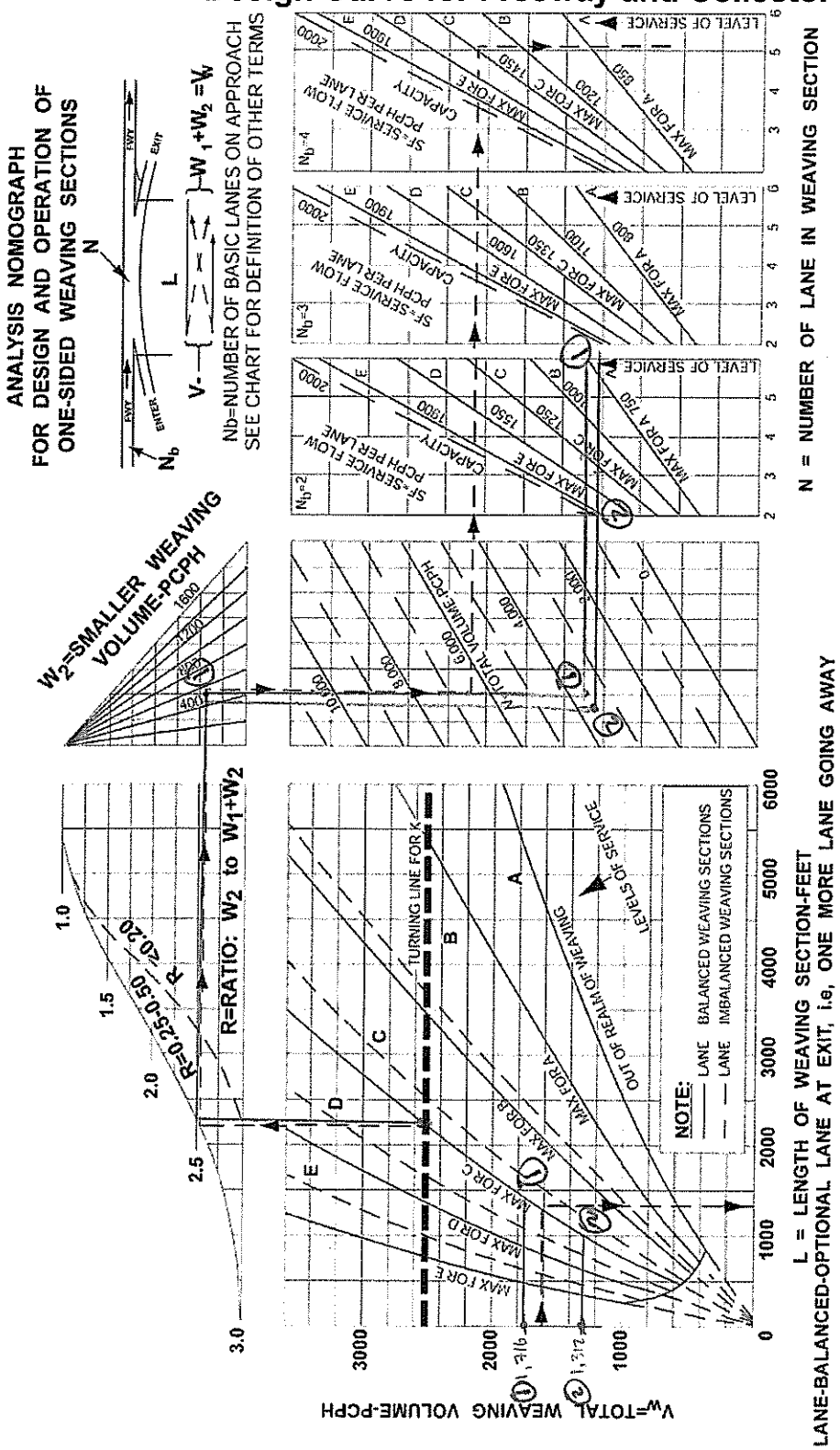
NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K;" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes.

2010 + Proj Am
(Herndon/Shady)

① NB LOS D
② SB LOS D

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K." from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve leaving an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes.

2010 + Proj Fm (Herndon / Shaw)

① NB LOS F

② SB LOS E.

2012 BASELINE PLUS PROJECT PHASES 1 & 2 TRAFFIC CONDITION

2012 + Proj AM			
Herndon/Shaw			
Northbound			
Herdon Off Ramp	3 NBL	3 NBR	Total
	59	1010	1069
Shaw On Ramp	35 EBL	35 WBR	Total
	155	271	426

Section Data

W1	1069
W2	426
Vw (total)	1495
R	0.28
V (Main Vol)	2,988

Southbound			
Herdon On Ramp	17 NBR	17 EBT	Total
	184	923	1107
Shaw Off Ramp	34 NBL	34 NBR	Total
	77	277	354

Section Data

W1	1107
W2	354
Vw (total)	1461
R	0.24
V (Main Vol)	2,829

2012 + Proj PM			
Herndon/Shaw			
Northbound			
Herdon Off Ramp	3 NBL	3 NBR	Total
	82	1353	1435
Shaw On Ramp	35 EBL	35 WBR	Total
	96	387	483

Section Data

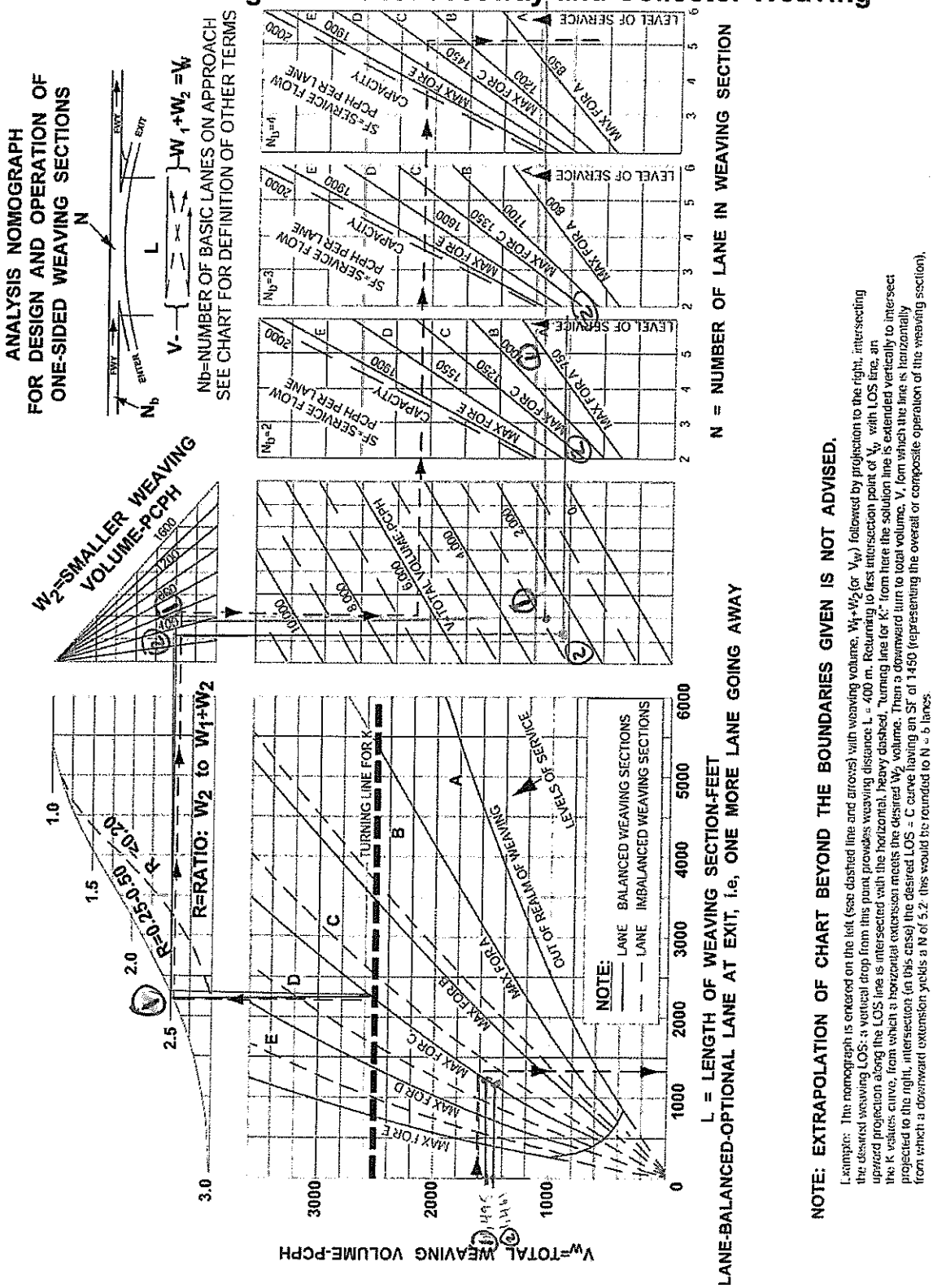
W1	1435
W2	483
Vw (total)	1918
R	0.25
V (Main Vol)	3,812

Southbound			
Herdon On Ramp	17 NBR	17 EBT	Total
	63	1071	1134
Shaw Off Ramp	34 NBL	34 NBR	Total
	145	313	458

Section Data

W1	1134
W2	458
Vw (total)	1592
R	0.29
V (Main Vol)	4,011

Figure 504.7A
Design Curve for Freeway and Collector Weaving



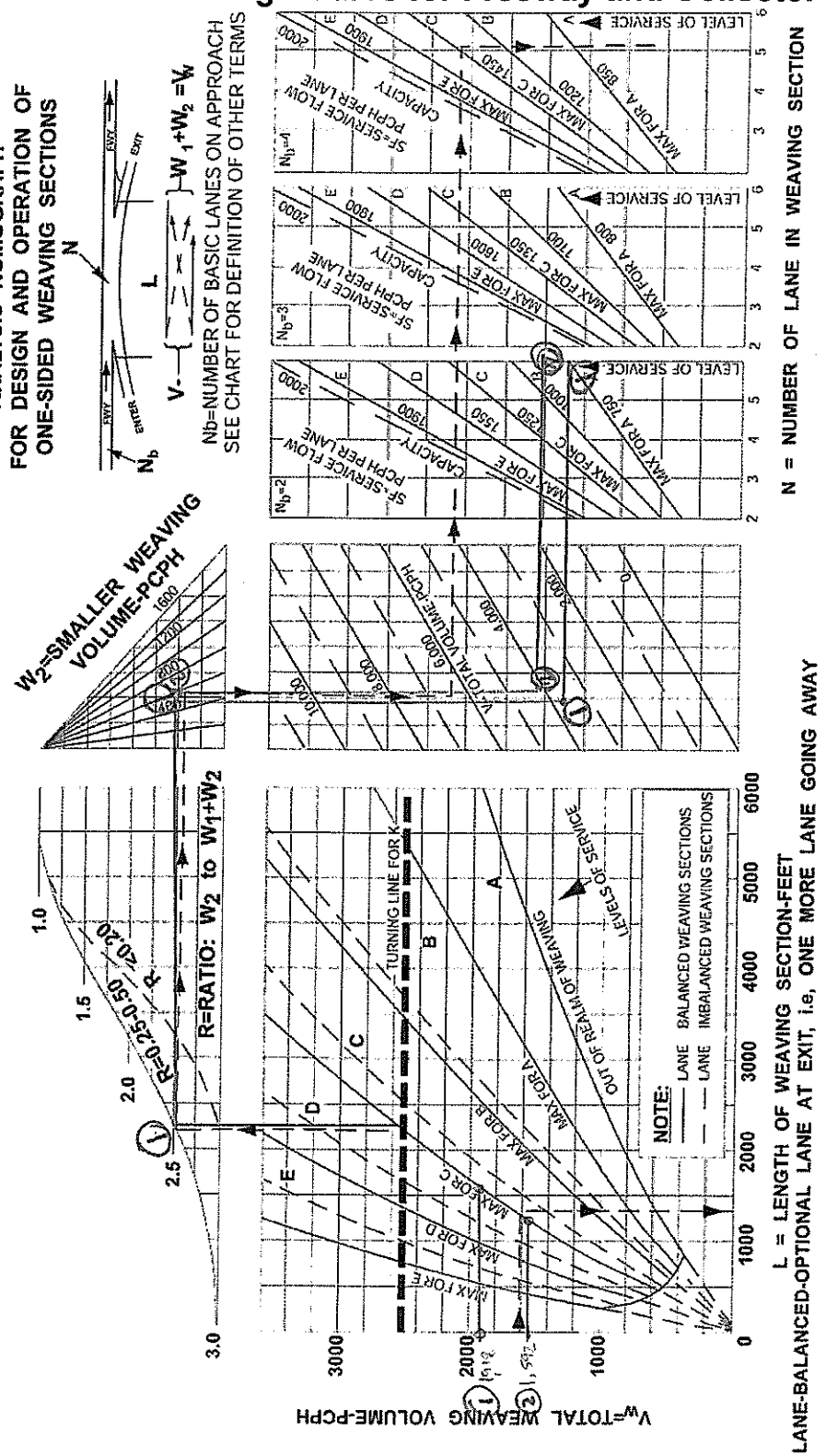
NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2 (this would be rounded to N = 6 lanes.

2012 + Proj Ann
(Hernandez/Chang)

① NB LOS D
② SB LOS D

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS: a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which this line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2 this would be rounded to N = 5 lanes.

2012 + Proj Fwy (Hendon / Shaw)

① NB LOS F

② SB LOS F

2017 BASELINE PLUS PROJECT PHASES 1-4 TRAFFIC CONDITION

2017 + Proj AM

Herndon/Veterans Analysis

Northbound

Herdon Off Ramp	3NBL	3NBR	Total
	30	883	913

Vetrans On Ramp	26EBR	26WBR	Total
	237	96	333

Section Data

W1	913
W2	333
Vw (total)	1246
R	0.27
V (Main Vol)	3,164

Southbound

Herdon On Ramp	17 NBR	17 EBT	Total
	189	474	663

Vetrans Off Ramp	27 SBL	27 SBR	Total
	21	82	103

Section Data

W1	663
W2	103
Vw (total)	766
R	0.13
V (Main Vol)	3,183

Veterans/Shaw Analysis

Northbound

Vetrans Off Ramp	26 NBL	26 NBR	Total
	199	994	1193

Shaw On Ramp	35 EBR	35 WBR	Total
	22	447	469

Section Data

W1	1193
W2	469
Vw (total)	1662
R	0.28
V (Main Vol)	4,023

Southbound

Vetrans On Ramp	27 EBR	27 WBR	Total
	362	935	1297

Shaw Off Ramp	34 SBL	34 SBR	Total
	227	38	265

Section Data

W1	1297
W2	265
Vw (total)	1562
R	0.17
V (Main Vol)	4,377

2017 + Proj PM

Herndon/Veterans Analysis

Northbound

Herdon Off Ramp	3NBL	3NBR	Total
	46	1281	1327

Vetrans On Ramp	26EBR	26WBR	Total
	683	174	857

Section Data

W1	1327
W2	857
Vw (total)	2184
R	0.39
V (Main Vol)	3,164

Southbound

Herdon On Ramp	17 NBR	17 EBT	Total
	211	1157	1368

Vetrans Off Ramp	27 SBL	27 SBR	Total
	146	456	602

Section Data

W1	1368
W2	602
Vw (total)	1970
R	0.31
V (Main Vol)	5,023

Veterans/Shaw Analysis

Northbound

Vetrans Off Ramp	26 NBL	26 NBR	Total
	213	1119	1332

Shaw On Ramp	35 EBR	35 WBR	Total
	33	959	992

Section Data

W1	1332
W2	992
Vw (total)	2324
R	0.43
V (Main Vol)	5,498

Southbound

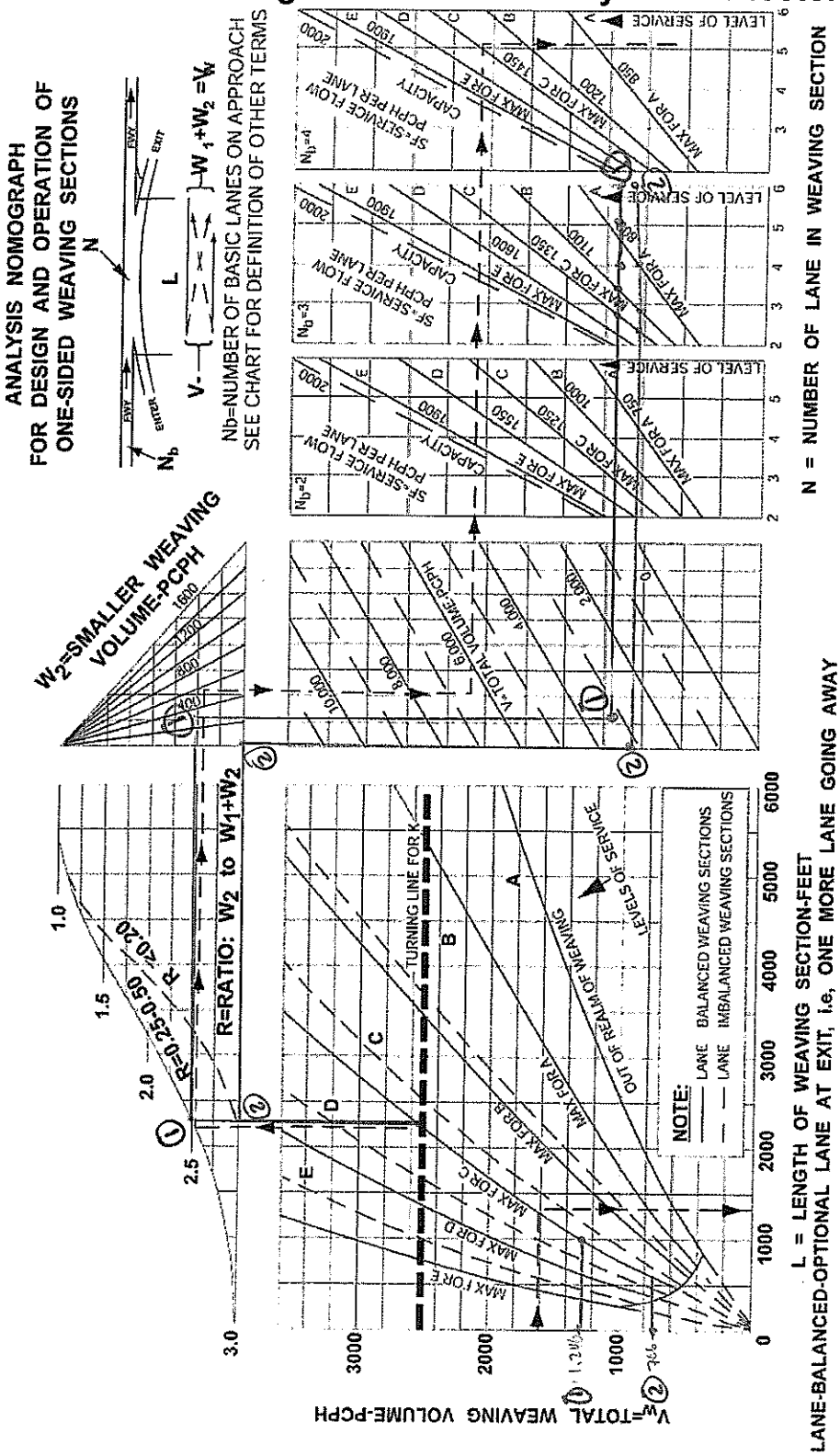
Vetrans On Ramp	27 EBR	27 WBR	Total
	109	1586	1695

Shaw Off Ramp	34 SBL	34 SBR	Total
	259	55	314

Section Data

W1	1695
W2	314
Vw (total)	2009
R	0.16
V (Main Vol)	5,754

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

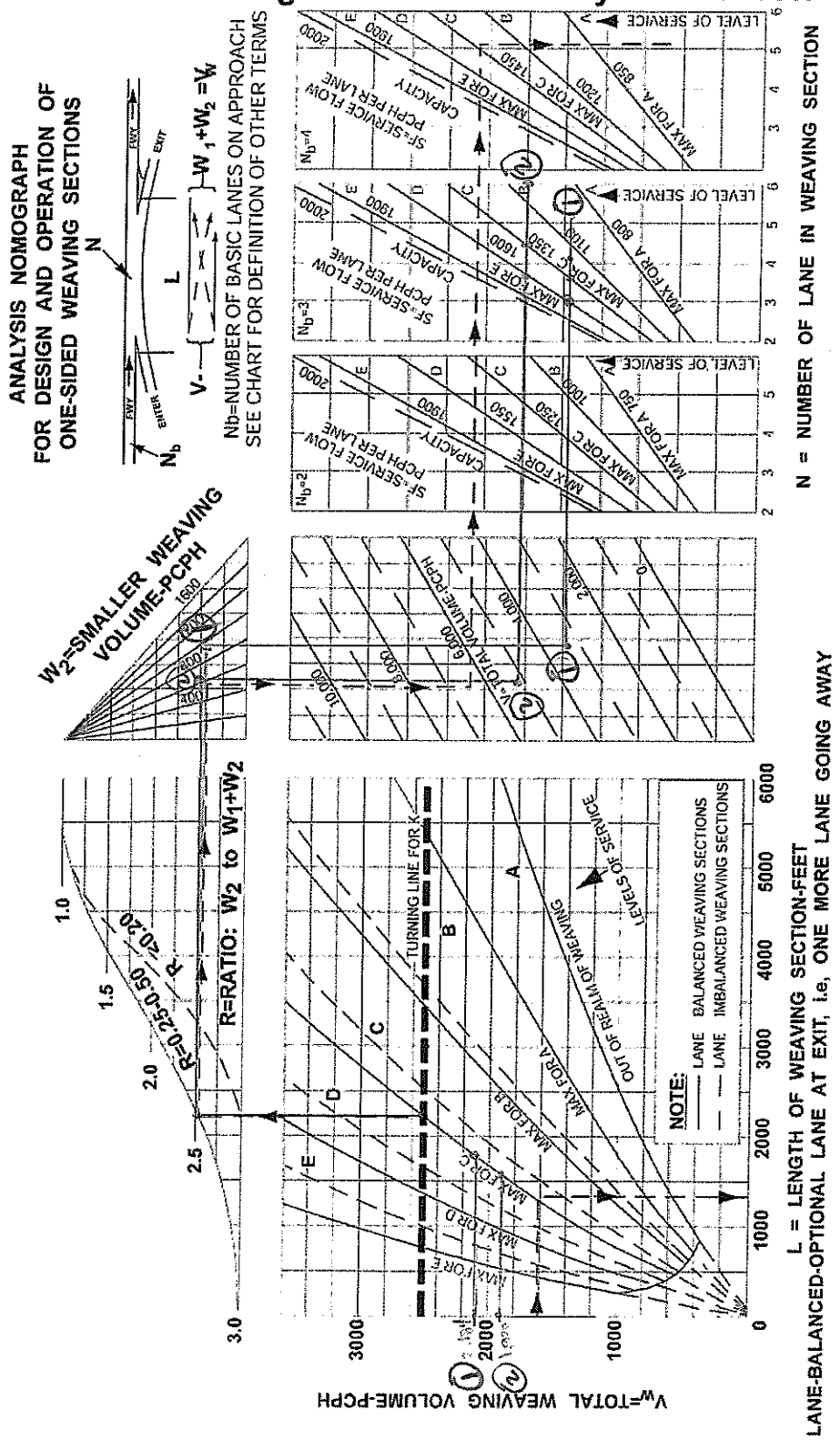
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W, with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the K vs R curve, from which a horizontal extension means the desired W_2 volume. Then a downward turn to total volume, V, (on which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2 this would be rounded to N = 5 lanes.

2017 + Proj Ann
(Weaving Handbook)

① NB LOS = C for 3 lanes,

② SB LOS = B for 3 lanes,

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

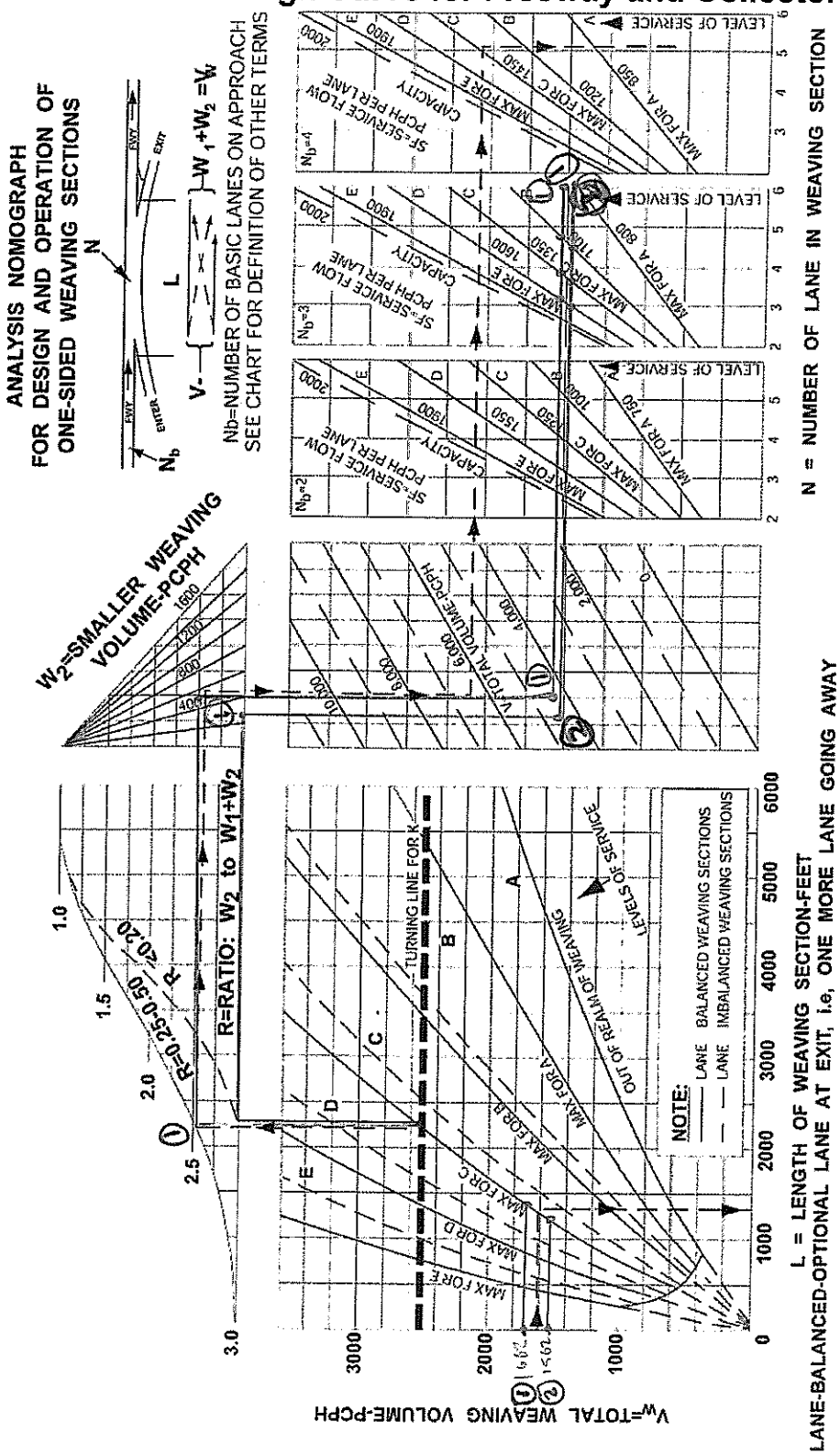
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (for V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, form which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section). from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes.

(Veterans / Holandes)

① NB - LOS D with 3 lanes, LOS A-B with 4 lanes.

② SB - LOS F with 5 lanes, LOS C with 4 lanes.

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

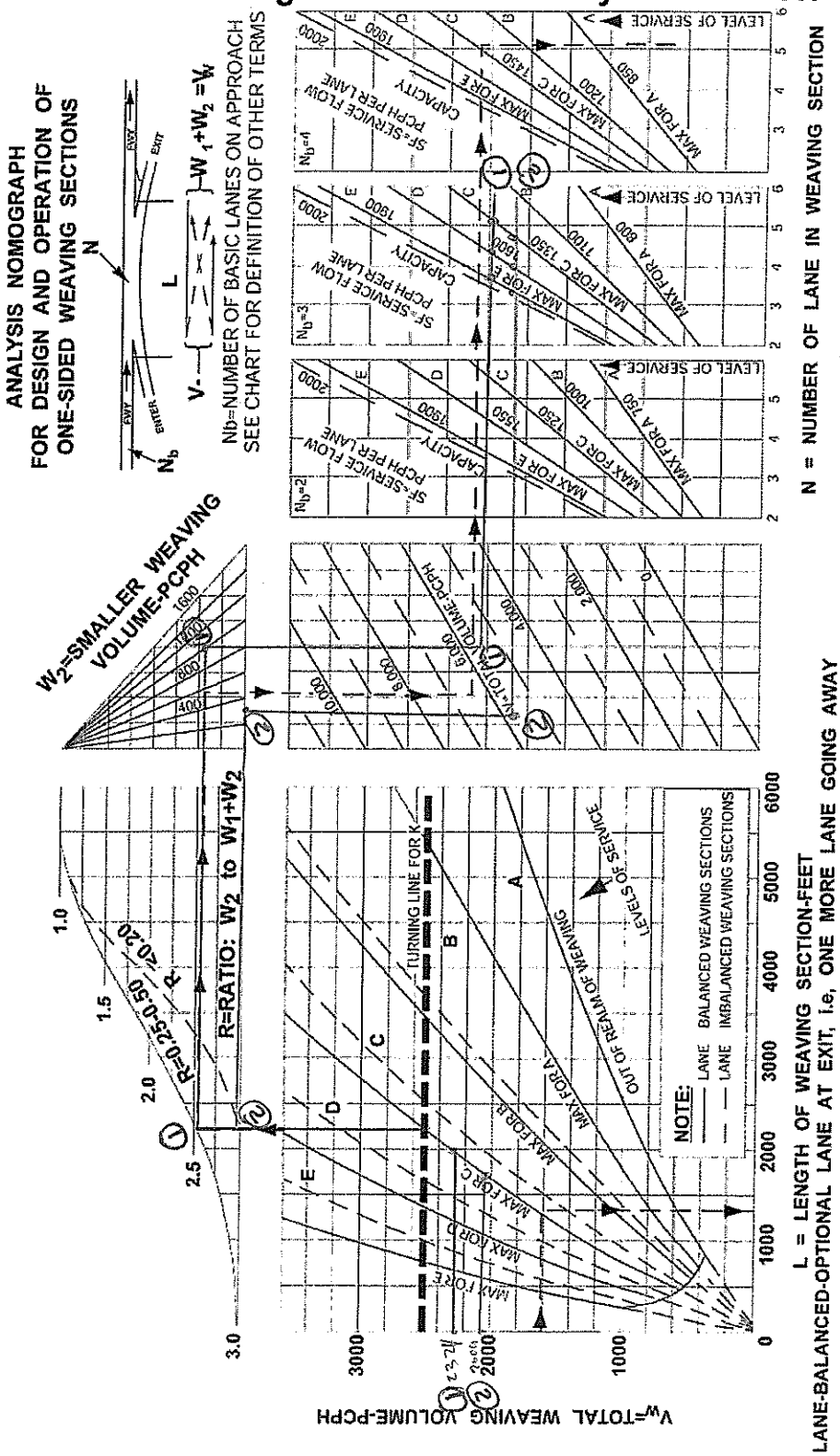
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W, with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2 this would be rounded to N = 5 lanes.

2017 + Proj AM (Volumes / Shapes)

① NB LOS = D with 3 lanes, LOS C with 4 lanes

② SB LOS = D with 3 lanes, LOS C with 4 lanes

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W, with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes.

① NB LOS = F with 3 lanes, LOS C with 5 lanes, 2017 + Proj Proj

② SB LOS = E with 3 lanes, LOS C with 5 lanes. (Optional Analysis)

2019 BASELINE PLUS PROJECT PHASES 1-5 TRAFFIC CONDITION

2019 plus Project AM

Herndon/Vetrans Analysis

Northbound

Herdon Off Ramp	3NBL	3NBR	Total
	35	979	1014

Vetrans On Ramp	26EBR	26WBR	Total
	302	101	403

Section Data

W1	1014
W2	403
Vw (total)	1417
R	0.28
V (Main Vol)	3,359

Southbound

Herdon On Ramp	17 NBR	17 EBT	Total
	152	189	341

Vetrans Off Ramp	27 SBL	27 SBR	Total
	35	113	148

Section Data

W1	341
W2	148
Vw (total)	489
R	0.30
V (Main Vol)	3,377

Veterans/Shaw Analysis

Northbound

Vetrans Off Ramp	26 NBL	26 NBR	Total
	236	1038	1274

Shaw On Ramp	35 EBR	35 WBR	Total
	27	483	510

Section Data

W1	1274
W2	510
Vw (total)	1784
R	0.29
V (Main Vol)	4,230

Southbound

Vetrans On Ramp	27 EBR	27 WBR	Total
	391	941	1332

Shaw Off Ramp	34 SBL	24 SBR	Total
	227	38	265

Section Data

W1	1332
W2	265
Vw (total)	1597
R	0.17
V (Main Vol)	5,879

2019 plus Project PM

Herndon/Vetrans Analysis

Northbound

Herdon Off Ramp	3 NBL	3 NBR	Total
	45	1243	1288

Vetrans On Ramp	26 EBR	26 WBR	Total
	844	188	1032

Section Data

W1	1288
W2	1032
Vw (total)	2320
R	0.44
V (Main Vol)	5,195

Southbound

Herdon On Ramp	17 NBR	17 EBT	Total
	159	1056	1215

Vetrans Off Ramp	27 SBL	27 SBR	Total
	164	373	537

Section Data

W1	1215
W2	537
Vw (total)	1752
R	0.31
V (Main Vol)	4,675

Veterans/Shaw Analysis

Northbound

Vetrans Off Ramp	26 NBL	26 NBR	Total
	273	1135	1408

Shaw On Ramp	35 EBR	35 WBR	Total
	54	905	959

Section Data

W1	1408
W2	959
Vw (total)	2367
R	0.41
V (Main Vol)	5,195

Southbound

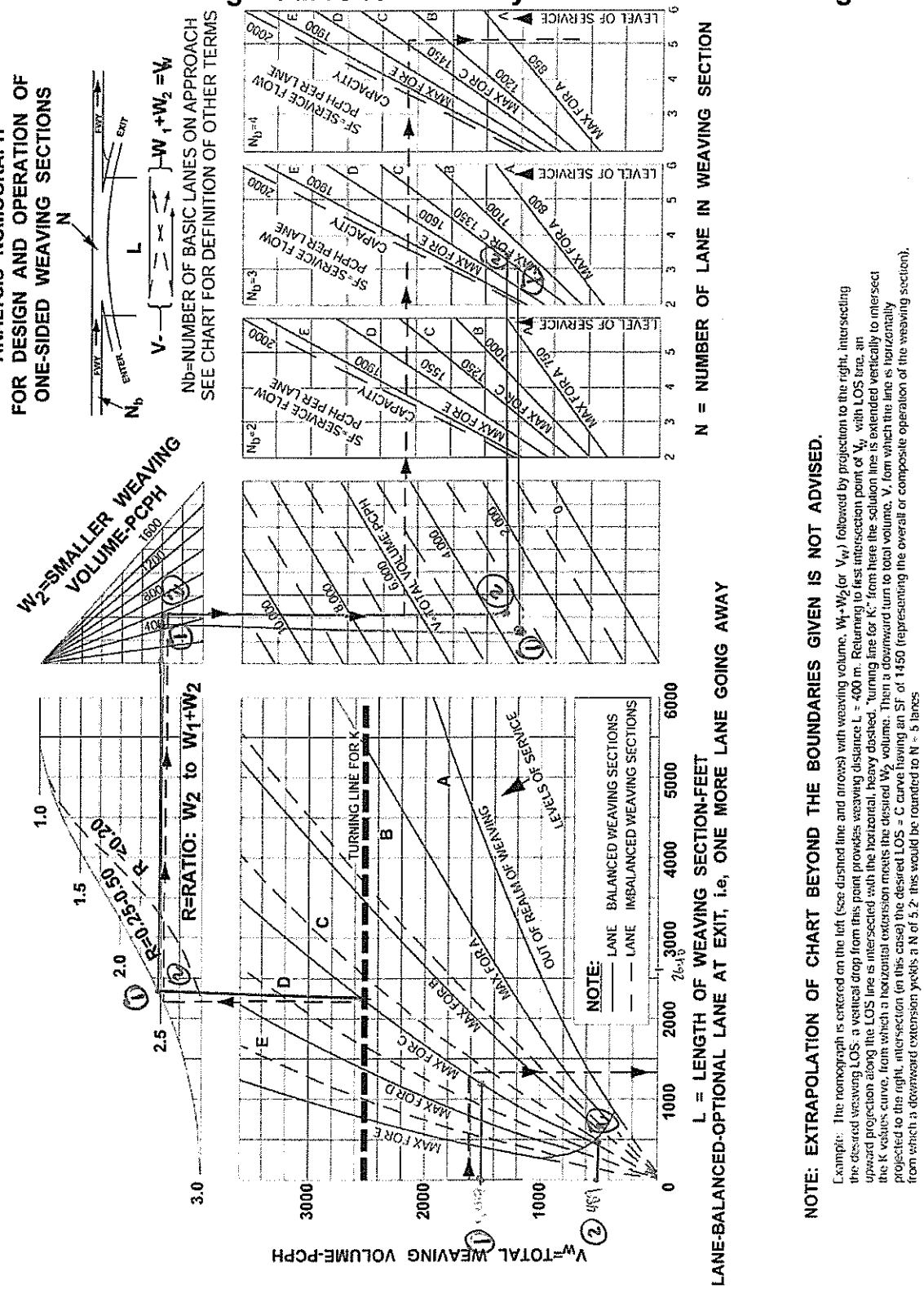
Vetrans On Ramp	27 EBR	27 WBR	Total
	110	1631	1741

Shaw Off Ramp	34 SBL	24 SBR	Total
	259	55	314

Section Data

W1	1741
W2	314
Vw (total)	2055
R	0.15
V (Main Vol)	5,879

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

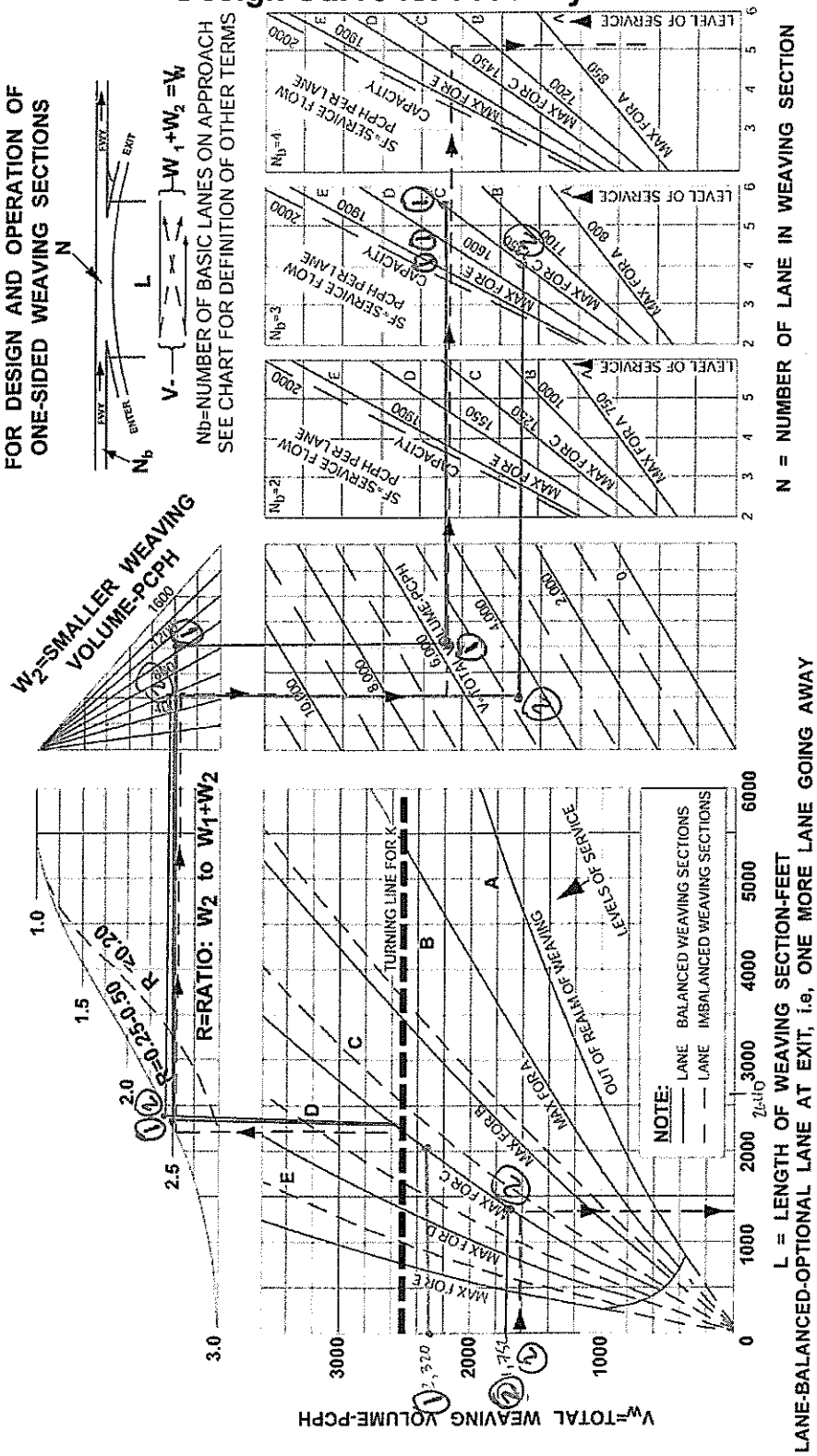
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS: a vertical drop from this point provides weaving distance L = 400 m. Returning to test intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K." from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V_t from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes

2019 + Project Am
(Herndon / Wetrans)

① NB LOS C with 3 lanes

② SB LOS C with 3 lanes

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

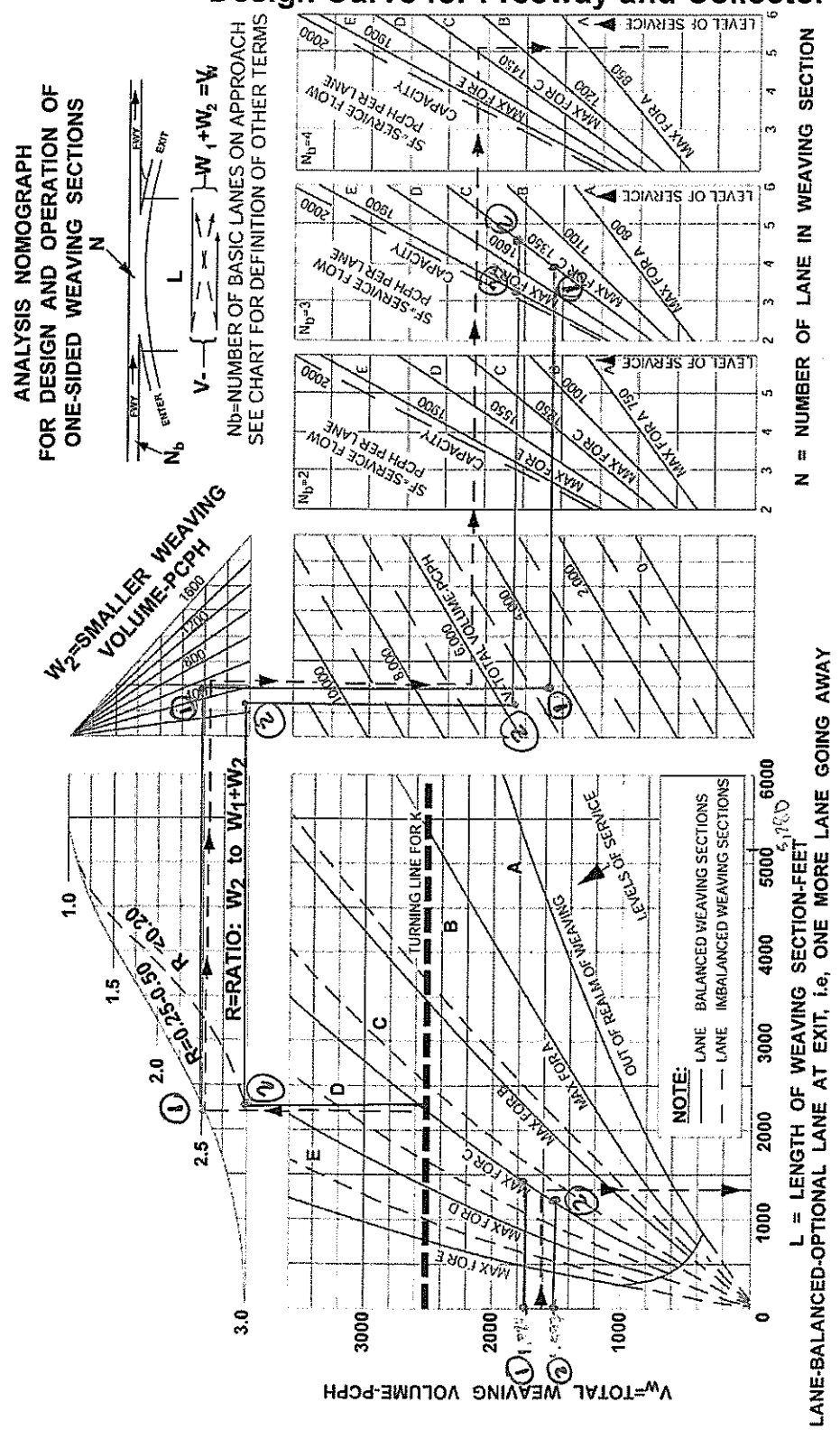
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS: a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K." from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V_1 from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes

2019 + Project PM
(Hernandez / [illegible])

① NB LOS = E with 3 lanes, LOS C with 5 lanes

② SB LOS = D with 3 lanes, LOS D with 4 lanes

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

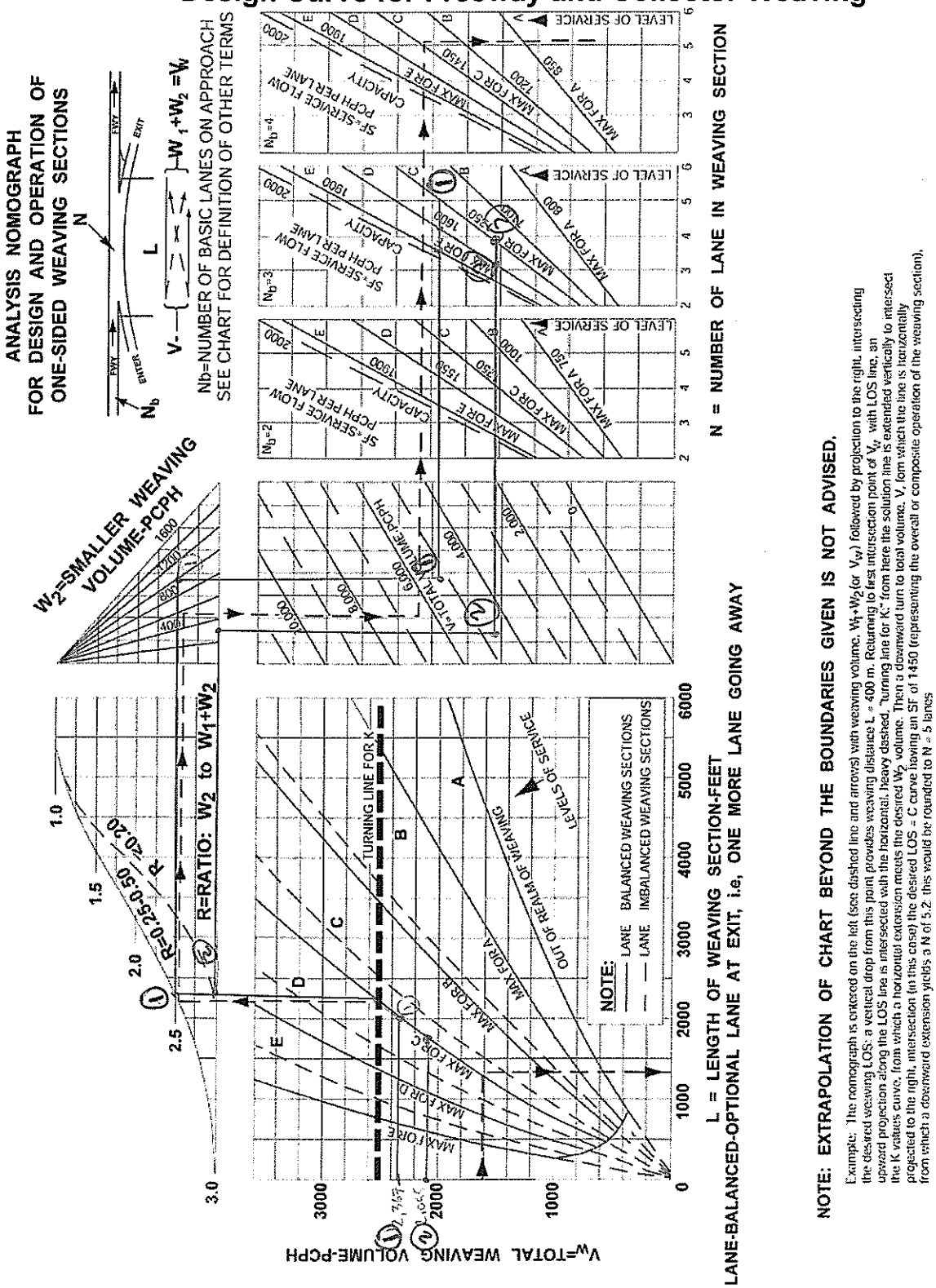
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_w) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_w, with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K." From here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V_1 from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes.

2019 4 Project Am

① NB LOS D with 2 lanes. LOS D with 4

② SB LOS E with 3 lanes LOS C with 5

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V_W (on which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2; this would be rounded to N = 5 lanes

① WB LOS F, with 3 lanes. LOS C with 5 lanes

② SB LOS D with 3 lanes. LOS B with 4 lanes

2019 + Project PM (Relevant / Study)

2025 BUILDOUT PLUS PROJECT PHASES 1-5 TRAFFIC CONDITION

2025 + Proj PM

Herndon/Vetrans Analysis

Northbound

Herdon Off Ramp	3NBL	3NBR	Total
	13	1391	1404

Vetrans On Ramp	26EBR	26WBR	Total
	384	216	600

Section Data

W1	1404
W2	600
Vw (total)	2004
R	0.30
V (Main Vol)	5,984

Southbound

Herdon On Ramp	17 NBR	17 EBT	Total
	178	1350	1528

Vetrans Off Ramp	27 SBL	27 SBR	Total
	88	180	268

Section Data

W1	1528
W2	268
Vw (total)	1796
R	0.15
V (Main Vol)	5,717

Veterans/Shaw Analysis

Northbound

Vetrans Off Ramp	26 NBL	26 NBR	Total
	251	1342	1593

Shaw On Ramp	35 EBR	35 WBR	Total
	403	854	1257

Section Data

W1	1593
W2	1257
Vw (total)	2850
R	0.44
V (Main Vol)	6,978

Southbound

Vetrans On Ramp	27 EBR	27 WBR	Total
	146	1719	1865

Shaw Off Ramp	34 SBL	24 SBR	Total
	549	542	1091

Section Data

W1	1865
W2	1091
Vw (total)	2956
R	0.37
V (Main Vol)	7,314

2025 + Proj AM

Herndon/Vetrans Analysis

Northbound

Herdon Off Ramp	3NBL	3NBR	Total
	26	1064	1090

Vetrans On Ramp	26EBR	26WBR	Total
	355	130	485

Section Data

W1	1090
W2	485
Vw (total)	1575
R	0.31
V (Main Vol)	4,026

Southbound

Herdon On Ramp	17 NBR	17 EBT	Total
	281	572	853

Vetrans Off Ramp	27 SBL	27 SBR	Total
	174	95	269

Section Data

W1	853
W2	269
Vw (total)	1122
R	0.24
V (Main Vol)	4,227

Veterans/Shaw Analysis

Northbound

Vetrans Off Ramp	26 NBL	26 NBR	Total
	260	1017	1277

Shaw On Ramp	35 EBR	35 WBR	Total
	355	130	485

Section Data

W1	1277
W2	485
Vw (total)	1762
R	0.28
V (Main Vol)	4,764

Southbound

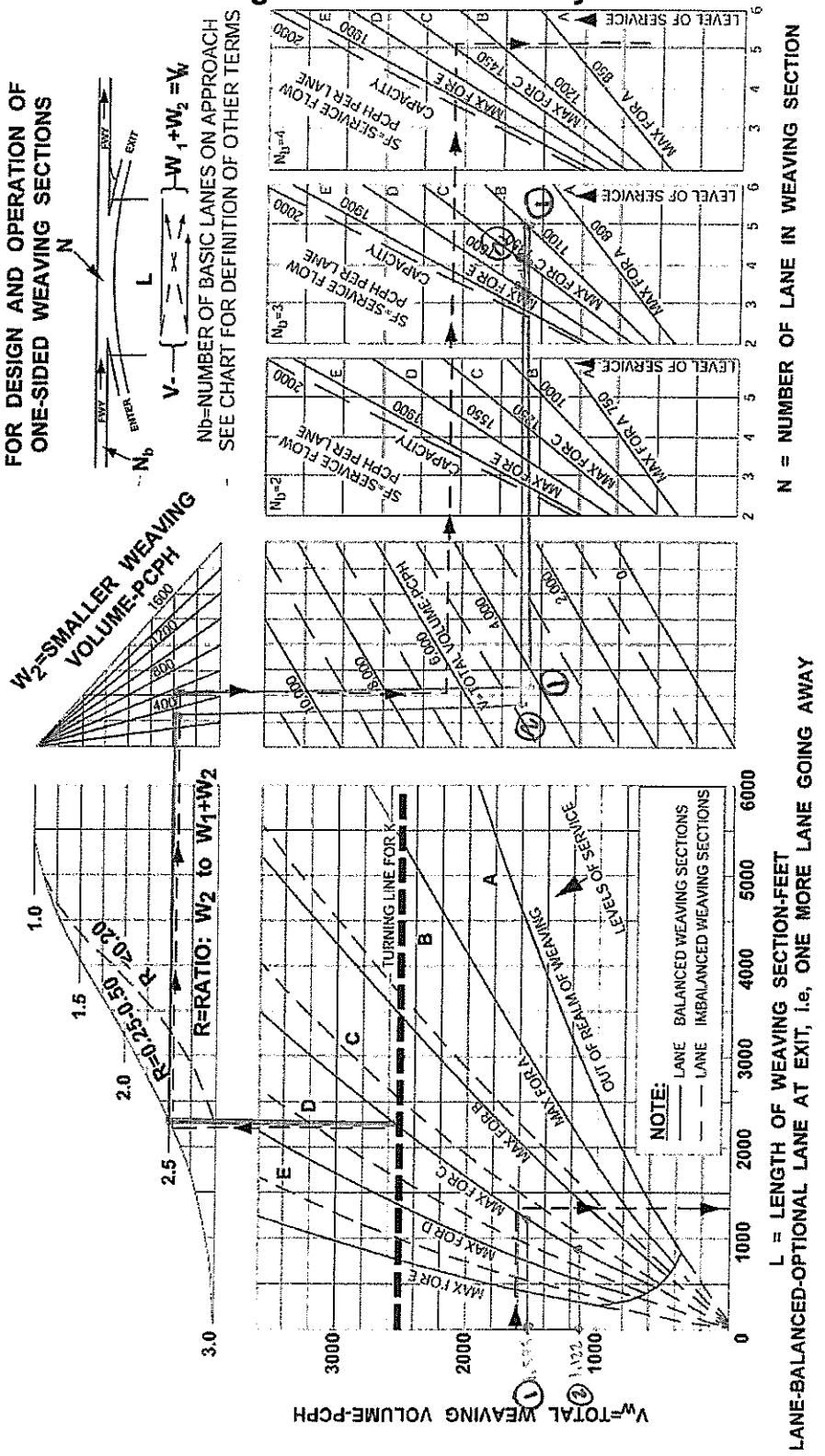
Vetrans On Ramp	27 EBR	27 WBR	Total
	363	1114	1477

Shaw Off Ramp	34 SBL	24 SBR	Total
	419	258	677

Section Data

W1	1477
W2	677
Vw (total)	2154
R	0.31
V (Main Vol)	7,314

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2; this would be rounded to N = 5 lanes.

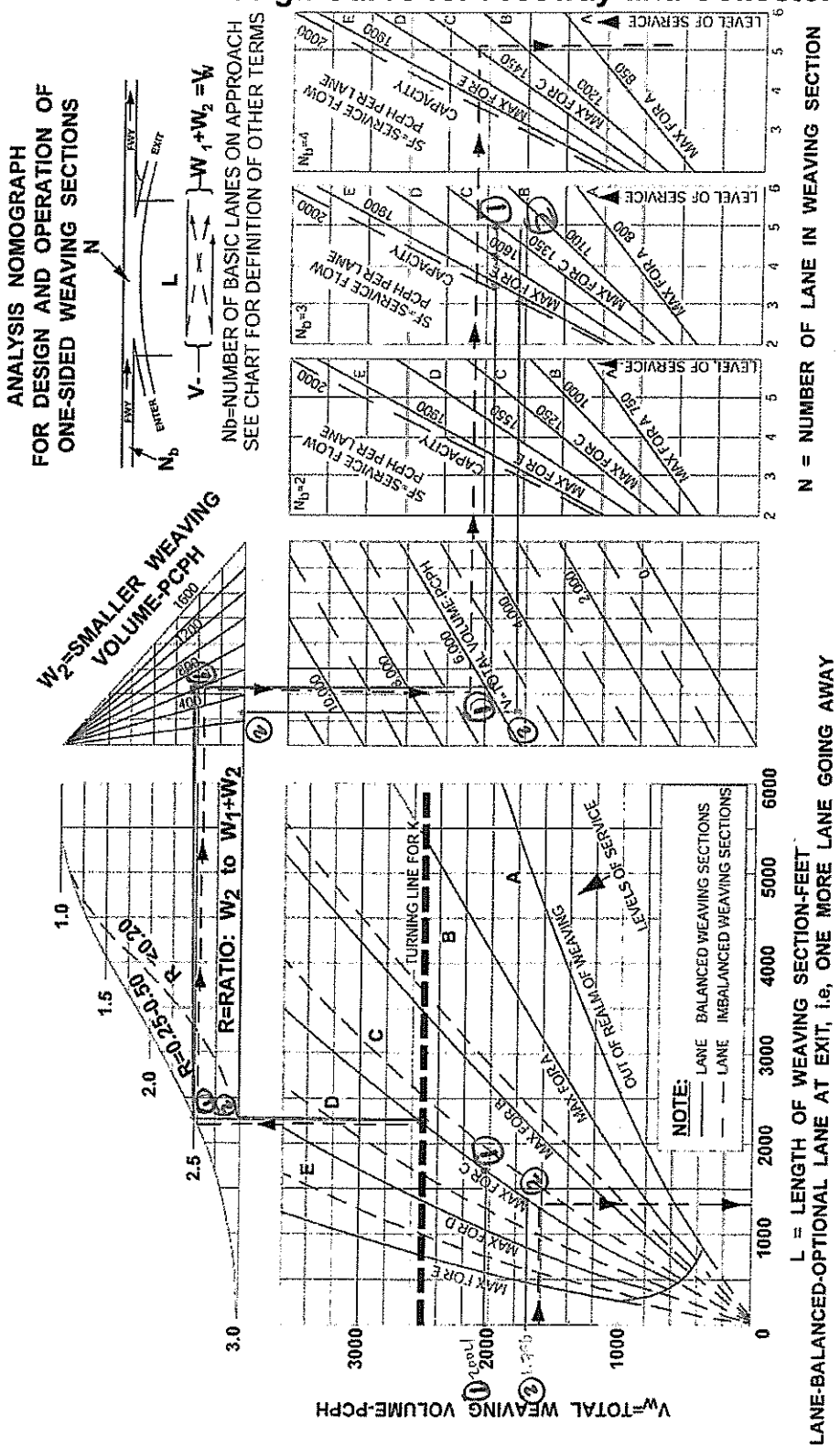
2025 + Project Am

(Horizon Veterans)

① NB LOS D with 3 lanes, LOS C with 4 lanes.

② SB LOS D with 3 lanes, LOS C with 4 lanes.

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

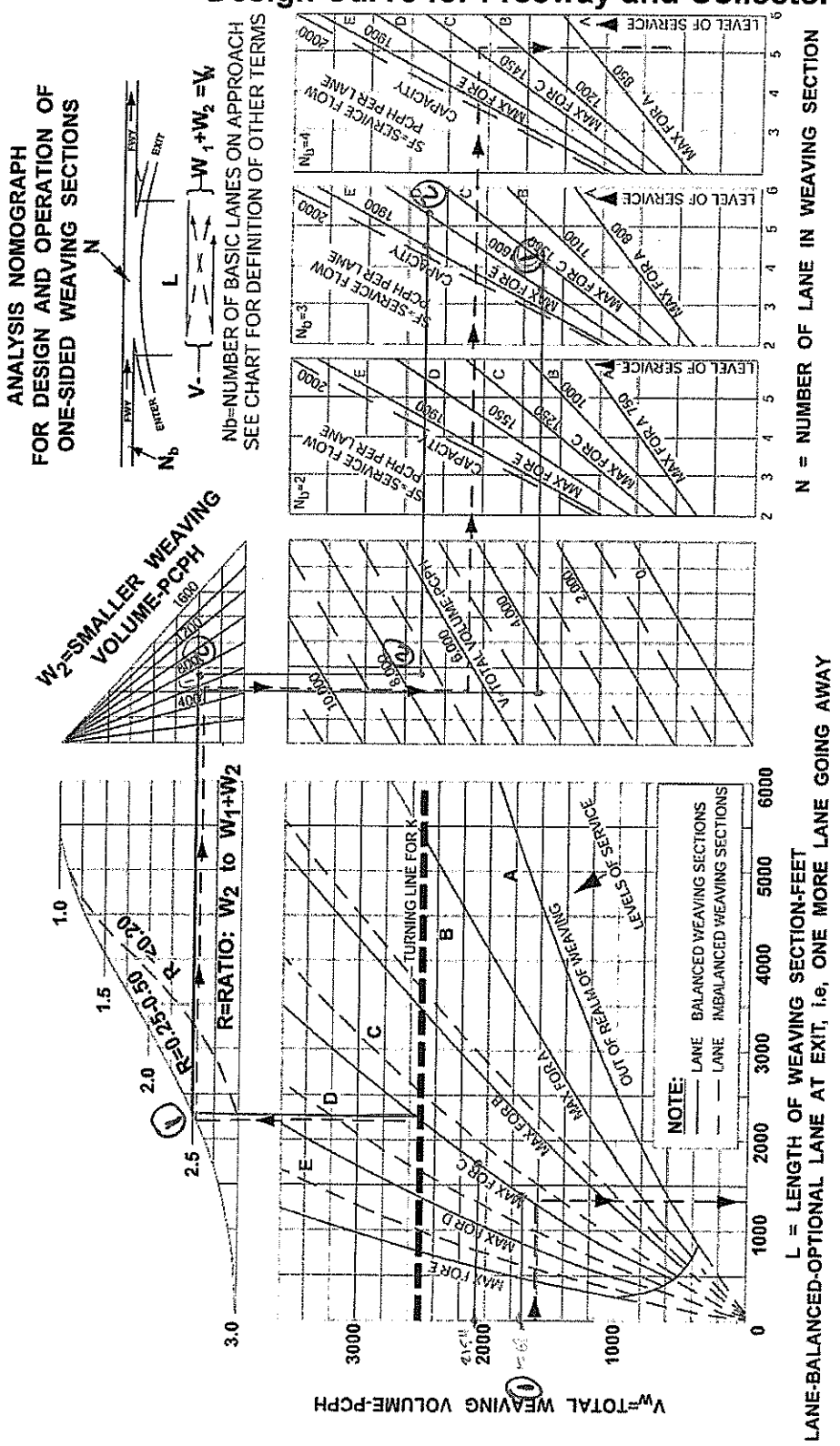
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (for V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, from which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section). from which a downward extension yields a N of 5.2; this would be rounded to N = 5 lanes.

2025 + Proj Pm (Hwdow) Vol (Hwdow)

① NB LOS: F w/ 3 lanes. LOS C with 5 lanes.

② SB LOS: E/F w/ 3 lanes LOS C with 5 lanes.

Figure 504.7A
Design Curve for Freeway and Collector Weaving



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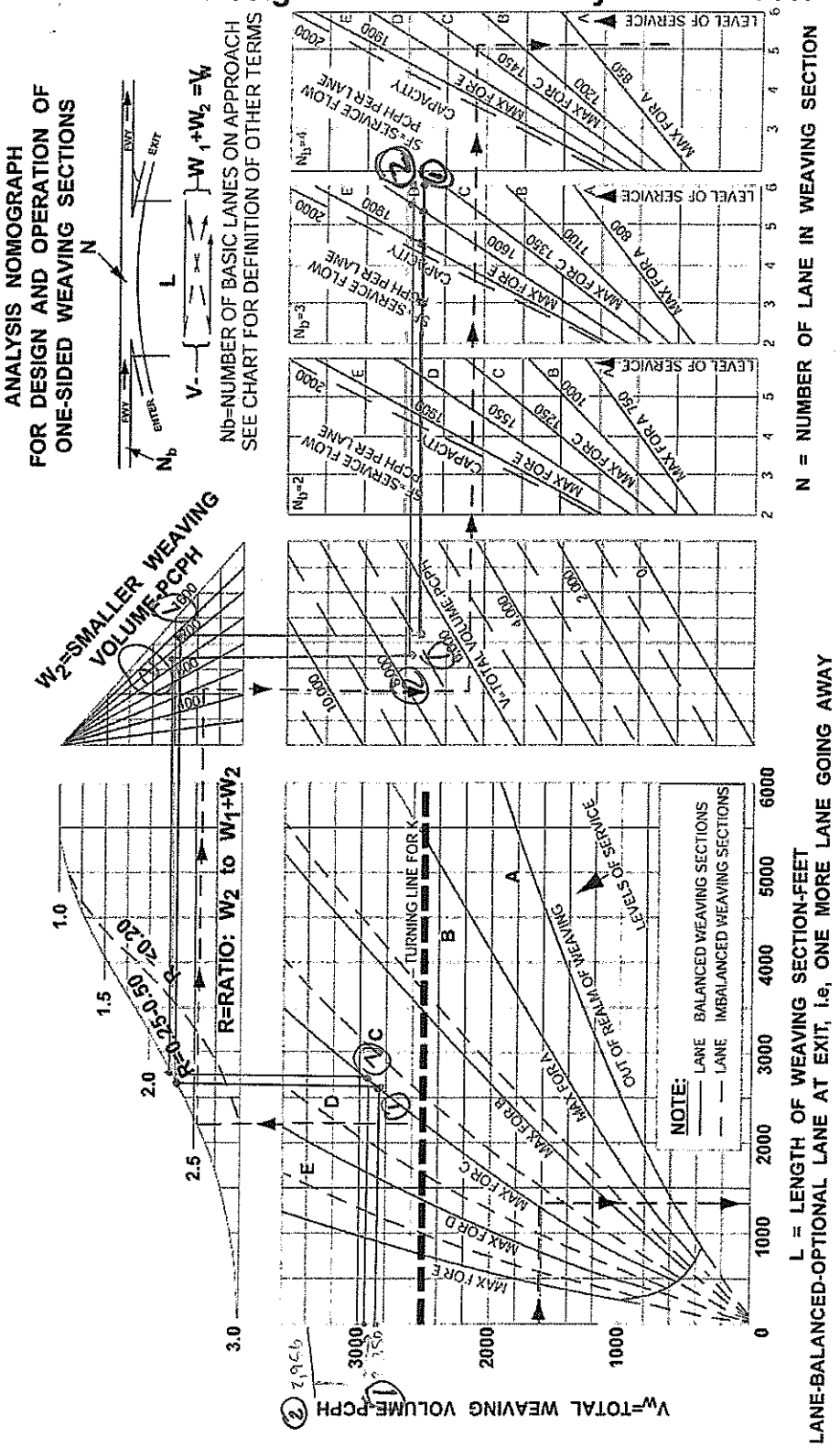
Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K." from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension meets the desired W_2 volume. Then a downward turn to total volume, V, for which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section). from which a downward extension yields a N of 5.2: this would be rounded to N = 5 lanes.

① WB LOS D/E w/3 lanes. LOS C with 4 lanes

② SB = LOS F w/2 lanes. LOS D with 3 lanes 2025 + Proj Adm (Veterans / Shandell Analysis)

Figure 504.7A
Design Curve for Freeway and Collector Weaving



NOTE: EXTRAPOLATION OF CHART BEYOND THE BOUNDARIES GIVEN IS NOT ADVISED.

Example: The nomograph is entered on the left (see dashed line and arrows) with weaving volume, W_1+W_2 (or V_W) followed by projection to the right, intersecting the desired weaving LOS; a vertical drop from this point provides weaving distance L = 400 m. Returning to first intersection point of V_W with LOS line, an upward projection along the LOS line is intersected with the horizontal, heavy dashed, "turning line for K" from here the solution line is extended vertically to intersect the K values curve, from which a horizontal extension means the desired W_2 volume. Then a downward turn to total volume, V, (on which the line is horizontally projected to the right, intersection (in this case) the desired LOS = C curve having an SF of 1450 (representing the overall or composite operation of the weaving section), from which a downward extension yields a N of 5.2; this would be rounded to N = 5 lanes.

2025 + Proj Data (Relevant / Signif)

① NB LOS E with 3 lanes, LOS D with 5 lanes

② SB LOS F with 3 lanes, LOS D with 6 lanes.

APPENDIX G

RAILROAD SURVEY DATA

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 07-8248

Location: *W. Herndon & Golden Gate*

City: *FRESNO*

Time Interval From: *7:00 AM* **To** *7:00 PM*

Type of Land use Around Location: *empty lots, residential, gast stations and fast food w/of tracks*

Number of Tracks at Location: *1*

TRAIN INFO

TIME OF BELL start & finish	GATE DOWN TIME start &	TIME OF TRAIN start and finish	Number of Box Cars	DIRECTION	# OF CARS in queue Estimate blind side	DOES TRAIN STOP	DOES TRAIN BACK-UP	
7:12:50 7:14:41	7:12:00 7:14:18	7:13:00 7:14:10	50	North	20 40 B Side	No	No	0:02:18
8:37:40 8:37:50	8:37:00 8:38:20	8:38:00 8:38:15	20	North	16 4 B Side	No	No	0:01:20
9:14:21 9:16:11	9:14:23 9:16:16	9:14:29 9:16:09	60	North	18 20 B Side	No	No	0:01:53
10:35:18 10:38:10	10:35:20 10:38:10	10:35:25 10:38:00	80	South	25 9 B Side	No	No	0:02:50
11:05:11 11:09:41	11:05:11 11:09:41	11:07:04 11:09:49	100	North	16 8 B Side	Yes	No	0:04:30
12:29:20 12:29:30	12:29:22 12:29:52	12:29:40 12:30:00	20	South	7 8 B Side	No	No	0:00:30
1:25:10 1:25:28	1:25:12 1:25:29	1:25:15 1:25:30	10	South	17 7 B Side	No	No	0:00:17
1:55:39 1:59:57	1:55:50 1:59:58	1:56:23 1:59:49	50	North	30 5 B Side	No	No	0:04:08
4:36:45 4:39:00	4:36:48 4:39:24	4:36:49 4:39:37	80	North	25 40 B Side	No	No	0:02:36
6:32:40 6:34:00	6:32:40 6:34:00	6:33:20 6:34:14	50	North	18 20 B Side	No	No	0:01:20

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 07-8248

Location: Golden State and Carnegie Way

City: FRESNO

Time Interval From: 7:00 AM **To** 7:00 PM

Type of Land use Around Location: empty lots

Number of Tracks at Location: 1

TRAIN INFO

TIME OF BELL start & finish	GATE DOWN TIME start & finish	TIME OF TRAIN start and finish	RADAR SPEED Carnegie Ave ONLY	DIRECTION	# OF CARS in queue estimate blind side	DOES TRAIN STOP	DOES TRAIN BACK-UP	
8:37:10 8:37:20	8:37:13 8:37:25	8:37:20 8:37:30	27	North	1 3 B Side	No	No	0:00:12
9:12:30 9:12:40	9:12:25 9:12:40	9:12:30 9:12:40	25	North	6 4 B Side	No	No	0:00:15
10:37:00 10:39:30	10:37:00 10:39:55	10:37:05 10:39:50	39	South	4 2 B Side	No	No	0:02:55
10:47:00 10:47:40	10:47:00 10:47:35	10:47:05 10:47:40	26	North	3 1 B Side	No	No	0:00:35
12:35:20 12:36:00	12:35:35 12:36:05	12:35:40 12:35:55	10	South	5 2 B Side	No	No	0:00:30
1:26:05 1:27:00	1:26:05 1:26:55	1:26:10 1:26:58	37	South	2 4 B Side	No	No	0:00:50
1:45:00 1:50:00	1:45:05 1:49:55	1:45:10 1:49:50	20	North	8 5 B Side	No	No	0:04:50
4:41:00 4:43:00	4:41:10 4:43:00	4:41:20 4:42:50	28	South	9 7 B Side	No	No	0:01:50
6:30:00 6:33:00	6:30:05 6:33:00	6:30:00 6:33:00	26	North	8 6 B Side	No	No	0:02:55

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 07-8248

Location: Shaw & Golden state

City: FRESNO

Time Interval From: 7:00 AM **To** 7:00 PM

Type of Land use Around Location: retail, gas station, open fields

Number of Tracks at Location: 1

TRAIN INFO

TIME OF BELL start & finish	GATE DOWN TIME start & finish	TIME OF TRAIN start and finish		DIRECTION	# OF CARS in queue estimate blind side	DOES TRAIN STOP	DOES TRAIN BACK-UP	
8:33:10 8:33:20	8:33:20 8:33:45	8:33:30 8:33:40		North	25 40 B Side	No	No	0:00:25
9:07:15 9:07:20	9:07:20 9:08:25	9:08:25 9:08:55		North	59 35 B Side	No	No	0:01:05
9:48:20 9:48:30	9:49:30 9:51:20	9:50:15 9:51:15		North	69 50 B Side	No	No	0:01:50
10:40:30 10:40:40	10:40:40 10:40:50	10:41:05 10:42:05		South	143 80 B Side	No	No	0:00:10
11:33:05 11:33:15	11:33:15 11:34:40	11:33:50 11:34:30		South	30 15 B Side	No	No	0:01:25
12:40:20 12:40:30	12:40:30 12:41:30	12:40:50 12:41:20		South	70 50 B Side	No	No	0:01:00
1:28:50 1:29:00	1:30:00 1:30:25	1:29:30 1:30:15		South	91 70 B Side	No	No	0:00:25
1:39:55 1:40:05	1:40:05 1:45:35	1:40:15 1:45:25		North	203 150 B Side	No	No	0:05:30
4:42:20 4:42:30	4:42:30 4:46:25	4:42:40 4:46:15		North	163 130 B Side	No	No	0:03:55
6:27:10 6:27:20	6:27:20 6:28:35	6:27:30 6:28:25		North	106 80 B Side	No	No	0:01:15

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 07-8248

Location: *W. Herndon & Golden Gate*

City: *FRESNO*

Time Interval From: *7:00 AM* **To** *7:00 PM*

Type of Land use Around Location: *empty lots, residential, gast stations and fast food w/of tracks*

Number of Tracks at Location: *1*

TRAIN INFO

TIME OF BELL start & finish	GATE DOWN TIME start &	TIME OF TRAIN start and finish	Number of Box Cars	DIRECTION	# OF CARS in queue Estimate blind side	DOES TRAIN STOP	DOES TRAIN BACK-UP	
7:19:00 7:20:30	7:19:10 7:20:31	7:19:20 7:20:30	40	North	12 33 B Side	No	No	0:01:21
7:47:00 7:48:40	7:47:10 7:48:41	7:47:20 7:48:25	25	South	15 40 B Side	No	No	0:01:31
7:58:50 8:01:44	7:59:00 8:01:44	7:59:15 8:00:00	30	North	20 35 B Side	No	No	0:02:44
9:54:55 9:55:20	9:55:07 9:58:10	9:55:12 9:58:07	50	South	20 45 B Side	No	No	0:03:03
10:22:55 10:25:30	10:23:00 10:25:10	10:23:15 10:25:00	63	North	15 6 B Side	No	No	0:02:10
10:46:20 10:48:10	10:46:22 10:48:12	10:46:44 10:48:00	63	North	20 26 B Side	No	No	0:01:50
11:23:38 11:25:47	11:23:43 11:25:48	11:24:30 11:25:30	1	South	10 13 B Side	No	No	0:02:05
12:29:10 12:32:30	12:29:10 12:32:43	12:29:32 12:32:30	100	South	27 40 B Side	No	No	0:03:33
1:04:40 1:05:20	1:04:40 1:05:20	1:04:55 1:05:15	1	South	7 9 B Side	No	No	0:00:40
1:33:40 1:35:10	1:33:42 1:35:12	1:33:50 1:35:00	56	North	20 22 B Side	No	No	0:01:30
1:48:00 1:52:10	1:48:05 1:52:10	1:48:15 1:52:00	136	North	22 35 B Side	No	No	0:04:05
6:45:10 6:48:02	6:46:20 6:48:20	6:46:20 6:48:10	65	South	26 40 B Side	No	No	0:02:00

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 07-8248

Location: Golden State and Carnegie Way

City: FRESNO

Time Interval From: 7:00 AM **To** 7:00 PM

Type of Land use Around Location: empty lots

Number of Tracks at Location: 1

TRAIN INFO

TIME OF BELL start & finish	GATE DOWN TIME start & finish	TIME OF TRAIN start and finish	RADAR SPEED Carnegie Ave ONLY	DIRECTION	# OF CARS in queue estimate blind side	DOES TRAIN STOP	DOES TRAIN BACK-UP	
7:16:00 7:17:00	7:16:00 7:17:00	7:16:00 7:17:00	17	South	8 6 B Side	No	No	0:01:00
7:49:00 7:51:00	7:49:00 7:51:00	7:49:00 7:51:00	22	North	18 10 B Side	No	No	0:02:00
7:54:00 7:58:00	7:54:00 7:58:00	7:50:00 7:58:00	15	North	23 15 B Side	No	No	0:04:00
9:57:00 10:01:00	9:57:00 10:01:00	9:58:00 10:00:00	17	South	3 1 B Side	No	No	0:04:00
10:19:00 10:22:00	10:19:00 10:22:00	10:20:00 10:21:00	16	North	2 2 B Side	No	No	0:03:00
10:43:00 10:45:00	10:43:00 10:45:00	10:43:00 10:45:00	21	North	8 6 B Side	No	No	0:02:00
12:33:00 12:36:00	12:33:00 12:36:00	12:33:00 12:36:00	19	South	6 10 B Side	No	No	0:03:00
1:08:00 1:08:00	1:08:00 1:08:00	1:08:00 1:08:00	3	South	6 4 B Side	No	No	0:00:00
1:17:00 1:20:00	1:17:00 1:20:00	1:18:00 1:20:00	11	North	26 20 B Side	No	No	0:03:00
1:47:00 1:50:00	1:47:00 1:50:00	1:47:00 1:50:00	18	North	5 8 B Side	No	No	0:03:00
6:51:00 6:54:00	6:51:00 6:54:00	6:51:00 6:54:00	14	South	7 10 B Side	No	No	0:03:00

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 07-8248

Location: *Shaw & Golden state*

City: *FRESNO*

Time Interval From: *7:00 AM* **To** 7:00 PM

Type of Land use Around Location: *retail, gas station, open fields*

Number of Tracks at Location: *1*

TRAIN INFO

TIME OF BELL start & finish	GATE DOWN TIME start & finish	TIME OF TRAIN start and finish		DIRECTION	# OF CARS in queue estimate blind side	DOES TRAIN STOP	DOES TRAIN BACK-UP	
7:12:15 7:12:25	7:12:25 7:15:25	7:12:35 7:15:20		North	24 30 B Side	No	No	0:03:00
7:38:05 7:38:28	7:38:25 7:43:15	7:38:45 7:43:05		North	73 100 B Side	No	No	0:04:50
7:51:00 7:51:10	7:51:10 7:53:30	7:51:20 7:53:40		South	75 70 B Side	No	No	0:02:20
10:01:30 10:04:30	10:01:40 10:04:30	10:01:50 10:04:15		South	100 40 B Side	No	No	0:02:50
10:16:15 10:19:20	10:16:30 10:19:20	10:19:20 10:19:40		South	50 35 B Side	No	No	0:02:50
10:40:15 10:42:55	10:40:25 10:42:55	10:40:45 10:42:45		South	114 100 B Side	No	No	0:02:30
11:45:00 11:46:00	11:45:15 11:46:00	11:45:40 11:46:00		South	40 40 B Side	No	No	0:00:45
11:52:05 11:56:45	11:52:15 11:56:45	11:52:20 11:56:30		North	60 50 B Side	Yes	No	0:04:30
12:32:40 12:39:15	12:32:50 12:39:15	12:33:45 12:39:15		North	140 100 B Side	No	No	0:06:25
1:18:40 1:26:30	1:19:00 1:26:30	1:19:40 1:26:50		South	220 140 B Side	Yes	Yes	0:07:30
1:40:05 1:45:40	1:40:50 1:45:40	1:40:10 1:45:30		North	100 70 B Side	No	No	0:04:50
2:00:40 2:01:10	2:00:50 2:01:10	2:01:10 2:01:10		South	30 20 B Side	No	No	0:00:20
6:55:15 6:57:20	6:55:25 6:57:50	6:55:35 6:57:40		South	60 40 B Side	Yes	No	0:02:25

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 07-8248

Location: *W. Herndon & Golden Gate*

City: *FRESNO*

Time Interval From: *7:00 AM* **To** *7:00 PM*

Type of Land use Around Location: *empty lots, residential, gast stations and fast food w/of tracks*

Number of Tracks at Location: *1*

TRAIN INFO

TIME OF BELL start & finish	GATE DOWN TIME start &	TIME OF TRAIN start and finish	Number of Box Cars	DIRECTION	# OF CARS in queue Estimate blind side	DOES TRAIN STOP	DOES TRAIN BACK-UP	
7:40:10 7:44:40	7:40:10 7:40:40	7:40:11 7:44:30	132	South	28 20 B Side	No	No	0:00:30
8:17:05 8:20:30	8:17:05 8:20:30	8:17:20 8:20:30	98	North	20 10 B Side	No	No	0:03:25
8:48:10 8:49:30	8:48:10 8:49:30	8:48:20 8:49:20	63	North	20 10 B Side	No	No	0:01:20
9:23:15 9:25:40	9:23:05 9:25:40	9:23:15 9:25:30	105	North	20 15 B Side	No	No	0:02:35
11:29:20 11:30:55	11:29:20 11:30:55	11:29:40 11:30:45	58	South	19 20 B Side	No	No	0:01:35
12:48:45 12:48:30	12:48:30 12:48:55	12:49:05 12:49:30	24	South	10 8 B Side	No	No	0:00:25
1:55:50 1:58:25	1:55:50 1:58:25	1:55:51 1:58:15	77	North	22 20 B Side	No	No	0:02:35
2:27:55 2:30:05	2:27:55 2:30:05	2:27:59 2:30:00	75	South	41 20 B Side	No	No	0:02:10
3:20:30 3:21:10	3:20:30 3:21:10	3:20:35 3:21:05	4	North	15 16 B Side	No	No	0:00:40
4:20:50 4:21:35	4:20:50 4:21:35	4:21:20 4:21:30	4	South	25 12 B Side	No	No	0:00:45
6:20:50 6:21:35	6:20:50 6:21:35	6:21:10 6:21:40	30	South	16 20 B Side	No	No	0:00:45

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 07-8248

Location: Golden State and Carnegie Way

City: FRESNO

Time Interval From: 7:00 AM **To** 7:00 PM

Type of Land use Around Location: empty lots

Number of Tracks at Location: 1

TRAIN INFO

TIME OF BELL start & finish	GATE DOWN TIME start & finish	TIME OF TRAIN start and finish	RADAR SPEED Carnegie Ave ONLY	DIRECTION	# OF CARS in queue estimate blind side	DOES TRAIN STOP	DOES TRAIN BACK-UP	
7:44:00 7:48:10	7:44:12 7:48:15	7:44:25 7:48:05	23	South	11 10 B Side	No	No	0:04:03
8:14:33 8:17:45	8:15:00 8:17:48	8:15:20 8:17:40	22	North	7 4 B Side	No	No	0:02:48
8:45:45 8:47:12	8:45:30 8:47:10	8:45:50 8:47:00	23	North	4 2 B Side	No	No	0:01:40
9:20:35 9:22:44	9:20:35 9:22:44	9:20:52 9:22:36	3	North	3 3 B Side	No	No	0:02:09
11:32:10 11:33:20	11:32:12 11:33:25	11:33:10 11:33:25	33	South	5 3 B Side	No	No	0:01:13
12:51:30 12:52:30	12:51:31 12:52:30	12:51:50 12:52:27	20	South	4 4 B Side	No	No	0:00:59
1:52:16 1:55:05	1:52:20 1:55:05	1:52:30 1:54:55	20	North	9 10 B Side	No	No	0:02:45
2:30:52 2:33:58	2:30:53 2:33:58	2:31:11 2:33:50	22	South	6 5 B Side	No	No	0:03:05
3:16:30 3:17:28	3:16:35 3:17:29	3:17:13 3:17:20	13	North	4 3 B Side	No	No	0:00:54
4:26:10 4:27:00	4:26:10 4:27:00	4:26:35 4:26:58	10	South	8 4 B Side	No	No	0:00:50
6:22:25 6:24:36	6:22:25 6:24:30	6:22:50 6:24:20	17	South	8 6 B Side	No	No	0:02:05

NATIONAL DATA & SURVEYING SERVICES

Train Count

Project No. 07-8248

Location: Shaw & Golden state

City: FRESNO

Time Interval From: 7:00 AM **To** 7:00 PM

Type of Land use Around Location: retail, gas station, open fields

Number of Tracks at Location: 1

TRAIN INFO

TIME OF BELL start & finish	GATE DOWN TIME start & finish	TIME OF TRAIN start and finish		DIRECTION	# OF CARS in queue estimate blind side	DOES TRAIN STOP	DOES TRAIN BACK-UP	
7:47:00 7:52:00	7:47:00 7:52:00	7:47:00 7:52:00		South	26 20 B Side	No	No	0:05:00
8:13:00 8:15:00	8:13:00 8:15:00	8:13:00 8:15:00		North	6 5 B Side	No	No	0:02:00
9:19:00 9:21:00	9:19:00 9:21:00	9:19:00 9:21:00		North	16 10 B Side	No	No	0:02:00
11:40:00 11:42:00	11:40:00 11:42:00	11:40:42 11:42:00		South	13 20 B Side	No	No	0:02:00
1:49:00 1:52:00	1:49:00 1:52:00	1:50:00 1:52:00		North	35 26 B Side	No	No	0:03:00
2:40:00 2:45:00	2:40:00 2:45:00	2:40:00 2:45:00		South	20 16 B Side	No	No	0:05:00
3:12:00 3:13:00	3:12:00 3:13:00	3:13:00 3:13:00		North	13 14 B Side	No	No	0:01:00
4:32:00 4:34:00	4:32:00 4:34:00	4:33:00 4:34:00		South	20 9 B Side	No	No	0:02:00
6:26:00 6:28:00	6:26:00 6:28:00	6:27:00 6:28:00		South	40 25 B Side	No	No	0:02:00

APPENDIX H

HCM QUEUING WORKSHEETS

EXISTING TRAFFIC CONDITION

4: Golden State Blvd & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	236	56	145	54	161	48	61	803	47	662	506
v/c Ratio	0.91	0.13	0.31	0.38	0.61	0.18	0.40	0.48	0.32	0.80	0.52
Control Delay	77.5	29.1	7.0	46.7	45.6	13.0	46.8	18.1	44.7	31.6	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.5	29.1	7.0	46.7	45.6	13.0	46.8	18.1	44.7	31.6	3.8
Queue Length 50th (ft)	135	26	0	29	87	2	33	169	25	330	0
Queue Length 95th (ft)	#264	54	42	66	145	31	59	183	57	#517	47
Internal Link Dist (ft)		2304			7356			514		480	
Turn Bay Length (ft)	260		150	185		50	100		80		
Base Capacity (vph)	259	460	499	153	332	318	161	1663	158	832	981
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.12	0.29	0.35	0.48	0.15	0.38	0.48	0.30	0.80	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	693	334	57	995	371	200
v/c Ratio	0.65	0.47	0.25	0.66	0.52	0.26
Control Delay	19.9	4.8	24.2	13.9	17.2	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.9	4.8	24.2	13.9	17.2	3.6
Queue Length 50th (ft)	102	0	17	104	100	0
Queue Length 95th (ft)	116	21	44	152	123	15
Internal Link Dist (ft)	1370			1308	1710	
Turn Bay Length (ft)		165	165		65	
Base Capacity (vph)	1074	710	250	1782	713	755
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.47	0.23	0.56	0.52	0.26

Intersection Summary

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	713	9	179	979	6	54	187	7	324
v/c Ratio	0.41	0.74	0.02	0.48	0.90	0.01	0.16	0.25	0.02	0.52
Control Delay	36.1	27.7	10.4	33.8	37.5	12.2	29.7	6.5	29.2	20.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	27.7	10.4	33.8	37.5	12.2	29.7	6.5	29.2	20.5
Queue Length 50th (ft)	31	141	0	38	215	0	11	10	1	94
Queue Length 95th (ft)	60	167	8	59	#278	7	20	32	6	135
Internal Link Dist (ft)		1312			2776			1152		369
Turn Bay Length (ft)	350		250	250		125	140		100	
Base Capacity (vph)	196	1031	468	381	1082	488	381	738	381	618
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.69	0.02	0.47	0.90	0.01	0.14	0.25	0.02	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	7	760	93	112	1042	87	146	387	160	70	33
v/c Ratio	0.03	0.71	0.17	0.63	0.74	0.13	0.40	0.60	0.43	0.13	0.07
Control Delay	31.8	26.8	5.1	49.8	22.6	6.8	34.7	13.1	35.1	23.4	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.8	26.8	5.1	49.8	22.6	6.8	34.7	13.1	35.1	23.4	9.4
Queue Length 50th (ft)	1	165	0	51	187	7	32	45	36	25	0
Queue Length 95th (ft)	7	192	25	84	236	27	48	78	52	46	15
Internal Link Dist (ft)		620			2722			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	356	1192	594	183	1446	680	373	643	377	543	472
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.64	0.16	0.61	0.72	0.13	0.39	0.60	0.42	0.13	0.07

Intersection Summary

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	221	893	160	101	764	135	127	187	146	528	443	300
v/c Ratio	0.55	0.65	0.29	0.27	0.64	0.29	0.33	0.21	0.29	1.11	0.41	0.43
Control Delay	32.4	23.8	5.5	28.0	24.9	6.0	28.7	19.9	5.8	105.8	20.8	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	23.8	5.5	28.0	24.9	6.0	28.7	19.9	5.8	105.8	20.8	5.1
Queue Length 50th (ft)	43	117	0	19	97	0	24	30	0	~138	78	0
Queue Length 95th (ft)	65	139	30	34	116	27	46	54	38	#147	85	15
Internal Link Dist (ft)		220			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	410	1375	544	410	1254	491	410	898	499	477	1090	695
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.65	0.29	0.25	0.61	0.27	0.31	0.21	0.29	1.11	0.41	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

11: Herndon Ave & Blythe Ave

Lane Group	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBR
Lane Group Flow (vph)	1438	1	2	964	60	4	75	1
v/c Ratio	0.65	0.00	0.01	0.41	0.08	0.00	0.24	0.00
Control Delay	20.4	13.0	34.0	14.5	3.9	21.0	35.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.4	13.0	34.0	14.5	3.9	21.0	35.3	0.0
Queue Length 50th (ft)	178	0	0	105	0	1	18	0
Queue Length 95th (ft)	#315	3	3	137	17	1	28	0
Internal Link Dist (ft)	2270			830		994		
Turn Bay Length (ft)		140	220		140		120	120
Base Capacity (vph)	2209	689	334	2337	759	1215	346	802
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.00	0.01	0.41	0.08	0.00	0.22	0.00

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

12: Herndon Ave & Brawley Ave

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	67	1434	269	816	77	74	274	73	98	44
v/c Ratio	0.41	0.95	0.89	0.44	0.24	0.16	0.47	0.22	0.21	0.10
Control Delay	45.3	39.2	68.7	13.8	29.7	27.9	7.9	29.4	28.5	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.3	39.2	68.7	13.8	29.7	27.9	7.9	29.4	28.5	9.2
Queue Length 50th (ft)	36	394	151	144	35	33	9	33	45	0
Queue Length 95th (ft)	73	#521	#286	192	74	69	71	63	77	21
Internal Link Dist (ft)		1750		4430		2164			665	
Turn Bay Length (ft)	290		310		105		75	80		80
Base Capacity (vph)	191	1517	306	1858	324	466	586	331	466	429
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.95	0.88	0.44	0.24	0.16	0.47	0.22	0.21	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

13: Herndon Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	112	1755	55	229	916	249	116	135	268	224	158	139
v/c Ratio	0.44	1.18	0.08	0.82	0.61	0.31	0.44	0.14	0.50	0.81	0.16	0.27
Control Delay	58.2	119.6	17.6	92.6	13.8	1.2	58.2	34.1	18.9	76.0	34.0	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.2	119.6	17.6	92.6	13.8	1.2	58.2	34.1	18.9	76.0	34.0	7.0
Queue Length 50th (ft)	43	~856	20	98	88	0	44	42	71	89	49	0
Queue Length 95th (ft)	72	#977	46	#160	105	9	73	67	149	#150	77	47
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		190	245		125	160		160
Base Capacity (vph)	278	1490	672	278	1513	809	286	944	535	278	967	521
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	1.18	0.08	0.82	0.61	0.31	0.41	0.14	0.50	0.81	0.16	0.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

14: Herndon Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	63	2266	153	340	1529	134	85	78	298	291	119	55
v/c Ratio	0.30	1.00	0.20	1.02	0.60	0.16	0.40	0.15	0.77	1.04	0.09	0.12
Control Delay	52.2	53.5	18.7	107.2	22.4	6.5	59.6	45.3	33.0	113.6	35.0	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.2	53.5	18.7	107.2	22.4	6.5	59.6	45.3	33.0	113.6	35.0	10.0
Queue Length 50th (ft)	26	~521	42	~143	309	16	32	27	85	~243	26	0
Queue Length 95th (ft)	m28	m469	m44	#226	342	47	59	51	#209	#327	37	24
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	222	2264	755	334	2533	834	222	516	387	280	1331	455
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	1.00	0.20	1.02	0.60	0.16	0.38	0.15	0.77	1.04	0.09	0.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

15: Herndon Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	834	1701	100	247	963	378	178	911	265	174	720	733
v/c Ratio	0.98	0.92	0.16	0.83	0.95	0.83	0.59	0.66	0.46	0.58	0.75	0.95
Control Delay	60.7	37.1	6.1	65.0	54.6	35.5	47.9	31.7	10.2	47.5	35.5	36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	37.1	6.1	65.0	54.6	35.5	47.9	31.7	10.2	47.5	35.5	36.0
Queue Length 50th (ft)	242	333	4	72	199	113	51	167	27	50	196	171
Queue Length 95th (ft)	#366	#436	36	#134	#279	#260	68	167	53	81	258	#412
Internal Link Dist (ft)		5199			5182			5331			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	852	1839	628	296	1015	455	305	1389	580	305	965	770
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.92	0.16	0.83	0.95	0.83	0.58	0.66	0.46	0.57	0.75	0.95

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	168	1793	143	117	1467	254	106	252	124	220	384	178
v/c Ratio	0.44	0.83	0.19	0.34	0.74	0.35	0.34	0.27	0.32	0.65	0.36	0.37
Control Delay	36.9	25.2	5.3	36.1	23.4	7.3	36.8	29.3	8.1	44.9	29.3	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.9	25.2	5.3	36.1	23.4	7.3	36.8	29.3	8.1	44.9	29.3	7.3
Queue Length 50th (ft)	40	274	7	28	210	23	25	42	0	55	65	0
Queue Length 95th (ft)	69	#390	39	49	256	64	47	58	39	#92	87	48
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	386	2156	738	357	2028	734	334	1113	442	336	1264	526
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.83	0.19	0.33	0.72	0.35	0.32	0.23	0.28	0.65	0.30	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

31: Bullard Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	169	869	85	101	562	44	394	75	89	475	60
v/c Ratio	0.63	0.95	0.10	0.65	0.41	0.30	0.55	0.20	0.58	0.59	0.15
Control Delay	45.7	45.7	4.4	60.1	19.7	44.7	35.4	14.1	55.1	34.5	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.7	45.7	4.4	60.1	19.7	44.7	35.4	14.1	55.1	34.5	14.4
Queue Length 50th (ft)	91	~531	2	56	113	24	108	8	50	134	7
Queue Length 95th (ft)	135	#632	21	#127	164	57	156	45	#101	181	38
Internal Link Dist (ft)		2869			1001		784			5331	
Turn Bay Length (ft)	150			140		120		55	90		70
Base Capacity (vph)	324	911	814	162	1402	158	717	366	162	811	398
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.95	0.10	0.62	0.40	0.28	0.55	0.20	0.55	0.59	0.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	658	356	553	721	43	258
v/c Ratio	1.02	0.48	1.03	0.29	0.13	0.50
Control Delay	70.8	6.7	80.4	5.1	30.8	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.8	6.7	80.4	5.1	30.8	8.0
Queue Length 50th (ft)	~384	20	~341	66	20	0
Queue Length 95th (ft)	#598	81	#529	87	48	58
Internal Link Dist (ft)	7536			500	619	
Turn Bay Length (ft)		200	110			
Base Capacity (vph)	646	743	535	2449	342	513
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.48	1.03	0.29	0.13	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Group Flow (vph)	113	836	995	206	125	232
v/c Ratio	0.50	0.85	0.75	0.29	0.24	0.37
Control Delay	32.7	20.3	19.9	3.5	18.1	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	20.3	19.9	3.5	18.1	4.8
Queue Length 50th (ft)	39	205	158	0	35	0
Queue Length 95th (ft)	76	303	224	34	69	39
Internal Link Dist (ft)		500	2498		599	
Turn Bay Length (ft)	120					
Base Capacity (vph)	235	1056	1384	742	531	635
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.79	0.72	0.28	0.24	0.37

Intersection Summary

36: Shaw Ave & Golden State Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	37	1007	47	317	909	85	125	361	16	18	281	482
v/c Ratio	0.27	0.94	0.09	0.92	0.56	0.11	0.82	0.35	0.03	0.15	0.37	0.81
Control Delay	44.3	47.8	8.8	69.7	19.6	4.2	79.1	27.1	13.1	42.1	31.3	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	47.8	8.8	69.7	19.6	4.2	79.1	27.1	13.1	42.1	31.3	22.5
Queue Length 50th (ft)	20	291	2	178	206	0	71	76	0	10	71	78
Queue Length 95th (ft)	39	263	16	#317	258	24	#160	132	16	28	100	170
Internal Link Dist (ft)		2498			1070			270			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	146	1070	507	344	1636	776	153	1042	477	142	764	598
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.94	0.09	0.92	0.56	0.11	0.82	0.35	0.03	0.13	0.37	0.81

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	106	1057	63	132	1068	72	174	189	67	189	591	137
v/c Ratio	0.25	0.80	0.13	0.31	0.80	0.15	0.41	0.18	0.13	0.44	0.57	0.24
Control Delay	27.7	27.4	6.7	28.3	27.5	6.5	29.3	19.4	6.5	29.7	22.9	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	27.4	6.7	28.3	27.5	6.5	29.3	19.4	6.5	29.7	22.9	5.7
Queue Length 50th (ft)	20	145	0	25	147	0	33	31	0	36	110	0
Queue Length 95th (ft)	39	#186	24	41	161	20	56	51	23	64	160	37
Internal Link Dist (ft)		3267			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	451	1403	495	452	1410	504	453	1042	513	453	1042	563
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.75	0.13	0.29	0.76	0.14	0.38	0.18	0.13	0.42	0.57	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

38: Shaw Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	194	1315	81	147	845	60	198	412	425	276	436	356
v/c Ratio	0.49	0.84	0.15	0.39	0.61	0.12	0.51	0.46	0.74	0.68	0.48	0.59
Control Delay	33.6	28.7	6.0	32.2	23.2	6.2	33.8	24.3	19.8	39.5	24.5	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.6	28.7	6.0	32.2	23.2	6.2	33.8	24.3	19.8	39.5	24.5	11.3
Queue Length 50th (ft)	41	196	1	30	111	0	42	80	68	60	85	31
Queue Length 95th (ft)	67	231	25	54	142	22	63	105	130	#103	124	101
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	403	1569	557	389	1487	518	403	887	577	405	900	602
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.84	0.15	0.38	0.57	0.12	0.49	0.46	0.74	0.68	0.48	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	130	1511	154	156	968	68	226	621	300	141	395	139
v/c Ratio	0.38	0.88	0.24	0.44	0.52	0.11	0.62	0.70	0.52	0.41	0.51	0.30
Control Delay	34.9	30.5	4.8	35.6	20.0	5.3	40.0	31.4	10.9	35.4	27.9	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	30.5	4.8	35.6	20.0	5.3	40.0	31.4	10.9	35.4	27.9	6.7
Queue Length 50th (ft)	29	238	2	35	131	0	53	144	27	31	84	0
Queue Length 95th (ft)	48	254	29	61	167	24	73	166	62	58	126	41
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	357	1719	647	366	1868	641	367	892	579	357	782	467
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.88	0.24	0.43	0.52	0.11	0.62	0.70	0.52	0.39	0.51	0.30

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1281	33	127	435	22	388	130	97
v/c Ratio	0.92	0.05	0.58	0.22	0.06	0.60	0.26	0.10
Control Delay	30.6	6.7	36.1	6.3	16.7	10.4	18.8	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	6.7	36.1	6.3	16.7	10.4	18.8	7.2
Queue Length 50th (ft)	228	2	44	34	6	31	37	3
Queue Length 95th (ft)	#365	16	#88	49	18	74	74	17
Internal Link Dist (ft)	14973			756				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1408	644	231	2028	368	649	506	948
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.05	0.55	0.21	0.06	0.60	0.26	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	354	1104	403	254	199	260	236	221	240
v/c Ratio	1.15	0.77	0.63	0.52	0.56	0.64	0.57	0.51	0.47
Control Delay	129.6	23.9	34.2	8.1	34.6	23.7	20.4	32.4	7.4
Queue Delay	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	129.6	26.4	34.2	8.1	34.6	23.7	20.4	32.4	7.4
Queue Length 50th (ft)	~212	235	95	0	93	68	52	50	0
Queue Length 95th (ft)	#310	253	139	56	166	158	130	63	20
Internal Link Dist (ft)		322	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	309	1483	709	519	356	404	411	435	515
Starvation Cap Reductn	0	251	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.15	0.90	0.57	0.49	0.56	0.64	0.57	0.51	0.47

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

4: Golden State Blvd & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	445	168	69	44	151	87	101	904	55	480	348
v/c Ratio	0.86	0.24	0.11	0.28	0.56	0.29	0.60	0.77	0.34	0.84	0.48
Control Delay	48.9	20.6	5.7	43.0	42.0	10.8	55.2	31.7	44.8	44.4	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	20.6	5.7	43.0	42.0	10.8	55.2	31.7	44.8	44.4	5.6
Queue Length 50th (ft)	235	66	0	23	77	1	54	244	29	249	0
Queue Length 95th (ft)	#417	111	25	57	137	40	88	259	65	#421	52
Internal Link Dist (ft)		2265			7356			514		480	
Turn Bay Length (ft)	260		150	185		50	100		80		
Base Capacity (vph)	548	766	690	174	363	376	178	1245	174	609	748
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.22	0.10	0.25	0.42	0.23	0.57	0.73	0.32	0.79	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1303	122	2	768	100	4
v/c Ratio	0.78	0.15	0.01	0.43	0.18	0.01
Control Delay	16.3	2.8	26.0	8.4	16.1	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	2.8	26.0	8.4	16.1	11.0
Queue Length 50th (ft)	145	0	1	68	22	0
Queue Length 95th (ft)	220	14	6	97	48	5
Internal Link Dist (ft)	1370			1308	1710	
Turn Bay Length (ft)		165	165		65	
Base Capacity (vph)	1756	845	221	2116	562	506
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.14	0.01	0.36	0.18	0.01

Intersection Summary

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	141	1049	28	88	814	11	19	82	7	69
v/c Ratio	0.59	0.79	0.05	0.22	0.64	0.02	0.06	0.16	0.02	0.13
Control Delay	39.6	22.7	6.4	28.5	19.3	8.6	31.1	8.7	31.0	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	22.7	6.4	28.5	19.3	8.6	31.1	8.7	31.0	9.1
Queue Length 50th (ft)	51	168	0	15	124	0	3	4	1	3
Queue Length 95th (ft)	#112	256	13	35	199	9	10	22	6	25
Internal Link Dist (ft)		1312			2776			1152		369
Turn Bay Length (ft)	350		250	250		125	140		100	
Base Capacity (vph)	252	1451	665	433	1394	630	392	525	392	514
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.72	0.04	0.20	0.58	0.02	0.05	0.16	0.02	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	10	925	105	378	853	176	86	345	189	82	33
v/c Ratio	0.05	0.93	0.22	0.92	0.45	0.19	0.31	0.75	0.63	0.19	0.09
Control Delay	41.6	48.0	13.0	62.5	13.6	4.0	41.8	29.2	49.8	31.4	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	48.0	13.0	62.5	13.6	4.0	41.8	29.2	49.8	31.4	11.3
Queue Length 50th (ft)	2	268	18	209	133	8	24	96	54	39	0
Queue Length 95th (ft)	10	#343	51	#276	185	31	38	132	71	63	16
Internal Link Dist (ft)		620			2722			2531		525	
Turn Bay Length (ft)	225		100	250		100	140		200		160
Base Capacity (vph)	270	1000	491	421	1890	909	291	458	299	430	380
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.93	0.21	0.90	0.45	0.19	0.30	0.75	0.63	0.19	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	321	909	151	112	1002	255	152	292	64	222	315	196
v/c Ratio	0.78	0.63	0.27	0.30	0.80	0.44	0.39	0.32	0.15	0.53	0.31	0.33
Control Delay	42.9	23.2	5.5	28.4	28.9	5.8	29.9	20.9	6.8	31.8	20.1	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	23.2	5.5	28.4	28.9	5.8	29.9	20.9	6.8	31.8	20.1	5.2
Queue Length 50th (ft)	64	120	0	21	135	0	28	49	0	43	53	0
Queue Length 95th (ft)	#101	141	29	37	155	33	54	80	26	54	62	17
Internal Link Dist (ft)		220			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	412	1443	556	398	1257	582	399	903	440	424	1030	600
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.63	0.27	0.28	0.80	0.44	0.38	0.32	0.15	0.52	0.31	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

11: Herndon Ave & Bylthe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	1	1106	1	5	1330	72	8	16	90	1	13
v/c Ratio	0.00	0.53	0.00	0.01	0.64	0.11	0.02	0.02	0.20	0.00	0.05
Control Delay	30.0	14.4	12.0	29.0	16.2	6.2	22.0	0.0	25.3	22.0	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	14.4	12.0	29.0	16.2	6.2	22.0	0.0	25.3	22.0	12.7
Queue Length 50th (ft)	0	69	0	0	88	1	1	0	11	0	0
Queue Length 95th (ft)	2	212	3	6	254	28	2	0	31	3	9
Internal Link Dist (ft)		2270			830			994		1111	
Turn Bay Length (ft)	220		140	220		140	235		120		120
Base Capacity (vph)	442	2195	684	442	2199	719	964	1401	498	527	457
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.50	0.00	0.01	0.60	0.10	0.01	0.01	0.18	0.00	0.03

Intersection Summary

12: Herndon Ave & Brawley Ave

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	48	1096	336	1226	134	79	252	31	68	42
v/c Ratio	0.35	0.96	0.98	0.72	0.85	0.17	0.43	0.23	0.18	0.12
Control Delay	46.7	49.4	81.0	21.8	84.0	30.0	6.8	43.0	31.5	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	49.4	81.0	21.8	84.0	30.0	6.8	43.0	31.5	10.7
Queue Length 50th (ft)	26	315	192	305	77	38	0	17	32	0
Queue Length 95th (ft)	58	#428	#355	386	#180	77	61	40	61	22
Internal Link Dist (ft)		1750		4430		2164			665	
Turn Bay Length (ft)	290		310		105		75	80		80
Base Capacity (vph)	146	1138	344	1702	157	474	591	150	373	350
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.96	0.98	0.72	0.85	0.17	0.43	0.21	0.18	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

13: Herndon Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	206	1172	83	337	1507	396	122	249	259	282	229	324
v/c Ratio	0.70	0.81	0.12	0.83	0.96	0.44	0.41	0.37	0.59	0.95	0.34	0.72
Control Delay	53.3	28.2	11.7	56.8	40.2	3.8	43.4	33.7	17.5	84.3	33.2	24.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.3	28.2	11.7	56.8	40.2	3.8	43.4	33.7	17.5	84.3	33.2	24.6
Queue Length 50th (ft)	59	298	18	97	421	7	34	65	41	84	60	69
Queue Length 95th (ft)	#103	378	45	#163	#577	55	60	98	112	#159	93	#182
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280			245		125	160		160
Base Capacity (vph)	296	1452	666	408	1566	904	305	668	442	296	678	449
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.81	0.12	0.83	0.96	0.44	0.40	0.37	0.59	0.95	0.34	0.72

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	100	1567	148	306	2293	320	134	145	465	251	177	186
v/c Ratio	0.42	0.77	0.21	0.79	1.02	0.41	0.56	0.22	1.10	1.04	0.14	0.36
Control Delay	54.7	31.2	5.7	62.8	53.4	11.8	58.8	38.6	102.7	116.2	32.0	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	31.2	5.7	62.8	53.4	11.8	58.8	38.6	102.7	116.2	32.0	10.9
Queue Length 50th (ft)	35	344	8	109	~631	72	47	45	~277	~192	35	20
Queue Length 95th (ft)	61	384	43	#161	#682	133	79	74	#472	#276	47	52
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	243	2031	708	394	2256	784	243	656	422	241	1299	515
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.77	0.21	0.78	1.02	0.41	0.55	0.22	1.10	1.04	0.14	0.36

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

15: Herndon Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	806	1196	53	279	1778	220	189	1023	219	313	775	958
v/c Ratio	1.26	0.67	0.09	0.69	1.23	0.43	0.83	0.75	0.37	0.80	0.69	1.32
Control Delay	170.2	34.8	8.9	59.6	148.6	21.6	83.2	44.3	6.4	67.4	39.7	176.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	170.2	34.8	8.9	59.6	148.6	21.6	83.2	44.3	6.4	67.4	39.7	176.5
Queue Length 50th (ft)	~404	287	3	107	~624	74	75	267	0	123	275	~777
Queue Length 95th (ft)	#528	342	31	151	#708	145	#95	250	24	#182	342	#1011
Internal Link Dist (ft)		5199			5182			5331			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	639	1786	587	445	1441	517	229	1368	586	401	1121	727
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.26	0.67	0.09	0.63	1.23	0.43	0.83	0.75	0.37	0.78	0.69	1.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	174	1493	371	188	1421	281	225	603	100	291	792	413
v/c Ratio	0.50	0.90	0.53	0.54	0.86	0.44	0.63	0.51	0.22	0.82	0.67	0.77
Control Delay	37.0	33.1	8.4	37.9	29.9	8.9	40.9	26.5	6.9	53.0	29.0	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	33.1	8.4	37.9	29.9	8.9	40.9	26.5	6.9	53.0	29.0	23.5
Queue Length 50th (ft)	40	239	29	43	223	28	52	89	0	69	122	80
Queue Length 95th (ft)	67	#295	89	69	254	73	84	117	32	#129	160	#215
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	356	1655	703	356	1657	645	356	1186	445	356	1187	537
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.90	0.53	0.53	0.86	0.44	0.63	0.51	0.22	0.82	0.67	0.77

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

31: Bullard Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	183	659	84	154	835	163	780	145	86	841	103
v/c Ratio	0.75	0.97	0.13	0.98	0.75	0.92	0.72	0.28	0.58	0.89	0.22
Control Delay	57.2	57.0	5.1	110.2	32.3	92.1	33.4	16.4	55.7	44.8	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.2	57.0	5.1	110.2	32.3	92.1	33.4	16.4	55.7	44.8	16.3
Queue Length 50th (ft)	101	361	0	89	221	94	215	35	48	241	24
Queue Length 95th (ft)	#156	#488	23	#211	292	#212	285	84	#92	#328	61
Internal Link Dist (ft)		2869			1001		784			5331	
Turn Bay Length (ft)	150			140		120		55	90		70
Base Capacity (vph)	255	683	634	157	1114	177	1080	527	154	945	458
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.96	0.13	0.98	0.75	0.92	0.72	0.28	0.56	0.89	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	629	203	449	1125	62	294
v/c Ratio	0.93	0.29	0.93	0.47	0.17	0.53
Control Delay	49.3	4.0	59.7	6.6	32.3	7.9
Queue Delay	2.0	0.0	0.0	0.0	0.0	0.2
Total Delay	51.2	4.0	59.7	6.6	32.3	8.1
Queue Length 50th (ft)	328	0	245	116	30	0
Queue Length 95th (ft)	#526	40	#414	147	64	61
Internal Link Dist (ft)	7536			500	619	
Turn Bay Length (ft)			110			
Base Capacity (vph)	704	722	497	2483	366	559
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	22	0	0	0	0	29
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.28	0.90	0.45	0.17	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

35: Shaw Ave & SR 99 NB Off Ramps

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	49	974	1246	325	272	246
v/c Ratio	0.26	0.94	0.78	0.37	0.52	0.39
Control Delay	29.6	30.3	20.0	3.0	24.4	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	30.4	20.0	3.0	24.4	5.1
Queue Length 50th (ft)	18	278	221	0	94	0
Queue Length 95th (ft)	43	#432	#315	40	158	43
Internal Link Dist (ft)		500	2498		563	
Turn Bay Length (ft)	120					
Base Capacity (vph)	212	1114	1591	887	522	638
Starvation Cap Reductn	0	2	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.88	0.78	0.37	0.52	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

36: Shaw Ave & Golden State Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	29	1337	67	369	1544	191	91	248	26	48	598	817
v/c Ratio	0.28	1.20	0.13	1.23	0.95	0.24	0.79	0.23	0.05	0.41	0.58	1.21
Control Delay	61.2	134.0	16.3	169.6	44.5	10.1	97.1	32.1	11.4	64.3	38.3	131.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.2	134.0	16.3	169.6	44.5	10.1	97.1	32.1	11.4	64.3	38.3	131.7
Queue Length 50th (ft)	22	~660	17	~352	~676	38	71	77	0	36	206	~598
Queue Length 95th (ft)	42	#515	35	#518	#768	83	#156	108	21	71	244	#739
Internal Link Dist (ft)		2498			1070			270			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	111	1117	523	301	1628	784	115	1084	503	126	1031	676
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	1.20	0.13	1.23	0.95	0.24	0.79	0.23	0.05	0.38	0.58	1.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	301	1528	146	236	1887	204	282	719	155	325	324	159
v/c Ratio	0.88	0.80	0.21	0.69	0.99	0.30	0.82	0.96	0.36	0.95	0.43	0.34
Control Delay	63.1	25.6	5.7	46.3	43.0	8.2	56.3	56.5	11.5	75.2	29.4	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.1	25.6	5.7	46.3	43.0	8.2	56.3	56.5	11.5	75.2	29.4	7.1
Queue Length 50th (ft)	77	242	8	59	333	25	72	187	15	85	74	0
Queue Length 95th (ft)	#139	284	40	82	322	52	#122	#270	57	#163	113	46
Internal Link Dist (ft)		3267			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	343	1914	686	343	1914	691	343	752	429	343	752	462
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.80	0.21	0.69	0.99	0.30	0.82	0.96	0.36	0.95	0.43	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	529	1388	233	315	1390	172	482	658	202	222	364	370
v/c Ratio	0.92	0.81	0.35	0.76	0.94	0.30	0.90	0.70	0.37	0.73	0.51	0.71
Control Delay	61.3	31.5	7.7	51.1	44.1	8.2	59.7	34.4	9.0	55.0	35.1	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.3	31.5	7.7	51.1	44.1	8.2	59.7	34.4	9.0	55.0	35.1	19.6
Queue Length 50th (ft)	154	260	21	90	280	13	140	177	15	64	97	58
Queue Length 95th (ft)	#226	293	63	#138	#352	56	#185	205	51	#110	138	152
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	572	1707	664	419	1482	572	534	944	544	305	708	519
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.81	0.35	0.75	0.94	0.30	0.90	0.70	0.37	0.73	0.51	0.71

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	225	1404	135	269	1406	117	256	381	152	129	466	149
v/c Ratio	0.58	0.95	0.24	0.69	0.94	0.21	0.65	0.40	0.28	0.35	0.56	0.30
Control Delay	36.0	39.2	5.1	40.1	38.8	6.9	38.5	23.2	5.7	31.9	26.2	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.0	39.2	5.1	40.1	38.8	6.9	38.5	23.2	5.7	31.9	26.2	6.1
Queue Length 50th (ft)	48	214	0	58	215	5	55	73	0	26	92	0
Queue Length 95th (ft)	72	#237	27	#99	#297	37	76	93	26	51	137	41
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	392	1482	569	392	1488	547	392	957	551	380	835	497
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.95	0.24	0.69	0.94	0.21	0.65	0.40	0.28	0.34	0.56	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	914	63	371	1101	56	495	136	150
v/c Ratio	0.90	0.13	0.89	0.54	0.17	0.63	0.28	0.16
Control Delay	36.8	8.0	50.4	8.9	19.5	6.3	20.4	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	8.0	50.4	8.9	19.5	6.3	20.4	10.2
Queue Length 50th (ft)	182	3	141	118	17	0	42	11
Queue Length 95th (ft)	#291	28	#263	152	37	37	83	30
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1010	488	423	2063	331	785	478	939
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.13	0.88	0.53	0.17	0.63	0.28	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	243	1165	815	634	409	468	419	234	450
v/c Ratio	1.09	0.81	0.95	1.02	0.85	0.99	0.87	0.85	0.96
Control Delay	128.6	30.8	58.1	62.8	51.2	69.2	48.4	68.7	50.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	128.6	30.8	58.1	62.8	51.2	69.2	48.4	68.7	50.6
Queue Length 50th (ft)	~175	335	270	~271	256	285	227	75	129
Queue Length 95th (ft)	#270	344	#383	#478	#431	#518	#414	89	139
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	223	1444	860	619	482	475	480	275	471
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.81	0.95	1.02	0.85	0.99	0.87	0.85	0.96

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	900	73	10	675	70	35
v/c Ratio	0.71	0.12	0.05	0.48	0.09	0.05
Control Delay	18.5	4.1	22.0	12.3	12.0	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.5	4.1	22.0	12.3	12.0	5.7
Queue Length 50th (ft)	117	0	3	81	12	0
Queue Length 95th (ft)	144	14	14	87	30	10
Internal Link Dist (ft)	1370			1308	1710	
Turn Bay Length (ft)		165	165		65	
Base Capacity (vph)	1311	632	250	1875	765	703
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.12	0.04	0.36	0.09	0.05

Intersection Summary

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	57	776	20	48	764	7	13	66	11	56
v/c Ratio	0.30	0.84	0.05	0.25	0.83	0.02	0.04	0.09	0.03	0.07
Control Delay	30.4	33.7	9.2	29.6	33.0	11.5	26.8	5.4	26.9	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	33.7	9.2	29.6	33.0	11.5	26.8	5.4	26.9	5.7
Queue Length 50th (ft)	21	154	0	18	152	0	2	0	2	0
Queue Length 95th (ft)	45	#187	12	41	#193	8	7	15	7	17
Internal Link Dist (ft)		1312			2776			1152		369
Turn Bay Length (ft)	350		250	250		125	140		100	
Base Capacity (vph)	212	922	427	212	918	416	410	755	410	749
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.84	0.05	0.23	0.83	0.02	0.03	0.09	0.03	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2010 BASELINE TRAFFIC CONDITION

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	392	124	267	67	217	86	207	1071	72	124	1027	668
v/c Ratio	0.85	0.14	0.47	0.32	0.46	0.30	0.45	0.54	0.11	0.49	0.79	0.79
Control Delay	50.2	21.6	9.0	36.0	30.8	9.8	31.0	19.2	5.5	33.9	25.9	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.2	21.6	9.0	36.0	30.8	9.8	31.0	19.2	5.5	33.9	25.9	16.6
Queue Length 50th (ft)	87	23	17	14	46	0	42	135	0	49	206	92
Queue Length 95th (ft)	#161	42	74	32	74	35	73	189	26	97	#317	#302
Internal Link Dist (ft)		665			800			120			517	
Turn Bay Length (ft)	330		200	310			330		200	330		200
Base Capacity (vph)	459	1072	632	211	809	428	465	1983	661	257	1303	842
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.12	0.42	0.32	0.27	0.20	0.45	0.54	0.11	0.48	0.79	0.79

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	337	1048	312	64	1471	242	325	5	167	224	23	339
v/c Ratio	1.09	0.58	0.34	0.53	1.08	0.36	1.10	0.02	0.42	0.85	0.09	0.78
Control Delay	122.9	23.1	5.3	76.9	91.7	22.4	128.9	43.8	10.4	77.8	45.9	27.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	122.9	23.1	5.3	76.9	91.7	22.4	128.9	43.8	10.4	77.8	45.9	27.3
Queue Length 50th (ft)	~294	304	26	53	~682	105	~286	3	0	169	16	65
Queue Length 95th (ft)	#479	374	79	m74	#826	m152	#468	16	62	#295	41	#204
Internal Link Dist (ft)		1334			2700			1560			524	
Turn Bay Length (ft)	165		165	165		165	65		65	65		65
Base Capacity (vph)	310	1792	925	133	1357	678	295	297	393	280	264	437
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.58	0.34	0.48	1.08	0.36	1.10	0.02	0.42	0.80	0.09	0.78

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	73	1115	10	176	1317	13	59	159	23	297
v/c Ratio	0.62	0.77	0.02	0.62	0.82	0.02	0.13	0.27	0.03	0.50
Control Delay	54.0	15.9	6.2	37.2	20.0	5.6	17.0	7.0	15.9	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	15.9	6.2	37.2	20.0	5.6	17.0	7.0	15.9	15.6
Queue Length 50th (ft)	41	197	1	32	207	0	8	9	3	59
Queue Length 95th (ft)	m#69	282	m3	#67	#291	8	20	47	10	126
Internal Link Dist (ft)		2700			3484			1081		369
Turn Bay Length (ft)	350		250	250		125	140		100	
Base Capacity (vph)	118	1534	692	286	1606	725	471	590	720	591
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.73	0.01	0.62	0.82	0.02	0.13	0.27	0.03	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	8	1210	113	120	1310	108	146	370	186	73	29
v/c Ratio	0.04	0.86	0.16	0.61	0.80	0.14	0.57	0.71	0.70	0.15	0.07
Control Delay	31.7	27.4	3.8	47.1	21.3	5.8	41.1	24.3	48.2	22.0	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	27.4	3.8	47.1	21.3	5.8	41.1	24.3	48.2	22.0	9.0
Queue Length 50th (ft)	1	242	0	26	212	8	31	92	41	25	0
Queue Length 95th (ft)	8	#343	27	#59	#413	39	#64	#217	#89	56	19
Internal Link Dist (ft)		3484			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	196	1416	701	196	1658	777	257	524	266	495	442
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.85	0.16	0.61	0.79	0.14	0.57	0.71	0.70	0.15	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	277	1289	184	98	1054	291	163	311	160	529	432	297
v/c Ratio	0.87	0.84	0.30	0.46	0.84	0.48	0.52	0.36	0.31	0.91	0.35	0.43
Control Delay	59.0	28.8	4.9	37.0	31.1	5.9	34.5	21.7	5.8	49.8	17.3	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	28.8	4.9	37.0	31.1	5.9	34.5	21.7	5.8	49.8	17.3	8.7
Queue Length 50th (ft)	57	180	0	19	145	0	32	53	0	107	68	29
Queue Length 95th (ft)	#120	#264	41	41	#211	53	59	85	40	#192	103	86
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	317	1533	606	211	1252	609	317	871	510	581	1252	686
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.84	0.30	0.46	0.84	0.48	0.51	0.36	0.31	0.91	0.35	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBR
Lane Group Flow (vph)	1986	1	2	1446	61	1	61	1
v/c Ratio	0.72	0.00	0.01	0.50	0.07	0.00	0.28	0.00
Control Delay	17.1	7.0	39.5	12.1	2.5	30.0	43.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.1	7.0	39.5	12.1	2.5	30.0	43.8	0.0
Queue Length 50th (ft)	247	0	0	153	2	0	17	0
Queue Length 95th (ft)	369	2	4	172	15	2	37	0
Internal Link Dist (ft)	2270			2660		994		
Turn Bay Length (ft)		140	220		140		120	120
Base Capacity (vph)	2770	863	213	2880	920	1182	221	630
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.00	0.01	0.50	0.07	0.00	0.28	0.00

Intersection Summary

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	80	1988	402	1274	168	107	458	72	102	49
v/c Ratio	0.54	1.24	1.24	0.63	1.14	0.31	0.91	0.97	0.39	0.18
Control Delay	66.1	143.6	171.9	9.5	164.1	45.4	43.8	155.2	51.6	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.1	143.6	171.9	9.5	164.1	45.4	43.8	155.2	51.6	14.3
Queue Length 50th (ft)	60	~1008	~399	176	~152	73	161	57	73	0
Queue Length 95th (ft)	112	#1148	m#581	231	#295	127	#362	#155	129	36
Internal Link Dist (ft)		2660		4430		2164			665	
Turn Bay Length (ft)	290		310		105		75	80		80
Base Capacity (vph)	177	1604	325	2033	148	342	504	74	264	266
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	1.24	1.24	0.63	1.14	0.31	0.91	0.97	0.39	0.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

13: Herndon Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	129	2365	98	248	1454	270	154	149	286	241	173	163
v/c Ratio	0.58	1.11	0.10	1.24	0.69	0.26	0.77	0.28	0.90	1.20	0.33	0.47
Control Delay	68.4	73.5	2.5	180.4	10.3	1.6	80.4	46.9	65.0	177.3	47.5	18.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	73.5	2.5	180.4	10.3	1.6	80.4	46.9	65.0	177.3	47.5	18.1
Queue Length 50th (ft)	47	~1124	11	~126	133	3	61	54	151	~117	63	25
Queue Length 95th (ft)	m45	m861	m11	m#204	181	m26	#115	87	#315	#202	99	92
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		190	245		125	160		160
Base Capacity (vph)	229	2123	957	200	2100	1030	200	531	317	200	531	345
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	1.11	0.10	1.24	0.69	0.26	0.77	0.28	0.90	1.21	0.33	0.47

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

14: Herndon Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	67	2849	191	364	2054	141	99	84	333	272	112	52
v/c Ratio	0.47	1.16	0.23	1.16	0.74	0.16	0.50	0.15	0.97	1.15	0.09	0.13
Control Delay	58.0	98.4	8.7	147.6	23.0	6.9	64.1	44.4	75.0	152.2	36.3	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	98.4	8.7	147.6	23.0	6.9	64.1	44.4	75.0	152.2	36.3	10.7
Queue Length 50th (ft)	27	~949	21	~171	438	22	39	30	180	~248	24	0
Queue Length 95th (ft)	m27	m#809	m19	#269	499	55	68	54	#368	#421	42	33
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	143	2458	815	315	2788	904	200	560	344	236	1192	411
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	1.16	0.23	1.16	0.74	0.16	0.50	0.15	0.97	1.15	0.09	0.13

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

15: Herndon Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1025	2335	117	268	1396	408	166	870	238	188	791	851
v/c Ratio	1.03	0.96	0.15	0.97	1.02	0.80	0.97	0.81	0.52	0.78	0.97	0.96
Control Delay	72.1	36.1	6.0	95.5	65.5	37.9	109.2	44.8	17.3	68.8	64.5	44.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.1	36.1	6.0	95.5	65.5	37.9	109.2	44.8	17.3	68.8	64.5	44.3
Queue Length 50th (ft)	~362	505	12	89	~335	179	55	195	44	61	264	485
Queue Length 95th (ft)	#487	#640	42	#171	#441	#333	#122	244	119	#117	#389	#779
Internal Link Dist (ft)		5199			5182			392			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	996	2441	802	275	1373	509	172	1068	456	240	814	887
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.96	0.15	0.97	1.02	0.80	0.97	0.81	0.52	0.78	0.97	0.96

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	249	2123	151	118	1721	259	137	277	134	238	416	242
v/c Ratio	0.78	0.93	0.19	0.64	0.88	0.36	0.60	0.24	0.30	0.87	0.34	0.51
Control Delay	51.7	29.9	4.9	52.6	27.8	8.1	45.8	24.4	8.6	65.3	24.5	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.7	29.9	4.9	52.6	27.8	8.1	45.8	24.4	8.6	65.3	24.5	16.2
Queue Length 50th (ft)	59	343	8	28	265	29	32	38	6	57	58	44
Queue Length 95th (ft)	#114	#469	40	#64	#331	79	#65	60	47	#120	85	110
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	320	2278	775	183	1966	711	229	1153	450	275	1220	476
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.93	0.19	0.64	0.88	0.36	0.60	0.24	0.30	0.87	0.34	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

31: Bullard & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	185	972	88	113	695	53	470	89	93	501	75
v/c Ratio	0.68	0.99	0.10	0.95	0.45	0.68	0.78	0.28	0.94	0.71	0.21
Control Delay	48.3	49.0	3.2	114.6	18.6	83.1	45.6	17.3	121.0	40.3	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.3	49.0	3.2	114.6	18.6	83.1	45.6	17.3	121.0	40.3	15.0
Queue Length 50th (ft)	100	523	1	65	137	30	134	16	54	143	10
Queue Length 95th (ft)	164	#812	23	#171	197	#92	188	57	#149	198	48
Internal Link Dist (ft)		1194			1253		2670			4855	
Turn Bay Length (ft)	150			140		120		55	90		70
Base Capacity (vph)	326	983	874	119	1540	78	629	327	99	710	360
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.99	0.10	0.95	0.45	0.68	0.75	0.27	0.94	0.71	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

34: Shaw Ave & SR 99 SB Off Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	974	529	621	920	71	290
v/c Ratio	1.14	0.58	1.17	0.33	0.28	0.61
Control Delay	108.8	11.1	133.3	3.9	49.5	11.4
Queue Delay	118.0	0.0	0.0	0.0	0.0	0.7
Total Delay	226.8	11.1	133.3	3.9	49.5	12.2
Queue Length 50th (ft)	~882	101	~573	86	50	0
Queue Length 95th (ft)	#1133	209	#799	106	96	82
Internal Link Dist (ft)	8376			500	619	
Turn Bay Length (ft)			110			
Base Capacity (vph)	854	905	531	2802	251	473
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	162	0	0	0	0	42
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.41	0.58	1.17	0.33	0.28	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

35: Shaw Ave & SR 99 NB Off Ramps

Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Group Flow (vph)	122	1123	1258	282	158	276
v/c Ratio	0.71	0.96	0.71	0.30	0.35	0.49
Control Delay	54.3	31.8	16.3	2.3	25.0	10.0
Queue Delay	0.0	4.7	0.0	0.0	0.0	0.0
Total Delay	54.3	36.6	16.3	2.3	25.0	10.0
Queue Length 50th (ft)	52	355	207	0	58	22
Queue Length 95th (ft)	#127	#692	278	33	109	85
Internal Link Dist (ft)		500	2498		599	
Turn Bay Length (ft)	120					
Base Capacity (vph)	177	1224	1796	943	456	565
Starvation Cap Reductn	0	67	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.97	0.70	0.30	0.35	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

36: Shaw Ave & Golden State

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	39	1091	41	402	1224	175	232	412	33	18	327	572
v/c Ratio	0.38	1.03	0.08	1.03	0.69	0.20	1.01	0.36	0.06	0.20	0.49	0.96
Control Delay	55.8	70.2	12.4	94.2	22.6	4.1	106.6	27.9	9.8	51.1	39.0	44.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.8	70.2	12.4	94.2	22.6	4.1	106.6	27.9	9.8	51.1	39.0	44.0
Queue Length 50th (ft)	24	~393	5	~277	328	6	~152	98	0	11	98	146
Queue Length 95th (ft)	59	#522	30	#461	412	43	#305	160	23	34	143	#371
Internal Link Dist (ft)		2498			1070			270			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	106	1062	496	389	1770	869	230	1147	535	89	672	596
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	1.03	0.08	1.03	0.69	0.20	1.01	0.36	0.06	0.20	0.49	0.96

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	112	1295	79	132	1225	102	185	250	70	255	743	158
v/c Ratio	0.49	0.85	0.15	0.58	0.80	0.19	0.61	0.24	0.14	0.71	0.69	0.27
Control Delay	34.7	26.7	5.3	38.5	24.5	5.1	36.9	17.8	6.0	39.5	22.9	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	26.7	5.3	38.5	24.5	5.1	36.9	17.8	6.0	39.5	22.9	4.8
Queue Length 50th (ft)	20	159	0	24	147	0	34	37	0	47	127	0
Queue Length 95th (ft)	42	#220	25	#54	195	28	#71	63	25	#96	183	36
Internal Link Dist (ft)		3252			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	229	1526	530	229	1526	546	303	1022	506	359	1080	593
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.85	0.15	0.58	0.80	0.19	0.61	0.24	0.14	0.71	0.69	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

38: Shaw Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	268	1557	110	157	1025	64	197	443	417	303	553	438
v/c Ratio	0.78	0.93	0.19	0.80	0.71	0.13	0.80	0.44	0.74	0.88	0.50	0.72
Control Delay	48.6	34.8	6.2	63.7	25.5	6.4	58.3	22.1	23.8	60.2	21.4	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	34.8	6.2	63.7	25.5	6.4	58.3	22.1	23.8	60.2	21.4	21.4
Queue Length 50th (ft)	59	234	4	35	143	0	44	81	100	67	100	103
Queue Length 95th (ft)	#114	#330	36	#83	188	25	#96	121	#233	#135	145	#216
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	343	1671	584	196	1453	498	245	1011	562	343	1112	607
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.93	0.19	0.80	0.71	0.13	0.80	0.44	0.74	0.88	0.50	0.72

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

39: Shaw Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	133	1715	159	168	1158	73	217	585	289	161	455	172
v/c Ratio	0.52	0.95	0.24	0.80	0.62	0.12	0.82	0.63	0.55	0.61	0.49	0.33
Control Delay	36.6	34.7	4.1	59.3	19.3	5.0	56.7	24.9	14.4	40.1	22.5	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.6	34.7	4.1	59.3	19.3	5.0	56.7	24.9	14.4	40.1	22.5	6.9
Queue Length 50th (ft)	26	236	1	35	141	0	44	107	44	32	80	6
Queue Length 95th (ft)	51	#341	34	#82	185	24	#98	156	111	#66	121	48
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	258	1799	661	211	1862	626	264	926	526	264	926	526
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.95	0.24	0.80	0.62	0.12	0.82	0.63	0.55	0.61	0.49	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1593	38	149	545	22	438	175	108
v/c Ratio	0.94	0.05	0.78	0.24	0.07	0.79	0.39	0.13
Control Delay	31.5	6.6	62.6	6.1	22.1	25.5	26.3	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	6.6	62.6	6.1	22.1	25.5	26.3	9.0
Queue Length 50th (ft)	349	4	69	49	8	98	68	5
Queue Length 95th (ft)	#516	18	#162	71	25	#247	122	23
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1699	771	190	2265	324	557	450	860
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.05	0.78	0.24	0.07	0.79	0.39	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

41: Ashlan Ave & Golden State

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	374	1199	584	321	243	308	279	195	228
v/c Ratio	0.89	0.72	0.88	0.67	0.67	0.78	0.69	0.54	0.48
Control Delay	58.4	21.9	51.8	18.3	43.0	37.1	30.7	39.5	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.4	21.9	51.8	18.3	43.0	37.1	30.7	39.5	8.5
Queue Length 50th (ft)	204	272	171	47	134	123	97	52	0
Queue Length 95th (ft)	#361	348	#262	137	#235	#269	#210	87	61
Internal Link Dist (ft)		1158	1045			526			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	435	1691	676	486	361	397	403	364	473
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.71	0.86	0.66	0.67	0.78	0.69	0.54	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	584	217	138	89	210	166	166	1248	82	122	964	480
v/c Ratio	0.86	0.21	0.25	0.39	0.45	0.52	0.42	0.75	0.14	0.51	0.79	0.56
Control Delay	44.1	21.2	5.2	38.7	32.7	15.3	34.7	27.5	6.1	38.3	29.0	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	21.2	5.2	38.7	32.7	15.3	34.7	27.5	6.1	38.3	29.0	5.0
Queue Length 50th (ft)	136	42	0	21	48	16	36	193	0	52	216	0
Queue Length 95th (ft)	#218	63	36	42	75	65	69	#279	30	#106	#322	62
Internal Link Dist (ft)		665			800			120			517	
Turn Bay Length (ft)	330		200	310			330		200	330		200
Base Capacity (vph)	687	1227	639	231	755	439	395	1653	570	237	1216	859
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.18	0.22	0.39	0.28	0.38	0.42	0.75	0.14	0.51	0.79	0.56

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	337	1638	128	2	1425	204	96	12	3	243	11	350
v/c Ratio	1.04	0.77	0.13	0.03	1.01	0.29	0.41	0.04	0.01	1.03	0.04	0.68
Control Delay	107.8	21.2	5.3	65.5	67.6	20.5	53.5	44.3	28.7	117.6	44.2	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	107.8	21.2	5.3	65.5	67.6	20.5	53.5	44.3	28.7	117.6	44.2	13.9
Queue Length 50th (ft)	~282	446	15	1	~590	76	69	8	0	~202	7	15
Queue Length 95th (ft)	#467	644	48	m4	m#732	m100	125	27	9	#366	25	112
Internal Link Dist (ft)		1334			2700			1560			524	
Turn Bay Length (ft)	165		165	165		165	65		65	65		65
Base Capacity (vph)	325	2135	985	59	1416	695	236	279	240	236	279	516
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.77	0.13	0.03	1.01	0.29	0.41	0.04	0.01	1.03	0.04	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	134	1495	37	88	1346	29	29	71	20	65
v/c Ratio	0.76	0.88	0.05	0.38	0.90	0.04	0.04	0.14	0.03	0.13
Control Delay	56.9	17.3	3.5	32.0	26.4	5.0	16.6	8.0	16.5	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	17.3	3.5	32.0	26.4	5.0	16.6	8.0	16.5	8.1
Queue Length 50th (ft)	81	254	1	15	222	1	4	4	2	3
Queue Length 95th (ft)	m91	m496	m7	35	#354	13	12	29	9	28
Internal Link Dist (ft)		2700			3484			1081		369
Turn Bay Length (ft)	350		250	250		125	140		100	
Base Capacity (vph)	177	1705	781	229	1534	701	719	497	715	494
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.88	0.05	0.38	0.88	0.04	0.04	0.14	0.03	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	10	1398	155	410	1302	220	148	376	228	85	29
v/c Ratio	0.07	0.96	0.21	0.98	0.66	0.23	0.50	0.79	0.85	0.22	0.08
Control Delay	42.2	42.8	3.7	68.5	7.9	1.1	45.4	33.0	70.3	32.1	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	42.8	3.7	68.5	7.9	1.1	45.4	33.0	70.3	32.1	11.9
Queue Length 50th (ft)	3	397	0	93	27	0	42	118	67	41	0
Queue Length 95th (ft)	11	#553	36	m#145	m411	m21	72	#261	#131	82	23
Internal Link Dist (ft)		3484			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	153	1455	742	420	1982	942	305	474	267	378	344
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.96	0.21	0.98	0.66	0.23	0.49	0.79	0.85	0.22	0.08

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	498	1237	182	111	1367	568	188	595	71	621	537	359
v/c Ratio	0.93	0.63	0.25	0.48	0.97	0.81	0.57	0.84	0.20	0.96	0.52	0.55
Control Delay	52.4	11.2	1.8	34.0	58.6	36.5	46.0	47.0	12.9	64.0	28.8	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	11.2	1.8	34.0	58.6	36.5	46.0	47.0	12.9	64.0	28.8	11.0
Queue Length 50th (ft)	127	156	12	31	312	215	53	172	7	181	134	39
Queue Length 95th (ft)	m#150	m177	m13	m40	#398	#369	87	#257	42	#288	184	121
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	534	1978	715	229	1413	698	343	708	362	648	1035	652
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.63	0.25	0.48	0.97	0.81	0.55	0.84	0.20	0.96	0.52	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

11: Herndon Ave & Blythe

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	1	1921	1	4	2057	72	2	4	72	1	11
v/c Ratio	0.00	0.67	0.00	0.02	0.71	0.08	0.01	0.00	0.35	0.00	0.03
Control Delay	33.0	23.0	11.0	39.8	16.1	4.9	39.5	0.0	45.7	30.0	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	23.0	11.0	39.8	16.1	4.9	39.5	0.0	45.7	30.0	16.3
Queue Length 50th (ft)	0	412	0	1	242	5	0	0	20	1	0
Queue Length 95th (ft)	m0	m478	m0	6	405	29	4	0	42	5	14
Internal Link Dist (ft)		2270			2660			994		425	
Turn Bay Length (ft)	220		140	220		140	235		120		120
Base Capacity (vph)	212	2884	898	215	2887	918	610	1055	207	401	349
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.67	0.00	0.02	0.71	0.08	0.00	0.00	0.35	0.00	0.03

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	63	1969	526	1861	355	103	446	30	91	66
v/c Ratio	0.65	1.30	1.36	0.85	1.18	0.23	0.72	0.10	0.21	0.16
Control Delay	81.1	166.9	214.1	22.7	146.5	35.7	17.8	34.1	35.3	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.1	166.9	214.1	22.7	146.5	35.7	17.8	34.1	35.3	9.2
Queue Length 50th (ft)	45	~936	~490	546	~301	59	72	17	52	0
Queue Length 95th (ft)	#112	#1077	#700	671	#483	107	197	43	97	35
Internal Link Dist (ft)		2660		4430		2164			665	
Turn Bay Length (ft)	290		310		105		75	80		80
Base Capacity (vph)	97	1519	386	2180	302	440	623	291	440	425
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	1.30	1.36	0.85	1.18	0.23	0.72	0.10	0.21	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

13: Herndon Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	240	1901	135	361	2176	424	208	267	276	302	251	372
v/c Ratio	1.05	1.01	0.16	0.97	1.07	0.42	1.04	0.53	0.82	1.06	0.43	1.04
Control Delay	126.4	50.9	12.0	93.3	67.5	7.6	129.1	52.2	46.6	121.2	47.4	91.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	126.4	50.9	12.0	93.3	67.5	7.6	129.1	52.2	46.6	121.2	47.4	91.4
Queue Length 50th (ft)	~104	~763	41	145	~982	72	~89	102	113	~131	92	~232
Queue Length 95th (ft)	#189	#951	75	#243	#1118	141	#169	147	#255	#224	135	#427
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		190	245		125	160		160
Base Capacity (vph)	229	1887	856	372	2035	1006	200	501	336	286	590	359
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	1.01	0.16	0.97	1.07	0.42	1.04	0.53	0.82	1.06	0.43	1.04

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

14: Herndon Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	108	2217	190	332	2917	335	177	155	501	233	164	175
v/c Ratio	0.95	1.01	0.25	0.97	1.15	0.39	0.60	0.20	1.12	1.13	0.13	0.39
Control Delay	129.2	54.7	10.0	95.2	100.8	12.8	61.7	39.3	110.1	148.4	35.7	24.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	129.2	54.7	10.0	95.2	100.8	12.8	61.7	39.3	110.1	148.4	35.7	24.2
Queue Length 50th (ft)	43	~627	36	134	~971	94	69	52	~359	~209	36	63
Queue Length 95th (ft)	#103	#752	84	#227	#1058	164	106	82	#576	#372	57	131
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	114	2204	749	343	2543	854	313	767	449	207	1260	448
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	1.01	0.25	0.97	1.15	0.39	0.57	0.20	1.12	1.13	0.13	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

15: Herndon Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1014	1814	72	300	2287	236	187	959	196	336	889	1135
v/c Ratio	1.14	0.74	0.09	0.72	1.32	0.39	1.31	0.98	0.42	1.31	1.12	1.39
Control Delay	118.5	28.0	7.3	61.0	180.4	20.7	224.1	73.6	8.7	206.8	112.0	209.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	118.5	28.0	7.3	61.0	180.4	20.7	224.1	73.6	8.7	206.8	112.0	209.1
Queue Length 50th (ft)	~474	413	8	115	~837	85	~95	273	0	~172	~416	~1170
Queue Length 95th (ft)	#604	477	34	163	#931	156	#172	#369	63	#267	#546	#1428
Internal Link Dist (ft)		5199			5182			392			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	887	2435	785	452	1737	598	143	975	462	257	796	818
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.74	0.09	0.66	1.32	0.39	1.31	0.98	0.42	1.31	1.12	1.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	272	1884	389	195	1699	284	238	666	105	312	867	516
v/c Ratio	0.91	0.96	0.52	0.91	0.92	0.42	0.93	0.55	0.23	0.81	0.62	0.96
Control Delay	71.3	37.2	10.1	81.4	34.3	10.4	79.4	28.8	6.9	52.5	27.7	53.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.3	37.2	10.1	81.4	34.3	10.4	79.4	28.8	6.9	52.5	27.7	53.5
Queue Length 50th (ft)	70	327	53	51	291	42	62	107	0	79	138	193
Queue Length 95th (ft)	#140	#441	130	#112	#393	103	#129	143	37	#143	179	#393
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	300	1970	754	215	1843	676	257	1208	456	386	1398	537
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.96	0.52	0.91	0.92	0.42	0.93	0.55	0.23	0.81	0.62	0.96

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

31: Bullard & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	210	800	87	179	1060	193	912	177	90	898	135
v/c Ratio	0.82	1.07	0.13	1.01	0.85	1.09	0.86	0.35	0.93	1.00	0.31
Control Delay	71.1	87.5	8.1	120.8	40.5	140.8	45.8	22.6	126.5	70.7	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.1	87.5	8.1	120.8	40.5	140.8	45.8	22.6	126.5	70.7	23.3
Queue Length 50th (ft)	144	~630	9	~130	363	~154	318	65	65	334	49
Queue Length 95th (ft)	#257	#864	41	#275	#463	#300	#408	127	#166	#474	103
Internal Link Dist (ft)		1194			1253		2670			4855	
Turn Bay Length (ft)	150			140		120		55	90		70
Base Capacity (vph)	271	745	672	177	1251	177	1062	513	97	901	439
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	1.07	0.13	1.01	0.85	1.09	0.86	0.35	0.93	1.00	0.31

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

34: Shaw Ave & SR 99 SB Off Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	878	299	546	1624	104	317
v/c Ratio	1.03	0.36	1.03	0.58	0.41	0.64
Control Delay	70.9	7.7	88.2	5.8	52.6	11.5
Queue Delay	93.6	0.0	0.0	1.0	0.0	0.9
Total Delay	164.5	7.7	88.2	6.8	52.6	12.5
Queue Length 50th (ft)	~727	40	~452	209	74	0
Queue Length 95th (ft)	#974	101	#670	252	132	85
Internal Link Dist (ft)	8376			500	619	
Turn Bay Length (ft)			110			
Base Capacity (vph)	854	838	531	2802	251	496
Starvation Cap Reductn	0	0	0	823	0	0
Spillback Cap Reductn	154	0	0	0	0	47
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.25	0.36	1.03	0.82	0.41	0.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

35: Shaw Ave & SR 99 NB Off Ramps

Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Group Flow (vph)	68	1178	1787	390	357	351
v/c Ratio	0.58	0.96	0.89	0.37	0.80	0.70
Control Delay	61.7	33.4	24.1	2.1	47.4	28.9
Queue Delay	0.0	27.4	0.0	0.0	0.0	0.1
Total Delay	61.7	60.9	24.1	2.1	47.4	29.1
Queue Length 50th (ft)	38	513	435	0	196	118
Queue Length 95th (ft)	#96	#897	558	37	#350	#247
Internal Link Dist (ft)		500	2498		599	
Turn Bay Length (ft)	120					
Base Capacity (vph)	118	1263	2011	1068	449	498
Starvation Cap Reductn	0	148	0	0	0	0
Spillback Cap Reductn	0	0	5	0	0	6
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.58	1.06	0.89	0.37	0.80	0.71

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

36: Shaw Ave & Golden State

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	49	1426	57	472	1895	301	225	293	43	50	634	970
v/c Ratio	0.83	1.38	0.12	1.52	1.20	0.38	1.39	0.23	0.07	0.46	0.58	1.37
Control Delay	133.5	212.1	20.0	285.9	127.1	13.6	248.7	28.7	8.4	67.9	37.6	201.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	133.5	212.1	20.0	285.9	127.1	13.6	248.7	28.7	8.4	67.9	37.6	201.2
Queue Length 50th (ft)	39	~772	17	~511	~956	80	~232	86	0	38	217	~820
Queue Length 95th (ft)	#115	#910	51	#719	#1095	152	#392	122	26	81	278	#1076
Internal Link Dist (ft)		2498			1070			270			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	59	1032	480	310	1581	783	162	1254	588	118	1091	706
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	1.38	0.12	1.52	1.20	0.38	1.39	0.23	0.07	0.42	0.58	1.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	315	1851	164	223	1974	266	300	836	164	464	476	185
v/c Ratio	1.01	0.91	0.24	0.89	1.02	0.39	0.70	0.96	0.36	0.99	0.52	0.36
Control Delay	103.7	39.1	12.0	86.0	58.8	15.7	55.4	64.2	20.1	87.6	37.9	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.7	39.1	12.0	86.0	58.8	15.7	55.4	64.2	20.1	87.6	37.9	11.1
Queue Length 50th (ft)	~118	444	36	81	~523	73	105	308	47	171	154	20
Queue Length 95th (ft)	#210	516	83	#154	#637	143	151	#436	109	#277	208	80
Internal Link Dist (ft)		3252			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	312	2034	682	250	1942	674	468	869	450	468	911	517
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.91	0.24	0.89	1.02	0.39	0.64	0.96	0.36	0.99	0.52	0.36

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

38: Shaw Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	623	1600	241	337	1643	186	470	728	205	238	479	462
v/c Ratio	1.02	0.83	0.34	0.81	1.00	0.31	1.03	0.84	0.41	0.89	0.72	0.89
Control Delay	80.0	30.0	8.0	54.9	54.3	9.4	89.0	42.8	12.1	75.9	41.1	36.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.0	30.0	8.0	54.9	54.3	9.4	89.0	42.8	12.1	75.9	41.1	36.7
Queue Length 50th (ft)	~190	297	26	97	~341	22	~148	207	26	70	135	111
Queue Length 95th (ft)	#302	358	78	#163	#455	70	#244	#298	85	#139	190	#295
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	610	1926	704	420	1639	599	458	865	498	267	668	517
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.83	0.34	0.80	1.00	0.31	1.03	0.84	0.41	0.89	0.72	0.89

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

39: Shaw Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	243	1537	136	287	1709	126	252	384	141	146	532	190
v/c Ratio	0.83	0.88	0.22	0.84	0.94	0.20	0.86	0.40	0.27	0.51	0.62	0.36
Control Delay	56.5	29.3	4.4	54.1	34.1	6.4	60.4	23.3	5.9	37.5	27.3	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.5	29.3	4.4	54.1	34.1	6.4	60.4	23.3	5.9	37.5	27.3	6.3
Queue Length 50th (ft)	54	224	0	63	255	8	56	74	0	31	107	1
Queue Length 95th (ft)	#111	#311	33	#125	#359	40	#117	113	39	58	156	47
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	294	1743	632	343	1816	628	294	960	532	287	859	525
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.88	0.22	0.84	0.94	0.20	0.86	0.40	0.27	0.51	0.62	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1134	71	415	1307	55	538	166	210
v/c Ratio	0.92	0.12	0.88	0.56	0.21	0.73	0.40	0.25
Control Delay	38.4	10.0	50.1	8.0	27.7	10.9	29.7	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	10.0	50.1	8.0	27.7	10.9	29.7	16.2
Queue Length 50th (ft)	281	10	196	151	22	21	71	26
Queue Length 95th (ft)	#408	37	#351	198	54	125	128	55
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1261	591	493	2389	268	742	412	830
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.12	0.84	0.55	0.21	0.73	0.40	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

41: Ashlan Ave & Golden State

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	261	1213	1011	759	506	561	503	218	407
v/c Ratio	1.18	0.76	0.98	1.17	0.95	1.10	0.98	1.05	1.01
Control Delay	163.6	31.5	65.9	117.3	69.4	107.1	72.8	125.9	71.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	163.6	31.5	65.9	117.3	69.4	107.1	72.8	125.9	71.3
Queue Length 50th (ft)	~242	405	408	~545	402	~513	372	~94	~161
Queue Length 95th (ft)	#412	492	#552	#786	#630	#758	#615	#176	#372
Internal Link Dist (ft)		1158	1045			526			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	221	1593	1032	650	532	508	512	208	403
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.18	0.76	0.98	1.17	0.95	1.10	0.98	1.05	1.01

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	400	1359	86	11	1341	268	82	207	29	264	20	376
v/c Ratio	1.04	0.64	0.09	0.19	1.03	0.40	0.35	0.83	0.13	0.99	0.07	0.68
Control Delay	103.1	17.5	4.5	69.0	74.0	22.5	51.9	78.2	27.9	104.7	44.7	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.1	17.5	4.5	69.0	74.0	22.5	51.9	78.2	27.9	104.7	44.7	11.3
Queue Length 50th (ft)	~336	322	7	8	~585	124	59	159	8	207	13	0
Queue Length 95th (ft)	#532	468	33	m15	#728	m174	110	#288	37	#381	37	94
Internal Link Dist (ft)		1334			2700			1560			524	
Turn Bay Length (ft)	165		165	165		165	65		65	65		65
Base Capacity (vph)	384	2135	980	59	1298	667	236	248	226	266	279	557
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.64	0.09	0.19	1.03	0.40	0.35	0.83	0.13	0.99	0.07	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	1289	42	48	1332	59	36	59	55	53
v/c Ratio	0.46	0.83	0.06	0.21	0.86	0.08	0.04	0.10	0.06	0.09
Control Delay	45.5	15.0	2.7	28.8	22.1	3.8	15.6	6.5	15.7	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	15.0	2.7	28.8	22.1	3.8	15.6	6.5	15.7	6.6
Queue Length 50th (ft)	30	152	0	8	211	1	4	1	7	1
Queue Length 95th (ft)	m47	m319	m11	22	#302	17	13	23	18	22
Internal Link Dist (ft)		2700			3484			1081		369
Turn Bay Length (ft)	350		250	250		125	140		100	
Base Capacity (vph)	118	1608	742	229	1608	750	906	592	902	588
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.80	0.06	0.21	0.83	0.08	0.04	0.10	0.06	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

2012 BASELINE TRAFFIC CONDITION

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	404	130	277	71	225	73	209	1111	75	122	1055	697
v/c Ratio	0.86	0.16	0.53	0.36	0.49	0.27	0.47	0.53	0.11	0.51	0.77	0.80
Control Delay	52.0	23.8	12.0	39.7	33.5	10.5	34.1	19.3	5.3	37.3	24.9	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	23.8	12.0	39.7	33.5	10.5	34.1	19.3	5.3	37.3	24.9	17.4
Queue Length 50th (ft)	96	26	30	17	52	0	45	147	0	53	225	116
Queue Length 95th (ft)	#173	46	94	36	82	33	80	204	26	102	301	#336
Internal Link Dist (ft)		665			800			120			526	
Turn Bay Length (ft)	330		200	310			330		200	330		200
Base Capacity (vph)	470	1043	608	197	755	395	446	2090	695	248	1377	866
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.12	0.46	0.36	0.30	0.18	0.47	0.53	0.11	0.49	0.77	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & Bryan

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	313	1070	343	67	1514	207	353	33	175	197	42	335
v/c Ratio	1.06	0.56	0.42	0.43	1.07	0.37	1.06	0.07	0.34	0.80	0.12	0.65
Control Delay	107.8	24.3	4.3	47.2	78.2	9.8	102.4	27.6	6.7	62.8	31.4	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	107.8	24.3	4.3	47.2	78.2	9.8	102.4	27.6	6.7	62.8	31.4	14.5
Queue Length 50th (ft)	~198	181	0	36	~353	21	~222	15	0	109	20	32
Queue Length 95th (ft)	#358	228	56	77	#446	76	#389	38	50	#217	48	120
Internal Link Dist (ft)		1330			2700			1557			524	
Turn Bay Length (ft)	165		165	165		165	65			65		65
Base Capacity (vph)	295	1920	811	177	1413	553	334	447	513	256	352	517
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.56	0.42	0.38	1.07	0.37	1.06	0.07	0.34	0.77	0.12	0.65

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	1139	27	184	1345	13	61	169	24	321
v/c Ratio	0.64	0.77	0.06	0.64	0.80	0.02	0.25	0.24	0.10	0.49
Control Delay	55.4	23.6	7.1	38.7	23.2	8.2	29.3	6.6	27.3	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	23.6	7.1	38.7	23.2	8.2	29.3	6.6	27.3	15.6
Queue Length 50th (ft)	28	134	0	34	163	0	11	8	4	70
Queue Length 95th (ft)	#85	179	15	#71	#218	10	27	50	13	142
Internal Link Dist (ft)		2700			1876			1081		369
Turn Bay Length (ft)	350		250	250			140			
Base Capacity (vph)	118	1526	494	286	1691	535	246	698	246	654
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.75	0.05	0.64	0.80	0.02	0.25	0.24	0.10	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NER
Lane Group Flow (vph)	1292	22	1498	28
v/c Ratio	0.30	0.08	0.29	0.10
Control Delay	2.1	15.0	0.1	6.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.1	15.0	0.1	6.0
Queue Length 50th (ft)	0	4	0	0
Queue Length 95th (ft)	57	17	0	12
Internal Link Dist (ft)	870		578	
Turn Bay Length (ft)				
Base Capacity (vph)	4340	487	5085	472
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	0.05	0.29	0.06

Intersection Summary

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	8	1254	99	132	1338	109	151	383	192	74	30
v/c Ratio	0.03	0.82	0.18	0.58	0.69	0.16	0.60	0.63	0.63	0.11	0.05
Control Delay	26.6	25.0	5.1	38.5	18.8	5.3	39.8	15.2	37.9	16.0	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	25.0	5.1	38.5	18.8	5.3	39.8	15.2	37.9	16.0	6.8
Queue Length 50th (ft)	1	152	0	24	129	3	28	60	35	19	0
Queue Length 95th (ft)	7	#203	28	#54	#245	33	#65	144	#75	46	16
Internal Link Dist (ft)		578			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	229	1538	548	229	1945	664	250	610	304	654	575
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.82	0.18	0.58	0.69	0.16	0.60	0.63	0.63	0.11	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	302	1320	189	103	1093	295	168	309	167	547	450	309
v/c Ratio	0.88	0.84	0.31	0.53	0.89	0.49	0.50	0.36	0.33	0.86	0.38	0.48
Control Delay	59.8	29.8	5.5	42.2	36.0	6.1	35.4	23.4	7.3	43.5	19.2	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	29.8	5.5	42.2	36.0	6.1	35.4	23.4	7.3	43.5	19.2	10.3
Queue Length 50th (ft)	67	199	3	22	166	0	36	57	5	119	77	38
Queue Length 95th (ft)	#134	#284	46	#46	#241	55	64	91	48	#199	114	101
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	343	1569	613	196	1235	608	343	862	501	638	1169	648
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.84	0.31	0.53	0.89	0.49	0.49	0.36	0.33	0.86	0.38	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

11: Herndon Ave & N. Blythe Ave.

Lane Group	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBR
Lane Group Flow (vph)	2026	1	2	1490	63	1	63	1
v/c Ratio	0.65	0.00	0.01	0.45	0.06	0.00	0.10	0.00
Control Delay	8.7	4.0	25.0	5.5	0.8	23.0	22.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.7	4.0	25.0	5.5	0.8	23.0	22.8	0.0
Queue Length 50th (ft)	104	0	0	65	0	0	10	0
Queue Length 95th (ft)	219	2	3	71	6	2	25	0
Internal Link Dist (ft)	2270			2660		994		
Turn Bay Length (ft)		140	220		140		120	120
Base Capacity (vph)	3127	974	317	3292	1047	1039	804	570
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.00	0.01	0.45	0.06	0.00	0.08	0.00

Intersection Summary

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	85	1825	241	410	1260	28	173	111	470	75	108	51
v/c Ratio	0.54	1.03	0.37	1.01	0.48	0.03	0.98	0.27	0.74	0.71	0.36	0.17
Control Delay	56.3	60.9	12.0	86.3	17.4	7.2	108.9	35.8	17.2	80.6	41.5	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.3	60.9	12.0	86.3	17.4	7.2	108.9	35.8	17.2	80.6	41.5	12.1
Queue Length 50th (ft)	52	~457	44	~266	195	2	112	61	57	48	62	0
Queue Length 95th (ft)	101	#553	106	#461	237	17	#246	111	#191	#121	115	33
Internal Link Dist (ft)		2660			4430			2164			665	
Turn Bay Length (ft)	290		150	310		100	105		75	80		80
Base Capacity (vph)	177	1780	645	407	2599	819	177	410	634	106	298	296
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	1.03	0.37	1.01	0.48	0.03	0.98	0.27	0.74	0.71	0.36	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

13: Herndon Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	135	2453	71	259	1477	282	162	155	299	252	180	168
v/c Ratio	0.51	0.99	0.09	0.97	0.59	0.31	0.71	0.25	0.76	0.94	0.27	0.40
Control Delay	47.2	38.8	9.9	91.5	17.8	2.6	59.0	33.0	33.0	85.7	32.5	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	38.8	9.9	91.5	17.8	2.6	59.0	33.0	33.0	85.7	32.5	10.2
Queue Length 50th (ft)	38	482	15	77	212	0	47	40	88	74	46	8
Queue Length 95th (ft)	68	#625	37	#153	257	39	#92	68	#211	#148	76	61
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		190	245		125	160		160
Base Capacity (vph)	267	2486	784	267	2492	919	229	629	393	267	668	422
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.99	0.09	0.97	0.59	0.31	0.71	0.25	0.76	0.94	0.27	0.40

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

14: Herndon Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	71	2947	202	383	2121	149	102	88	354	284	116	54
v/c Ratio	0.50	1.20	0.25	1.12	0.75	0.16	0.52	0.17	1.04	1.20	0.10	0.14
Control Delay	69.1	123.6	9.9	132.9	22.8	6.8	64.6	45.4	91.8	169.1	37.2	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.1	123.6	9.9	132.9	22.8	6.8	64.6	45.4	91.8	169.1	37.2	10.7
Queue Length 50th (ft)	28	~1014	43	~175	454	23	40	31	~210	~268	26	0
Queue Length 95th (ft)	53	#1100	90	#275	516	56	70	57	#403	#442	44	34
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	141	2458	816	343	2830	918	200	531	341	236	1148	399
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	1.20	0.25	1.12	0.75	0.16	0.51	0.17	1.04	1.20	0.10	0.14

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

15: Herndon Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1073	2363	123	279	1442	426	174	907	249	197	829	878
v/c Ratio	1.04	0.95	0.15	0.99	1.04	0.82	0.93	0.85	0.55	0.79	1.03	0.98
Control Delay	77.7	36.3	6.7	103.2	74.6	41.4	102.4	50.9	20.0	72.6	82.1	50.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.7	36.3	6.7	103.2	74.6	41.4	102.4	50.9	20.0	72.6	82.1	50.7
Queue Length 50th (ft)	~423	561	16	103	~404	210	64	227	56	71	~331	573
Queue Length 95th (ft)	#552	#667	47	#191	#499	#376	#132	#282	139	#129	#455	#878
Internal Link Dist (ft)		5199			5182			5307			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	1030	2496	817	281	1387	518	187	1063	454	250	804	894
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.95	0.15	0.99	1.04	0.82	0.93	0.85	0.55	0.79	1.03	0.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	249	2213	158	124	1786	271	126	290	137	249	435	253
v/c Ratio	0.73	0.97	0.20	0.72	0.88	0.37	0.60	0.27	0.32	0.83	0.33	0.51
Control Delay	48.6	35.0	5.1	62.2	28.5	8.9	49.3	27.1	10.7	60.3	25.5	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	35.0	5.1	62.2	28.5	8.9	49.3	27.1	10.7	60.3	25.5	18.2
Queue Length 50th (ft)	63	379	11	32	294	37	32	44	11	64	66	57
Queue Length 95th (ft)	#113	#508	43	#74	360	91	#63	68	56	#125	94	130
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	343	2288	777	172	2034	726	211	1081	423	300	1322	498
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.97	0.20	0.72	0.88	0.37	0.60	0.27	0.32	0.83	0.33	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

31: Bullard Ave. & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	197	1002	92	118	729	55	490	93	98	524	78
v/c Ratio	0.69	1.02	0.11	0.99	0.48	0.57	0.80	0.29	0.99	0.77	0.22
Control Delay	48.3	57.9	3.3	126.3	19.6	65.0	46.9	18.0	134.7	43.8	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.3	57.9	3.3	126.3	19.6	65.0	46.9	18.0	134.7	43.8	16.2
Queue Length 50th (ft)	107	~616	2	69	148	31	141	18	57	153	13
Queue Length 95th (ft)	172	#850	24	#178	213	#83	#210	60	#158	#233	51
Internal Link Dist (ft)		1463			807		3248			5307	
Turn Bay Length (ft)	150			140		120		55	90		70
Base Capacity (vph)	343	980	872	119	1512	97	629	327	99	682	347
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	1.02	0.11	0.99	0.48	0.57	0.78	0.28	0.99	0.77	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

34: Shaw Ave & SR 99 SB Off Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1020	530	648	954	72	301
v/c Ratio	1.19	0.59	1.22	0.34	0.29	0.62
Control Delay	129.9	11.9	152.4	3.9	49.6	11.4
Queue Delay	120.7	0.0	0.0	0.3	0.0	3.0
Total Delay	250.6	11.9	152.4	4.3	49.6	14.5
Queue Length 50th (ft)	~956	111	~617	91	51	0
Queue Length 95th (ft)	#1209	221	#844	112	97	83
Internal Link Dist (ft)	8376			500	619	
Turn Bay Length (ft)			110			
Base Capacity (vph)	854	897	531	2802	251	483
Starvation Cap Reductn	0	0	0	1136	0	0
Spillback Cap Reductn	158	0	0	0	0	99
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.47	0.59	1.22	0.57	0.29	0.78

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

35: Shaw Ave & SR 99 NB Off Ramps

Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Group Flow (vph)	143	1160	1310	291	177	283
v/c Ratio	0.70	0.96	0.77	0.32	0.41	0.50
Control Delay	51.8	31.4	19.6	2.4	28.5	9.6
Queue Delay	0.0	8.8	0.0	0.0	0.0	0.0
Total Delay	51.8	40.1	19.6	2.4	28.5	9.6
Queue Length 50th (ft)	65	385	235	0	72	18
Queue Length 95th (ft)	#143	#750	313	35	131	84
Internal Link Dist (ft)		500	2498		599	
Turn Bay Length (ft)	120					
Base Capacity (vph)	212	1267	1793	946	434	566
Starvation Cap Reductn	0	99	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.99	0.73	0.31	0.41	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

36: Shaw Ave & Golden State

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	42	1121	42	416	1262	176	221	428	36	20	333	578
v/c Ratio	0.40	1.02	0.08	1.02	0.69	0.20	1.04	0.40	0.07	0.22	0.52	0.98
Control Delay	57.1	67.8	12.3	89.8	21.2	3.7	117.7	29.9	10.1	51.9	40.5	47.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.1	67.8	12.3	89.8	21.2	3.7	117.7	29.9	10.1	51.9	40.5	47.4
Queue Length 50th (ft)	26	~402	5	~276	330	6	~153	106	0	12	102	145
Queue Length 95th (ft)	61	#531	30	#469	414	41	#300	171	25	37	147	#376
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	106	1097	511	407	1841	899	212	1076	506	89	637	592
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	1.02	0.08	1.02	0.69	0.20	1.04	0.40	0.07	0.22	0.52	0.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	117	1355	83	137	1272	104	195	260	73	267	778	165
v/c Ratio	0.51	0.88	0.15	0.60	0.82	0.19	0.64	0.25	0.14	0.81	0.73	0.28
Control Delay	35.4	28.5	5.3	39.7	25.4	5.0	38.4	17.3	5.7	50.6	24.4	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	28.5	5.3	39.7	25.4	5.0	38.4	17.3	5.7	50.6	24.4	4.8
Queue Length 50th (ft)	21	169	0	25	155	0	36	37	0	51	134	0
Queue Length 95th (ft)	#44	#250	26	#57	#210	29	#77	64	25	#114	#198	37
Internal Link Dist (ft)		3252			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	229	1543	538	229	1543	553	304	1041	517	330	1067	592
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.88	0.15	0.60	0.82	0.19	0.64	0.25	0.14	0.81	0.73	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

38: Shaw Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	270	1625	114	163	1064	67	205	468	436	310	579	454
v/c Ratio	0.79	0.93	0.19	0.83	0.70	0.13	0.70	0.49	0.81	0.90	0.57	0.81
Control Delay	49.1	33.9	6.1	54.9	19.8	7.6	45.4	23.5	30.3	63.4	24.0	28.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.1	33.9	6.1	54.9	19.8	7.6	45.4	23.5	30.3	63.4	24.0	28.5
Queue Length 50th (ft)	59	243	5	27	155	9	45	88	117	69	111	119
Queue Length 95th (ft)	#116	#342	36	m#69	m205	m26	#89	131	#269	#139	160	#272
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	343	1743	606	196	1526	522	294	961	535	343	1011	563
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.93	0.19	0.83	0.70	0.13	0.70	0.49	0.81	0.90	0.57	0.81

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

39: Shaw Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	136	1782	167	177	1203	76	226	612	293	172	477	182
v/c Ratio	0.46	0.93	0.24	0.90	0.63	0.12	0.83	0.66	0.57	0.66	0.52	0.36
Control Delay	28.7	22.7	4.4	79.9	20.0	4.8	60.1	27.4	16.9	45.6	24.8	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	22.7	4.4	79.9	20.0	4.8	60.1	27.4	16.9	45.6	24.8	9.1
Queue Length 50th (ft)	23	296	22	40	156	0	51	124	56	38	92	15
Queue Length 95th (ft)	m26	m328	m23	#95	201	24	#113	177	130	#80	136	60
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	294	1961	705	196	1921	645	273	921	513	262	910	510
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.91	0.24	0.90	0.63	0.12	0.83	0.66	0.57	0.66	0.52	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1690	39	154	565	23	454	163	113
v/c Ratio	1.03	0.05	0.96	0.27	0.09	0.97	1.01	0.10
Control Delay	60.1	12.3	111.3	11.4	36.2	62.5	124.9	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.1	12.3	111.3	11.4	36.2	62.5	124.9	8.7
Queue Length 50th (ft)	~674	10	110	95	13	212	~119	6
Queue Length 95th (ft)	#813	29	#241	126	36	#423	#257	27
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1641	741	161	2091	265	468	161	1112
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.05	0.96	0.27	0.09	0.97	1.01	0.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

41: Ashlan Ave & Golden State

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	388	1251	602	332	252	316	286	203	232
v/c Ratio	0.92	0.75	0.90	0.69	0.70	0.81	0.72	0.57	0.49
Control Delay	62.2	22.6	54.3	19.6	44.8	41.6	33.9	40.6	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.2	22.6	54.3	19.6	44.8	41.6	33.9	40.6	8.5
Queue Length 50th (ft)	214	290	177	52	141	135	107	55	0
Queue Length 95th (ft)	#380	371	#274	148	#248	#290	#228	91	61
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	434	1691	674	485	359	389	395	359	475
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.74	0.89	0.68	0.70	0.81	0.72	0.57	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	607	226	141	96	218	145	171	1272	84	101	1007	502
v/c Ratio	0.89	0.23	0.26	0.44	0.49	0.46	0.45	0.65	0.13	0.48	0.78	0.56
Control Delay	48.7	22.9	5.5	42.7	36.2	11.9	37.2	23.8	5.6	40.4	28.6	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.7	22.9	5.5	42.7	36.2	11.9	37.2	23.8	5.6	40.4	28.6	4.8
Queue Length 50th (ft)	153	46	0	24	54	4	41	200	0	47	237	0
Queue Length 95th (ft)	#243	72	39	47	85	52	72	264	30	95	#331	63
Internal Link Dist (ft)		665			800			120			526	
Turn Bay Length (ft)	330		200	310			330		200	330		200
Base Capacity (vph)	687	1194	628	220	708	426	383	1950	659	214	1292	897
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.19	0.22	0.44	0.31	0.34	0.45	0.65	0.13	0.47	0.78	0.56

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & Bryan

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	322	1624	238	2	1404	149	207	75	3	185	91	323
v/c Ratio	0.96	0.65	0.27	0.03	0.99	0.28	0.66	0.18	0.01	0.77	0.27	0.59
Control Delay	79.3	19.0	3.9	42.0	55.9	8.8	45.6	30.6	19.3	58.9	34.6	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.3	19.0	3.9	42.0	55.9	8.8	45.6	30.6	19.3	58.9	34.6	8.9
Queue Length 50th (ft)	183	230	8	1	291	11	111	35	0	102	45	0
Queue Length 95th (ft)	#348	337	53	8	#397	56	#190	73	7	#199	89	72
Internal Link Dist (ft)		1330			2700			1557			524	
Turn Bay Length (ft)	165		165	165		165	65			65		65
Base Capacity (vph)	334	2509	888	79	1413	528	315	408	350	256	331	547
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.65	0.27	0.03	0.99	0.28	0.66	0.18	0.01	0.72	0.27	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	140	1458	38	91	1311	30	32	23	60	20	75
v/c Ratio	0.79	0.84	0.07	0.40	0.91	0.06	0.14	0.03	0.09	0.09	0.12
Control Delay	60.2	24.8	6.1	32.3	32.2	7.2	27.9	13.3	5.2	27.2	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.2	24.8	6.1	32.3	32.2	7.2	27.9	13.3	5.2	27.2	7.8
Queue Length 50th (ft)	51	182	0	17	166	0	5	5	0	3	4
Queue Length 95th (ft)	#135	#269	17	36	#249	16	17	20	23	12	31
Internal Link Dist (ft)		2700			1876			1081			369
Turn Bay Length (ft)	350		250	250			140				
Base Capacity (vph)	177	1746	568	229	1441	470	229	726	654	229	638
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.84	0.07	0.40	0.91	0.06	0.14	0.03	0.09	0.09	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NER
Lane Group Flow (vph)	1537	27	1402	27
v/c Ratio	0.35	0.10	0.28	0.10
Control Delay	2.4	15.2	0.1	8.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.4	15.2	0.1	8.6
Queue Length 50th (ft)	0	5	0	0
Queue Length 95th (ft)	72	19	0	14
Internal Link Dist (ft)	870		578	
Turn Bay Length (ft)				
Base Capacity (vph)	4330	443	5085	422
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.35	0.06	0.28	0.06

Intersection Summary

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	10	1408	122	438	1305	227	93	402	239	88	30
v/c Ratio	0.05	0.92	0.22	0.89	0.54	0.26	0.38	0.72	0.81	0.17	0.06
Control Delay	31.9	35.6	5.2	53.1	14.4	3.9	35.8	20.1	54.9	21.4	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	35.6	5.2	53.1	14.4	3.9	35.8	20.1	54.9	21.4	8.5
Queue Length 50th (ft)	2	212	0	96	129	6	20	72	53	29	0
Queue Length 95th (ft)	9	#303	34	#175	211	48	41	#183	#109	63	19
Internal Link Dist (ft)		578			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	196	1526	560	490	2427	859	245	559	294	527	469
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.92	0.22	0.89	0.54	0.26	0.38	0.72	0.81	0.17	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	525	1248	176	116	1393	589	193	653	74	623	575	388
v/c Ratio	0.98	0.63	0.25	0.51	0.99	0.85	0.72	0.92	0.21	0.96	0.52	0.57
Control Delay	74.5	24.6	5.5	48.8	54.2	25.2	57.1	55.9	14.2	64.6	27.6	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.5	24.6	5.5	48.8	54.2	25.2	57.1	55.9	14.2	64.6	27.6	11.9
Queue Length 50th (ft)	155	214	7	33	288	130	56	193	9	182	140	51
Queue Length 95th (ft)	#258	264	49	60	#392	#331	#105	#297	45	#290	192	140
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	534	1978	711	229	1413	695	267	708	360	648	1101	676
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.63	0.25	0.51	0.99	0.85	0.72	0.92	0.21	0.96	0.52	0.57

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

11: Herndon Ave & N. Blythe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	2	1938	1	5	2105	76	2	5	76	1	13
v/c Ratio	0.01	0.60	0.00	0.02	0.65	0.07	0.00	0.01	0.14	0.00	0.04
Control Delay	25.0	7.8	4.0	20.6	10.9	2.9	22.5	0.0	23.2	22.0	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.0	7.8	4.0	20.6	10.9	2.9	22.5	0.0	23.2	22.0	13.1
Queue Length 50th (ft)	0	71	0	1	232	6	0	0	13	0	0
Queue Length 95th (ft)	3	211	2	m2	m368	m21	3	0	28	4	13
Internal Link Dist (ft)		2270			2660			994		550	
Turn Bay Length (ft)	220		140	220		140	235		120		120
Base Capacity (vph)	317	3231	1006	322	3234	1033	769	945	766	524	454
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.60	0.00	0.02	0.65	0.07	0.00	0.01	0.10	0.00	0.03

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	64	1627	310	533	1838	72	311	108	462	32	93	66
v/c Ratio	0.53	1.10	0.54	1.09	0.70	0.09	1.05	0.20	0.59	0.37	0.38	0.25
Control Delay	68.0	90.8	22.2	110.2	24.6	10.1	115.6	35.6	6.8	67.2	52.4	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.0	90.8	22.2	110.2	24.6	10.1	115.6	35.6	6.8	67.2	52.4	13.5
Queue Length 50th (ft)	45	~524	93	~467	402	16	~264	67	0	24	67	0
Queue Length 95th (ft)	m83	#602	218	#683	462	41	#444	118	89	59	121	42
Internal Link Dist (ft)		2660			4430			2164			665	
Turn Bay Length (ft)	290		150	310		100	105		75	80		80
Base Capacity (vph)	133	1483	571	487	2618	831	295	528	780	89	248	268
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	1.10	0.54	1.09	0.70	0.09	1.05	0.20	0.59	0.36	0.38	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

13: Herndon Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	249	1957	134	382	2260	445	196	282	289	316	263	387
v/c Ratio	1.00	0.87	0.19	0.81	1.01	0.52	0.95	0.47	0.62	1.02	0.37	0.76
Control Delay	102.8	30.5	13.1	56.8	50.2	9.8	99.6	40.4	14.7	103.2	36.4	25.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.8	30.5	13.1	56.8	50.2	9.8	99.6	40.4	14.7	103.2	36.4	25.0
Queue Length 50th (ft)	~162	405	36	123	~527	68	65	86	27	~111	76	87
Queue Length 95th (ft)	#322	475	74	#190	#653	157	#136	127	109	#197	115	#226
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		190	245		125	160		160
Base Capacity (vph)	248	2254	722	479	2237	849	206	602	469	309	708	509
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.87	0.19	0.80	1.01	0.52	0.95	0.47	0.62	1.02	0.37	0.76

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

14: Herndon Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	113	2316	174	338	3042	351	187	163	525	243	173	183
v/c Ratio	0.99	1.05	0.23	0.99	1.20	0.41	0.63	0.21	1.17	1.17	0.14	0.41
Control Delay	140.1	67.8	10.3	99.2	121.6	13.3	62.7	39.5	130.4	163.6	35.9	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	140.1	67.8	10.3	99.2	121.6	13.3	62.7	39.5	130.4	163.6	35.9	25.7
Queue Length 50th (ft)	45	~716	34	137	~1045	102	73	54	~400	~225	38	70
Queue Length 95th (ft)	#108	#810	81	#234	#1130	175	111	86	#618	#390	60	141
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	114	2204	742	343	2543	854	313	767	448	207	1254	445
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	1.05	0.23	0.99	1.20	0.41	0.60	0.21	1.17	1.17	0.14	0.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

15: Herndon Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1059	1902	73	313	2402	247	191	993	209	352	930	1173
v/c Ratio	1.23	0.79	0.09	0.72	1.35	0.40	1.11	1.02	0.44	1.37	1.21	1.48
Control Delay	154.3	29.9	8.0	60.2	194.0	20.8	153.0	81.5	8.8	230.6	148.2	250.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	154.3	29.9	8.0	60.2	194.0	20.8	153.0	81.5	8.8	230.6	148.2	250.1
Queue Length 50th (ft)	~523	448	9	120	~892	90	~87	~298	0	~185	~463	~1262
Queue Length 95th (ft)	#654	522	37	168	#986	163	#164	#390	65	#282	#595	#1526
Internal Link Dist (ft)		5199			5182			5307			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	858	2409	776	479	1780	611	172	975	472	257	767	792
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.23	0.79	0.09	0.65	1.35	0.40	1.11	1.02	0.44	1.37	1.21	1.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	279	1979	409	205	1770	298	250	693	116	327	912	548
v/c Ratio	0.93	0.97	0.53	0.95	0.93	0.43	0.97	0.64	0.27	0.77	0.68	1.06
Control Delay	75.6	39.2	9.9	91.0	34.2	10.2	89.6	31.8	7.5	47.4	29.6	81.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.6	39.2	9.9	91.0	34.2	10.2	89.6	31.8	7.5	47.4	29.6	81.5
Queue Length 50th (ft)	72	346	54	53	304	44	65	116	0	82	149	~252
Queue Length 95th (ft)	#145	#466	133	#119	#409	106	#138	155	41	#141	193	#443
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	300	2034	778	215	1907	697	257	1086	429	429	1335	516
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.97	0.53	0.95	0.93	0.43	0.97	0.64	0.27	0.76	0.68	1.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

31: Bullard Ave. & N. Palm Ave

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	207	904	190	1078	204	960	182	95	954	143
v/c Ratio	0.96	0.83	0.96	1.02	1.04	0.79	0.31	0.97	0.94	0.29
Control Delay	92.7	36.0	97.8	64.8	115.2	32.3	14.7	128.4	48.8	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.7	36.0	97.8	64.8	115.2	32.3	14.7	128.4	48.8	16.2
Queue Length 50th (ft)	119	245	109	~332	~126	255	44	55	276	35
Queue Length 95th (ft)	#254	#323	#241	#472	#263	331	96	#152	#400	82
Internal Link Dist (ft)		1463		807		3248			5307	
Turn Bay Length (ft)	150		140		120		55	90		70
Base Capacity (vph)	216	1095	197	1058	197	1219	591	98	1022	501
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.83	0.96	1.02	1.04	0.79	0.31	0.97	0.93	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

34: Shaw Ave & SR 99 SB Off Ramps

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1218	578	1649	115	333
v/c Ratio	0.98	0.98	0.64	0.37	0.60
Control Delay	48.7	63.9	7.4	36.4	9.0
Queue Delay	0.0	0.0	0.6	0.0	0.0
Total Delay	48.7	63.9	8.0	36.4	9.0
Queue Length 50th (ft)	341	322	203	58	0
Queue Length 95th (ft)	#492	#538	260	109	73
Internal Link Dist (ft)	8376		500	619	
Turn Bay Length (ft)		110			
Base Capacity (vph)	1248	590	2595	315	555
Starvation Cap Reductn	0	0	500	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.98	0.98	0.79	0.37	0.60

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

35: Shaw Ave & SR 99 NB Off Ramps

Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Group Flow (vph)	71	1220	1848	404	361	346
v/c Ratio	0.76	0.54	0.94	0.38	0.81	0.72
Control Delay	82.0	8.3	27.5	2.1	43.3	28.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	82.0	8.3	27.5	2.1	43.3	28.3
Queue Length 50th (ft)	33	136	396	0	161	103
Queue Length 95th (ft)	#101	181	#590	36	#304	#227
Internal Link Dist (ft)		500	2498		599	
Turn Bay Length (ft)	120					
Base Capacity (vph)	94	2312	1966	1059	447	480
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	2
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.53	0.94	0.38	0.81	0.72

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

36: Shaw Ave & Golden State

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	51	1478	60	502	1966	298	216	302	42	51	673	959
v/c Ratio	0.86	1.39	0.12	1.54	1.23	0.38	1.46	0.26	0.08	0.44	0.63	1.38
Control Delay	140.9	215.9	19.5	283.2	130.5	3.9	278.8	30.9	9.2	65.1	39.5	202.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	140.9	215.9	19.5	283.2	130.5	3.9	278.8	30.9	9.2	65.1	39.5	202.1
Queue Length 50th (ft)	40	~803	18	~538	~1019	53	~229	92	0	38	236	~806
Queue Length 95th (ft)	#120	#942	52	m#569	m#1002	m59	#386	131	27	81	302	#1061
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	59	1062	494	325	1593	787	148	1178	555	133	1062	697
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	1.39	0.12	1.54	1.23	0.38	1.46	0.26	0.08	0.38	0.63	1.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	332	1916	172	234	2040	286	322	889	172	483	471	195
v/c Ratio	0.97	0.92	0.25	0.91	1.05	0.42	0.73	1.04	0.39	0.99	0.52	0.38
Control Delay	80.9	22.7	5.5	92.5	70.3	18.6	60.5	86.0	24.5	91.0	41.3	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.9	22.7	5.5	92.5	70.3	18.6	60.5	86.0	24.5	91.0	41.3	12.9
Queue Length 50th (ft)	141	464	15	94	~628	97	124	~391	62	195	167	28
Queue Length 95th (ft)	m101	m175	m5	#171	#724	174	173	#521	129	#307	224	94
Internal Link Dist (ft)		3252			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	343	2076	692	257	1949	673	486	855	438	486	903	515
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.92	0.25	0.91	1.05	0.42	0.66	1.04	0.39	0.99	0.52	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

38: Shaw Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	665	1648	252	351	1726	196	492	784	213	252	512	480
v/c Ratio	1.02	0.83	0.35	0.81	1.03	0.33	1.02	0.92	0.45	0.92	0.80	0.93
Control Delay	81.4	31.7	9.6	57.5	63.4	11.8	90.4	55.0	16.8	83.4	50.2	42.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.4	31.7	9.6	57.5	63.4	11.8	90.4	55.0	16.8	83.4	50.2	42.6
Queue Length 50th (ft)	~226	341	38	113	~433	34	~173	257	44	83	166	131
Queue Length 95th (ft)	#345	405	96	#177	#529	89	#274	#371	112	#158	#241	#331
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	652	1997	718	446	1678	603	481	849	476	275	637	518
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.83	0.35	0.79	1.03	0.33	1.02	0.92	0.45	0.92	0.80	0.93

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

39: Shaw Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	249	1607	145	305	1765	145	265	401	148	157	558	192
v/c Ratio	0.91	0.91	0.23	0.83	0.93	0.22	0.83	0.47	0.30	0.50	0.66	0.38
Control Delay	71.7	32.9	5.5	54.1	33.1	6.9	56.6	26.5	6.3	38.2	30.0	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.7	32.9	5.5	54.1	33.1	6.9	56.6	26.5	6.3	38.2	30.0	7.7
Queue Length 50th (ft)	60	257	5	73	282	12	63	84	0	36	123	7
Queue Length 95th (ft)	#126	#353	40	#137	#387	48	#125	125	42	64	175	55
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	275	1763	634	366	1898	656	320	855	494	320	849	511
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.91	0.23	0.83	0.93	0.22	0.83	0.47	0.30	0.49	0.66	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1183	75	432	1373	58	555	174	215
v/c Ratio	1.01	0.14	1.02	0.64	0.30	0.91	0.98	0.20
Control Delay	63.8	15.6	87.0	14.1	41.1	32.0	110.3	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	15.6	87.0	14.1	41.1	32.0	110.3	19.5
Queue Length 50th (ft)	~404	19	~284	271	33	92	113	39
Queue Length 95th (ft)	#552	51	#481	338	72	#305	#248	67
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1168	544	425	2159	195	610	177	1057
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.14	1.02	0.64	0.30	0.91	0.98	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

41: Ashlan Ave & Golden State

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	255	1266	1040	759	543	593	530	227	424
v/c Ratio	1.23	0.83	1.04	1.20	0.97	1.13	1.00	1.13	1.08
Control Delay	183.2	35.7	80.6	131.2	71.3	115.0	75.9	149.7	93.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	183.2	35.7	80.6	131.2	71.3	115.0	75.9	149.7	93.3
Queue Length 50th (ft)	~245	446	~456	~565	433	~560	403	~105	~216
Queue Length 95th (ft)	#412	542	#591	#806	#674	#808	#652	#188	#421
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	207	1534	1003	632	560	525	531	201	393
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.23	0.83	1.04	1.20	0.97	1.13	1.00	1.13	1.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2017 BASELINE TRAFFIC CONDITION

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	103	212	149	23	169	49	621	155	74	371	486
v/c Ratio	0.30	0.24	0.30	0.08	0.34	0.13	0.26	0.19	0.32	0.22	0.48
Control Delay	27.7	18.5	5.9	26.2	18.5	24.8	13.0	4.0	26.9	12.0	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	18.5	5.9	26.2	18.5	24.8	13.0	4.0	26.9	12.0	3.6
Queue Length 50th (ft)	17	28	0	4	21	8	58	0	25	46	0
Queue Length 95th (ft)	39	61	40	13	42	21	92	35	56	80	55
Internal Link Dist (ft)		665			800		120			583	
Turn Bay Length (ft)	200		250	200		200		80	200		
Base Capacity (vph)	349	1029	566	301	939	364	2361	818	231	1720	1019
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.21	0.26	0.08	0.18	0.13	0.26	0.19	0.32	0.22	0.48

Intersection Summary

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	279	212	297	57	643	207	304	58	149	197	67	279
v/c Ratio	0.87	0.12	0.40	0.44	0.68	0.45	0.78	0.12	0.28	0.67	0.17	0.50
Control Delay	59.3	19.0	4.6	46.2	34.2	7.8	46.6	25.7	6.5	42.8	27.1	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.3	19.0	4.6	46.2	34.2	7.8	46.6	25.7	6.5	42.8	27.1	7.2
Queue Length 50th (ft)	136	27	0	28	108	0	148	23	0	93	28	0
Queue Length 95th (ft)	#265	44	53	64	146	53	#284	54	45	156	60	60
Internal Link Dist (ft)		1281			2700			1557			524	
Turn Bay Length (ft)	165		165	165		165	65			65		65
Base Capacity (vph)	332	1740	737	133	1017	482	390	498	533	354	396	556
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.12	0.40	0.43	0.63	0.43	0.78	0.12	0.28	0.56	0.17	0.50

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	413	16	170	675	50	309	54	304
v/c Ratio	0.31	0.38	0.05	0.50	0.54	0.17	0.39	0.18	0.38
Control Delay	30.3	20.9	9.3	31.1	21.4	27.2	14.6	27.3	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.3	20.9	9.3	31.1	21.4	27.2	14.6	27.3	16.9
Queue Length 50th (ft)	19	46	0	30	80	8	75	9	91
Queue Length 95th (ft)	48	66	12	56	106	23	144	24	158
Internal Link Dist (ft)		2700			1876		1081		369
Turn Bay Length (ft)	350		250	250		140		100	
Base Capacity (vph)	177	1356	434	343	1405	303	787	304	803
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.30	0.04	0.50	0.48	0.17	0.39	0.18	0.38

Intersection Summary

Lane Group	EBT	WBL	WBT	NER
Lane Group Flow (vph)	586	864	826	989
v/c Ratio	0.35	0.53	0.16	0.52
Control Delay	11.7	8.5	0.1	5.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.7	8.5	0.1	5.3
Queue Length 50th (ft)	41	47	0	26
Queue Length 95th (ft)	56	98	0	60
Internal Link Dist (ft)	870		578	
Turn Bay Length (ft)				
Base Capacity (vph)	2110	1681	5085	1952
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.28	0.51	0.16	0.51

Intersection Summary

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	7	1512	58	86	1566	134	78	313	139	124	26
v/c Ratio	0.03	0.86	0.10	0.38	0.72	0.18	0.32	0.50	0.56	0.20	0.05
Control Delay	26.5	25.4	5.2	31.8	18.1	5.1	30.4	12.3	37.5	17.6	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	25.4	5.2	31.8	18.1	5.1	30.4	12.3	37.5	17.6	7.9
Queue Length 50th (ft)	1	186	0	15	150	5	14	42	25	35	0
Queue Length 95th (ft)	6	#273	20	35	#289	39	32	109	#58	72	15
Internal Link Dist (ft)		578			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	229	1758	585	229	2165	734	246	620	248	623	546
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.86	0.10	0.38	0.72	0.18	0.32	0.50	0.56	0.20	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	316	1598	3	107	1198	172	165	200	164	323	299	408
v/c Ratio	0.85	0.90	0.01	0.51	0.85	0.31	0.62	0.22	0.31	0.87	0.29	0.70
Control Delay	52.6	30.5	11.0	38.4	29.7	5.2	40.9	19.6	5.5	55.0	18.7	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.6	30.5	11.0	38.4	29.7	5.2	40.9	19.6	5.5	55.0	18.7	18.9
Queue Length 50th (ft)	64	225	0	21	163	0	33	32	0	66	47	78
Queue Length 95th (ft)	#129	#328	5	44	#234	40	#69	56	40	#132	77	#175
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	370	1768	552	211	1408	563	264	926	535	370	1034	587
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.90	0.01	0.51	0.85	0.31	0.63	0.22	0.31	0.87	0.29	0.70

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

11: Herndon Ave & N. Blythe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL
Lane Group Flow (vph)	18	2076	1	2	1484	54	1	54
v/c Ratio	0.08	0.71	0.00	0.01	0.53	0.06	0.00	0.30
Control Delay	39.9	15.6	7.0	39.5	14.0	4.5	29.0	46.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.9	15.6	7.0	39.5	14.0	4.5	29.0	46.0
Queue Length 50th (ft)	5	245	0	0	146	2	0	15
Queue Length 95th (ft)	15	397	2	4	247	20	2	34
Internal Link Dist (ft)		2270			2660		994	
Turn Bay Length (ft)	220		140	220		140		120
Base Capacity (vph)	227	2924	911	213	2797	891	1171	181
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.71	0.00	0.01	0.53	0.06	0.00	0.30

Intersection Summary

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	99	2048	155	348	1333	27	152	93	364	90	107	67
v/c Ratio	0.56	1.03	0.23	1.04	0.52	0.03	0.96	0.24	0.65	0.66	0.34	0.21
Control Delay	54.7	60.1	10.6	99.7	18.7	8.4	107.9	37.1	14.6	68.3	40.0	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	60.1	10.6	99.7	18.7	8.4	107.9	37.1	14.6	68.3	40.0	10.9
Queue Length 50th (ft)	61	~516	28	~240	215	3	98	52	37	57	61	0
Queue Length 95th (ft)	112	#613	71	#415	265	18	#223	98	136	#127	112	37
Internal Link Dist (ft)		2660			4430			2164			665	
Turn Bay Length (ft)	290		150	310		100	105		75	80		80
Base Capacity (vph)	212	1983	669	336	2544	801	159	380	559	142	317	325
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	1.03	0.23	1.04	0.52	0.03	0.96	0.24	0.65	0.63	0.34	0.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

13: Herndon Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	187	2307	227	222	1485	236	142	180	241	170	188	167
v/c Ratio	0.57	0.93	0.28	0.83	0.62	0.30	0.74	0.25	0.56	0.89	0.27	0.38
Control Delay	45.9	29.7	10.7	67.3	19.3	9.5	66.0	31.5	19.0	85.9	31.6	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.9	29.7	10.7	67.3	19.3	9.5	66.0	31.5	19.0	85.9	31.6	9.1
Queue Length 50th (ft)	53	430	51	65	224	44	41	45	47	50	47	5
Queue Length 95th (ft)	87	#527	97	#126	272	92	#88	75	123	#110	78	57
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		50	245		125	160		160
Base Capacity (vph)	343	2486	806	267	2392	797	191	708	432	191	708	441
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.93	0.28	0.83	0.62	0.30	0.74	0.25	0.56	0.89	0.27	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

14: Herndon Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	62	2507	167	54	1828	250	85	123	152	277	272	47
v/c Ratio	0.36	0.99	0.20	0.39	0.74	0.29	0.49	0.20	0.44	1.04	0.19	0.10
Control Delay	52.1	42.8	6.1	55.5	23.2	6.6	56.4	36.7	21.4	109.3	27.9	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.1	42.8	6.1	55.5	23.2	6.6	56.4	36.7	21.4	109.3	27.9	8.9
Queue Length 50th (ft)	20	~628	18	17	341	29	27	35	36	~192	49	0
Queue Length 95th (ft)	41	#723	54	38	402	75	52	62	96	#353	72	28
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	172	2522	842	137	2482	858	172	602	342	266	1465	490
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.99	0.20	0.39	0.74	0.29	0.49	0.20	0.44	1.04	0.19	0.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

15: Herndon Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	823	1966	108	257	1159	367	139	1064	293	161	1126	755
v/c Ratio	1.03	1.02	0.17	0.96	1.03	0.86	0.91	0.70	0.48	0.70	0.99	0.79
Control Delay	74.4	55.5	7.2	89.8	69.2	45.0	97.1	30.8	12.1	58.7	55.4	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	55.5	7.2	89.8	69.2	45.0	97.1	30.8	12.1	58.7	55.4	21.6
Queue Length 50th (ft)	~260	~440	9	76	~260	150	41	194	43	47	332	299
Queue Length 95th (ft)	#374	#535	41	#153	#349	#306	#98	243	115	#92	#476	477
Internal Link Dist (ft)		5199			5182			5342			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	801	1921	650	267	1130	429	153	1526	609	229	1140	951
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	1.02	0.17	0.96	1.03	0.86	0.91	0.70	0.48	0.70	0.99	0.79

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	324	1734	145	103	1545	500	24	312	102	192	747	173
v/c Ratio	0.83	0.83	0.20	0.53	0.92	0.68	0.12	0.24	0.21	0.78	0.43	0.26
Control Delay	50.0	24.0	3.9	42.2	33.9	12.3	32.8	21.2	6.2	56.0	19.7	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	24.0	3.9	42.2	33.9	12.3	32.8	21.2	6.2	56.0	19.7	4.9
Queue Length 50th (ft)	71	247	1	22	231	56	5	38	0	42	82	0
Queue Length 95th (ft)	#135	#322	32	#46	#326	159	16	60	33	#93	135	41
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	392	2077	730	196	1671	739	196	1308	483	245	1729	653
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.83	0.20	0.53	0.92	0.68	0.12	0.24	0.21	0.78	0.43	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

20: Hayes Ave. & Veterans Ave.

Lane Group	SER	NEL	NET	SWT
Lane Group Flow (vph)	296	252	989	864
v/c Ratio	0.43	0.58	0.28	0.42
Control Delay	2.0	20.4	2.7	11.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.0	20.4	2.7	11.9
Queue Length 50th (ft)	0	56	23	60
Queue Length 95th (ft)	0	108	32	103
Internal Link Dist (ft)			1398	1849
Turn Bay Length (ft)		150		
Base Capacity (vph)	854	555	3528	2072
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.35	0.45	0.28	0.42

Intersection Summary

21: N. Bryan Ave. & Veterans Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	17	73	137	183	58	13	90	1397	152	21	1358	5
v/c Ratio	0.07	0.15	0.42	0.53	0.06	0.03	0.35	0.52	0.17	0.09	0.57	0.01
Control Delay	25.1	19.6	8.8	27.7	14.7	9.4	26.9	10.2	2.9	25.3	13.0	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	19.6	8.8	27.7	14.7	9.4	26.9	10.2	2.9	25.3	13.0	7.6
Queue Length 50th (ft)	2	10	0	27	6	0	13	85	0	3	119	0
Queue Length 95th (ft)	10	24	37	#57	20	11	32	189	29	11	182	6
Internal Link Dist (ft)		2411			677			1507			1398	
Turn Bay Length (ft)	150		150	150		150	150		150	150		150
Base Capacity (vph)	240	925	515	344	1104	503	254	2693	910	240	2372	741
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.08	0.27	0.53	0.05	0.03	0.35	0.52	0.17	0.09	0.57	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

22: N. Bryan Ave. & W. Sierra Ave.

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	76	171	109	5	10	145
v/c Ratio	0.26	0.15	0.15	0.02	0.01	0.16
Control Delay	13.2	4.7	9.2	7.4	9.3	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	4.7	9.2	7.4	9.3	3.1
Queue Length 50th (ft)	4	4	3	0	1	0
Queue Length 95th (ft)	33	14	20	5	7	23
Internal Link Dist (ft)		677	2766		701	
Turn Bay Length (ft)	150			150	150	
Base Capacity (vph)	300	1894	1336	601	1170	1095
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.09	0.08	0.01	0.01	0.13

Intersection Summary

24: Veterans Ave. & Golden State

Lane Group	NBL	NBT	NBR	SBL	SBT	SEL	SET	NWL	NWT
Lane Group Flow (vph)	18	1583	667	77	1876	2	22	165	168
v/c Ratio	0.18	0.72	0.63	0.72	0.58	0.02	0.05	0.34	0.34
Control Delay	35.8	19.2	4.6	68.5	13.2	31.5	0.2	24.4	20.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.8	19.2	4.6	68.5	13.2	31.5	0.2	24.4	20.6
Queue Length 50th (ft)	7	181	0	29	123	1	0	47	38
Queue Length 95th (ft)	26	#295	65	#103	254	7	0	#170	#153
Internal Link Dist (ft)		1314			1507		858		751
Turn Bay Length (ft)	380		250	320		310		300	
Base Capacity (vph)	99	2187	1061	107	3253	94	488	486	492
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.72	0.63	0.72	0.58	0.02	0.05	0.34	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

26: Veterans Ave. & SR-99 NB Ramps

Lane Group	NBT	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	1884	1787	108	245	383
v/c Ratio	0.70	0.53	0.07	0.26	0.50
Control Delay	9.7	7.5	0.1	11.7	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	7.5	0.1	11.7	14.1
Queue Length 50th (ft)	102	67	0	21	39
Queue Length 95th (ft)	188	119	0	40	69
Internal Link Dist (ft)	222	1314			
Turn Bay Length (ft)			380		
Base Capacity (vph)	2692	3392	1583	1209	985
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.70	0.53	0.07	0.20	0.39

Intersection Summary

27: Veterans Ave. & SR 99 SB Ramps

Lane Group	NBT	NBR	SBT	SEL	SER
Lane Group Flow (vph)	2035	499	1288	48	79
v/c Ratio	0.51	0.32	0.32	0.21	0.34
Control Delay	3.9	0.5	2.9	16.7	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	3.9	0.5	2.9	16.7	12.8
Queue Length 50th (ft)	73	0	37	13	11
Queue Length 95th (ft)	133	0	69	29	33
Internal Link Dist (ft)	987		279		
Turn Bay Length (ft)		400			
Base Capacity (vph)	4021	1583	4021	422	407
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.51	0.32	0.32	0.11	0.19

Intersection Summary

31: Bullard Ave. & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	209	972	72	235	792	47	692	60	60	633	213
v/c Ratio	0.77	1.04	0.09	1.00	0.47	0.81	0.98	0.16	1.02	0.84	0.42
Control Delay	67.7	71.6	6.9	109.9	22.4	129.4	76.7	11.0	179.5	56.9	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.7	71.6	6.9	109.9	22.4	129.4	76.7	11.0	179.5	56.9	8.1
Queue Length 50th (ft)	157	~816	9	185	209	37	283	0	~48	253	0
Queue Length 95th (ft)	233	#1067	33	#351	283	#110	#408	37	#141	#356	65
Internal Link Dist (ft)		2564			1707		4355			5342	
Turn Bay Length (ft)											
Base Capacity (vph)	327	932	816	236	1686	58	708	365	59	755	505
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	1.04	0.09	1.00	0.47	0.81	0.98	0.16	1.02	0.84	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

32: Bullard Ave. & Veterans Ave.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	237	24	9	15	723	9	1573	339	872	157
v/c Ratio	0.46	0.07	0.03	0.10	0.87	0.09	0.78	0.79	0.25	0.06
Control Delay	29.3	21.5	11.8	34.0	32.0	36.8	22.6	40.8	6.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	21.5	11.8	34.0	32.0	36.8	22.6	40.8	6.0	0.5
Queue Length 50th (ft)	43	8	0	5	133	3	183	121	31	0
Queue Length 95th (ft)	87	24	10	25	219	19	#380	#329	125	7
Internal Link Dist (ft)		933		342			1285		987	
Turn Bay Length (ft)	150		150		150	150		150		150
Base Capacity (vph)	763	636	546	355	835	97	2011	431	3457	2635
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.04	0.02	0.04	0.87	0.09	0.78	0.79	0.25	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

34: Shaw Ave & SR 99 SB Off Ramps

Lane Group	EBT	EBR	WBT	SBL	SBR
Lane Group Flow (vph)	734	101	773	341	151
v/c Ratio	0.58	0.06	0.61	0.43	0.20
Control Delay	12.1	0.1	14.5	10.8	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	0.1	14.5	10.8	5.1
Queue Length 50th (ft)	62	0	79	52	9
Queue Length 95th (ft)	97	0	m104	104	33
Internal Link Dist (ft)	8376		500		
Turn Bay Length (ft)		150			
Base Capacity (vph)	1428	1583	1428	791	754
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.51	0.06	0.54	0.43	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

35: Shaw Ave & SR 99 NB Off Ramps

Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	670	26	984	482	621	129
v/c Ratio	0.51	0.02	0.75	0.30	0.81	0.17
Control Delay	10.9	0.0	15.0	0.5	23.9	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.9	0.0	15.0	0.5	23.9	3.2
Queue Length 50th (ft)	39	0	90	0	120	1
Queue Length 95th (ft)	105	m0	140	0	#278	22
Internal Link Dist (ft)	500		2498			
Turn Bay Length (ft)				150		
Base Capacity (vph)	1416	1583	1416	1583	762	750
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.02	0.69	0.30	0.81	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	5	710	43	383	880	141	565	375	3	16	262	629
v/c Ratio	0.08	1.09	0.13	1.08	0.62	0.20	1.09	0.22	0.00	0.22	0.39	1.09
Control Delay	59.4	109.5	17.6	110.9	35.7	12.1	108.4	18.8	12.3	62.7	44.3	87.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	109.5	17.6	110.9	35.7	12.1	108.4	18.8	12.3	62.7	44.3	87.5
Queue Length 50th (ft)	4	~327	5	~342	317	32	~495	79	0	12	94	~326
Queue Length 95th (ft)	18	#450	38	#542	397	m69	#714	127	6	37	136	#557
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	59	649	319	354	1428	711	516	1722	772	74	678	575
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	1.09	0.13	1.08	0.62	0.20	1.09	0.22	0.00	0.22	0.39	1.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	100	1407	126	122	1089	112	186	173	96	123	834	141
v/c Ratio	0.44	0.92	0.22	0.53	0.71	0.20	0.71	0.14	0.16	0.50	0.75	0.24
Control Delay	29.8	28.2	5.2	36.2	21.7	4.9	46.2	15.5	5.0	34.6	24.2	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.8	28.2	5.2	36.2	21.7	4.9	46.2	15.5	5.0	34.6	24.2	4.6
Queue Length 50th (ft)	25	249	11	22	127	0	35	23	0	22	143	0
Queue Length 95th (ft)	m22	m223	m8	#47	169	30	#84	44	28	#49	#211	33
Internal Link Dist (ft)		3260			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	229	1534	565	229	1534	556	262	1245	619	247	1116	596
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.92	0.22	0.53	0.71	0.20	0.71	0.14	0.16	0.50	0.75	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

38: Shaw Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	85	1880	103	148	971	47	198	458	196	254	442	504
v/c Ratio	0.37	0.96	0.16	0.81	0.48	0.07	0.86	0.51	0.40	0.79	0.45	0.92
Control Delay	38.4	35.8	6.7	68.6	18.4	5.5	70.2	26.4	12.4	53.1	24.0	43.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	35.8	6.7	68.6	18.4	5.5	70.2	26.4	12.4	53.1	24.0	43.9
Queue Length 50th (ft)	20	303	8	36	125	0	47	96	27	60	88	167
Queue Length 95th (ft)	41	#417	37	#84	163	20	#105	140	80	#118	130	#354
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	229	1966	658	183	2020	657	229	897	492	320	991	548
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.96	0.16	0.81	0.48	0.07	0.86	0.51	0.40	0.79	0.45	0.92

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	121	1800	148	161	1236	50	212	502	391	161	448	7
v/c Ratio	0.49	0.92	0.21	0.82	0.61	0.08	0.87	0.52	0.74	0.82	0.49	0.02
Control Delay	38.6	29.7	4.5	66.5	19.0	5.2	66.5	24.0	25.6	66.5	24.3	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	29.7	4.5	66.5	19.0	5.2	66.5	24.0	25.6	66.5	24.3	12.2
Queue Length 50th (ft)	26	262	3	36	157	0	47	96	100	36	86	0
Queue Length 95th (ft)	51	#366	36	#86	203	19	#105	141	#229	#86	128	9
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	245	1961	694	196	2020	659	245	961	526	196	910	412
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.92	0.21	0.82	0.61	0.08	0.87	0.52	0.74	0.82	0.49	0.02

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1351	33	126	647	32	386	208	496
v/c Ratio	0.94	0.05	0.77	0.34	0.33	0.87	0.86	0.47
Control Delay	38.9	11.4	71.2	11.9	50.3	37.7	70.7	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	11.4	71.2	11.9	50.3	37.7	70.7	25.6
Queue Length 50th (ft)	383	6	72	104	18	104	118	116
Queue Length 95th (ft)	#536	24	#168	140	47	#254	#244	165
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1462	662	164	1947	98	478	246	1059
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.05	0.77	0.33	0.33	0.81	0.85	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

41: Ashlan Ave & Golden State

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	380	1054	554	233	213	251	265	207	273
v/c Ratio	1.06	0.67	0.81	0.50	0.63	0.69	0.66	0.48	0.51
Control Delay	99.7	19.9	41.1	10.9	38.6	32.5	24.0	32.6	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.7	19.9	41.1	10.9	38.6	32.5	24.0	32.6	7.5
Queue Length 50th (ft)	~214	208	139	15	103	91	65	47	0
Queue Length 95th (ft)	#379	275	#210	75	#178	#201	151	80	60
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	357	1593	708	474	339	363	404	429	537
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.66	0.78	0.49	0.63	0.69	0.66	0.48	0.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	328	193	121	24	252	87	434	174	51	371	280
v/c Ratio	0.59	0.18	0.22	0.08	0.48	0.22	0.22	0.24	0.24	0.30	0.38
Control Delay	29.3	16.9	5.6	26.1	16.9	24.8	15.1	4.5	26.0	16.7	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	16.9	5.6	26.1	16.9	24.8	15.1	4.5	26.0	16.7	4.4
Queue Length 50th (ft)	55	23	0	4	26	14	43	0	17	55	0
Queue Length 95th (ft)	#109	52	34	13	53	31	69	39	43	90	48
Internal Link Dist (ft)		665			800		120			583	
Turn Bay Length (ft)	200		250	200		200		80	200		
Base Capacity (vph)	553	1228	628	307	961	403	1951	715	213	1252	741
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.16	0.19	0.08	0.26	0.22	0.22	0.24	0.24	0.30	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	280	362	191	2	250	47	170	96	185	91	274
v/c Ratio	1.08	0.24	0.32	0.02	0.42	0.21	0.31	0.15	0.60	0.23	0.50
Control Delay	112.2	20.8	5.4	34.0	32.6	12.0	22.3	20.0	36.3	26.3	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	112.2	20.8	5.4	34.0	32.6	12.0	22.3	20.0	36.3	26.3	7.0
Queue Length 50th (ft)	~148	45	0	1	40	0	60	30	81	35	0
Queue Length 95th (ft)	#290	75	48	7	61	28	114	73	130	74	58
Internal Link Dist (ft)		1281			2700			1557		524	
Turn Bay Length (ft)	165		165	165		165	65		65		65
Base Capacity (vph)	260	1592	627	94	1085	375	547	651	371	397	553
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.23	0.30	0.02	0.23	0.13	0.31	0.15	0.50	0.23	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	457	45	95	374	34	323	54	255
v/c Ratio	0.24	0.51	0.14	0.33	0.34	0.10	0.38	0.15	0.27
Control Delay	29.2	24.0	8.2	29.4	20.5	25.1	14.6	25.4	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	24.0	8.2	29.4	20.5	25.1	14.6	25.4	13.1
Queue Length 50th (ft)	9	56	0	17	43	6	79	9	44
Queue Length 95th (ft)	24	77	21	36	63	17	158	23	129
Internal Link Dist (ft)		2700			1876		1081		369
Turn Bay Length (ft)	350		250	250		140		100	
Base Capacity (vph)	229	1356	455	286	1465	340	849	354	930
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.34	0.10	0.33	0.26	0.10	0.38	0.15	0.27

Intersection Summary

Lane Group	EBT	WBL	WBT	NER
Lane Group Flow (vph)	500	1075	461	927
v/c Ratio	0.36	0.60	0.09	0.44
Control Delay	12.9	8.2	0.0	3.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.9	8.2	0.0	3.2
Queue Length 50th (ft)	35	60	0	16
Queue Length 95th (ft)	51	119	0	41
Internal Link Dist (ft)	870		578	
Turn Bay Length (ft)				
Base Capacity (vph)	2034	1799	5085	2123
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.25	0.60	0.09	0.44

Intersection Summary

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	9	1343	75	275	1439	158	71	350	196	176	26
v/c Ratio	0.04	0.93	0.15	0.80	0.67	0.21	0.31	0.65	0.86	0.28	0.05
Control Delay	26.6	34.8	5.7	46.6	17.3	4.9	30.5	21.3	63.4	17.6	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	34.8	5.7	46.6	17.3	4.9	30.5	21.3	63.4	17.6	7.5
Queue Length 50th (ft)	1	172	0	51	137	5	12	86	37	50	0
Queue Length 95th (ft)	7	#258	25	#106	#263	42	29	165	#89	96	15
Internal Link Dist (ft)		578			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	229	1441	502	343	2152	746	229	542	229	627	550
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.93	0.15	0.80	0.67	0.21	0.31	0.65	0.86	0.28	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	437	1298	58	202	1552	248	25	302	110	280	293	300
v/c Ratio	0.85	0.70	0.09	0.55	0.94	0.39	0.15	0.38	0.25	0.82	0.25	0.41
Control Delay	50.3	24.0	6.0	39.7	38.9	7.6	38.4	27.9	7.2	55.7	21.0	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	24.0	6.0	39.7	38.9	7.6	38.4	27.9	7.2	55.7	21.0	5.0
Queue Length 50th (ft)	111	199	1	50	272	19	6	67	0	72	51	0
Queue Length 95th (ft)	#187	249	24	82	#372	72	18	104	38	#134	94	56
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	515	1867	616	386	1653	644	172	796	441	343	1185	730
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.70	0.09	0.52	0.94	0.39	0.15	0.38	0.25	0.82	0.25	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

11: Herndon Ave & N. Blythe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	7	1678	1	4	1998	65	2	4	65	1	23
v/c Ratio	0.03	0.60	0.00	0.02	0.72	0.07	0.01	0.00	0.31	0.00	0.06
Control Delay	39.7	15.1	8.0	39.8	17.3	5.1	39.5	0.0	44.8	29.0	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.7	15.1	8.0	39.8	17.3	5.1	39.5	0.0	44.8	29.0	12.8
Queue Length 50th (ft)	2	179	0	1	235	5	0	0	18	1	0
Queue Length 95th (ft)	8	303	3	6	397	27	4	0	39	5	20
Internal Link Dist (ft)		2270			2660			994		634	
Turn Bay Length (ft)	220		140	220		140	235		120		120
Base Capacity (vph)	217	2776	865	215	2774	882	610	1084	211	441	392
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.60	0.00	0.02	0.72	0.07	0.00	0.00	0.31	0.00	0.06

Intersection Summary

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	88	1482	251	451	1777	83	403	124	391	33	97	91
v/c Ratio	0.69	1.06	0.47	1.05	0.79	0.11	1.05	0.20	0.50	0.38	0.39	0.31
Control Delay	81.2	83.7	19.6	102.5	31.7	12.7	105.2	31.1	5.5	67.8	52.8	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.2	83.7	19.6	102.5	31.7	12.7	105.2	31.1	5.5	67.8	52.8	12.5
Queue Length 50th (ft)	68	~462	72	~382	423	21	~341	72	0	25	70	0
Queue Length 95th (ft)	#145	#558	153	#587	487	53	#539	123	73	60	125	48
Internal Link Dist (ft)		2660			4430			2164			665	
Turn Bay Length (ft)	290		150	310		100	105		75	80		80
Base Capacity (vph)	133	1398	532	428	2261	723	384	621	789	89	248	290
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	1.06	0.47	1.05	0.79	0.11	1.05	0.20	0.50	0.37	0.39	0.31

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

13: Herndon Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	353	1621	135	233	2148	363	178	278	195	266	320	370
v/c Ratio	0.93	0.74	0.19	0.60	0.97	0.49	0.78	0.42	0.43	0.87	0.43	0.74
Control Delay	72.1	24.1	11.4	25.0	49.4	27.8	56.3	16.7	7.1	69.3	32.9	25.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.1	24.1	11.4	25.0	49.4	27.8	56.3	16.7	7.1	69.3	32.9	25.0
Queue Length 50th (ft)	104	278	30	55	489	188	52	54	25	78	83	85
Queue Length 95th (ft)	#186	336	66	m64	m#549	m209	m#70	m71	m44	#147	124	#215
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		50	245		125	160		160
Base Capacity (vph)	381	2191	709	420	2204	742	229	668	457	305	747	497
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.74	0.19	0.55	0.97	0.49	0.78	0.42	0.43	0.87	0.43	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

14: Herndon Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	96	1746	220	182	2410	259	105	260	147	166	268	146
v/c Ratio	0.63	0.79	0.27	0.55	0.94	0.30	0.46	0.39	0.37	0.94	0.22	0.31
Control Delay	44.5	34.6	12.2	45.5	30.1	6.6	47.4	34.0	11.1	96.0	28.6	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	34.6	12.2	45.5	30.1	6.6	47.4	34.0	11.1	96.0	28.6	12.3
Queue Length 50th (ft)	27	390	51	51	466	32	30	68	9	95	46	19
Queue Length 95th (ft)	m35	444	m89	85	#606	76	56	105	60	#217	69	69
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	153	2224	815	343	2576	877	229	668	402	177	1243	466
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.79	0.27	0.53	0.94	0.30	0.46	0.39	0.37	0.94	0.22	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

15: Herndon Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	890	1141	88	187	2011	175	182	1198	48	289	1401	854
v/c Ratio	1.35	0.54	0.12	0.63	1.28	0.33	1.27	0.86	0.10	0.92	1.22	0.98
Control Delay	206.6	27.9	5.0	62.7	167.7	20.6	211.7	48.5	9.7	87.8	142.4	53.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	206.6	27.9	5.0	62.7	167.7	20.6	211.7	48.5	9.7	87.8	142.4	53.4
Queue Length 50th (ft)	~465	243	0	73	~724	60	~91	323	0	116	~700	619
Queue Length 95th (ft)	#593	289	32	111	#820	122	#168	382	30	#200	#838	#918
Internal Link Dist (ft)		5199			5182			5342			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	658	2102	706	315	1568	537	143	1398	470	315	1150	871
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.35	0.54	0.12	0.59	1.28	0.33	1.27	0.86	0.10	0.92	1.22	0.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	130	1217	354	498	1599	351	167	832	138	203	927	518
v/c Ratio	0.60	0.91	0.65	0.89	0.87	0.50	0.78	0.61	0.26	0.55	0.58	0.85
Control Delay	49.3	40.4	19.7	53.5	30.1	11.2	62.4	28.1	6.0	39.8	24.9	33.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	40.4	19.7	53.5	30.1	11.2	62.4	28.1	6.0	39.8	24.9	33.4
Queue Length 50th (ft)	33	215	77	127	267	53	43	134	0	50	141	170
Queue Length 95th (ft)	#67	#299	170	#212	329	128	#93	175	41	82	182	#351
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	215	1335	542	558	1843	699	215	1359	524	386	1589	606
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.91	0.65	0.89	0.87	0.50	0.78	0.61	0.26	0.53	0.58	0.85

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

20: Hayes Ave. & Veterans Ave.

Lane Group	SER	NEL	NET	SWT
Lane Group Flow (vph)	330	397	927	1075
v/c Ratio	0.52	0.79	0.25	0.58
Control Delay	3.2	31.7	2.5	14.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.2	31.7	2.5	14.4
Queue Length 50th (ft)	0	105	21	88
Queue Length 95th (ft)	3	#232	33	126
Internal Link Dist (ft)			1398	1849
Turn Bay Length (ft)		150		
Base Capacity (vph)	798	500	3688	1844
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.41	0.79	0.25	0.58

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

21: N. Bryan Ave. & Veterans Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	7	155	99	546	132	21	160	1557	584	18	1615	17
v/c Ratio	0.04	0.37	0.36	0.83	0.11	0.04	0.68	0.61	0.55	0.10	0.79	0.03
Control Delay	35.5	32.1	11.1	41.3	17.4	8.6	49.2	15.0	4.6	36.6	22.9	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	32.1	11.1	41.3	17.4	8.6	49.2	15.0	4.6	36.6	22.9	8.2
Queue Length 50th (ft)	1	34	0	122	20	0	37	163	14	4	226	1
Queue Length 95th (ft)	7	61	39	#208	44	16	#80	277	95	13	299	13
Internal Link Dist (ft)		2411			677			1507			1398	
Turn Bay Length (ft)	150		150	150		150	150		150	150		150
Base Capacity (vph)	174	709	396	663	1265	579	237	2562	1053	174	2038	643
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.22	0.25	0.82	0.10	0.04	0.68	0.61	0.55	0.10	0.79	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

22: N. Bryan Ave. & W. Sierra Ave.

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	252	507	443	11	9	253
v/c Ratio	0.57	0.25	0.45	0.02	0.03	0.49
Control Delay	21.2	4.1	13.9	7.5	14.8	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	4.1	13.9	7.5	14.8	6.5
Queue Length 50th (ft)	44	16	42	0	2	0
Queue Length 95th (ft)	#147	46	85	8	11	44
Internal Link Dist (ft)		677	2766		701	
Turn Bay Length (ft)	150			150	150	
Base Capacity (vph)	488	2381	1370	619	642	735
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.21	0.32	0.02	0.01	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

24: Veterans Ave. & Golden State

Lane Group	NBL	NBT	NBR	SBL	SBT	SEL	SET	NWL	NWT
Lane Group Flow (vph)	16	2167	501	66	3120	18	62	552	506
v/c Ratio	0.27	0.98	0.56	0.85	1.00	0.26	0.24	1.07	0.98
Control Delay	68.0	46.4	9.5	122.5	45.3	64.9	2.2	97.7	75.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.0	46.4	9.5	122.5	45.3	64.9	2.2	97.7	75.2
Queue Length 50th (ft)	11	528	61	48	565	13	0	~472	~383
Queue Length 95th (ft)	37	#748	180	#142	#894	41	0	#774	#686
Internal Link Dist (ft)		1314			1507		858		751
Turn Bay Length (ft)	380		250	320		310		300	
Base Capacity (vph)	59	2222	893	78	3130	70	256	518	516
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.98	0.56	0.85	1.00	0.26	0.24	1.07	0.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

26: Veterans Ave. & SR-99 NB Ramps

Lane Group	NBT	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	1875	2941	222	770	792
v/c Ratio	0.71	0.88	0.14	0.70	0.88
Control Delay	11.0	15.2	0.2	19.0	30.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	15.2	0.2	19.0	30.1
Queue Length 50th (ft)	136	197	0	99	119
Queue Length 95th (ft)	182	252	0	149	#225
Internal Link Dist (ft)	222	1314			
Turn Bay Length (ft)			380		
Base Capacity (vph)	2644	3332	1583	1099	901
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.71	0.88	0.14	0.70	0.88

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

27: Veterans Ave. & SR 99 SB Ramps

Lane Group	NBT	NBR	SBT	SEL	SER
Lane Group Flow (vph)	2216	415	2832	133	152
v/c Ratio	0.60	0.26	0.77	0.42	0.54
Control Delay	6.4	0.4	9.6	23.3	26.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.4	0.4	9.6	23.3	26.8
Queue Length 50th (ft)	124	0	202	38	44
Queue Length 95th (ft)	221	0	#386	78	89
Internal Link Dist (ft)	987		279		
Turn Bay Length (ft)		400			
Base Capacity (vph)	3673	1583	3673	426	382
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.60	0.26	0.77	0.31	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

31: Bullard Ave. & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	348	609	108	60	1417	46	840	416	83	1274	143
v/c Ratio	1.16	0.68	0.13	0.67	1.17	0.78	0.84	0.64	0.71	1.09	0.24
Control Delay	147.7	29.5	3.8	91.2	119.3	123.3	48.5	16.6	86.2	93.3	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	147.7	29.5	3.8	91.2	119.3	123.3	48.5	16.6	86.2	93.3	10.8
Queue Length 50th (ft)	~323	371	0	47	~693	36	318	85	64	~593	21
Queue Length 95th (ft)	#510	512	32	#117	#834	#107	397	198	#145	#730	69
Internal Link Dist (ft)		2564			1707		4355			5342	
Turn Bay Length (ft)											
Base Capacity (vph)	299	899	820	89	1216	59	1034	662	119	1166	592
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.68	0.13	0.67	1.17	0.78	0.81	0.63	0.70	1.09	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

32: Bullard Ave. & Veterans Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	229	35	14	5	55	863	28	1538	837	1812	335
v/c Ratio	0.50	0.09	0.04	0.06	0.32	0.80	0.28	0.86	0.87	0.55	0.24
Control Delay	38.4	26.6	13.5	46.0	43.2	27.5	49.6	32.9	42.2	12.0	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	26.6	13.5	46.0	43.2	27.5	49.6	32.9	42.2	12.0	1.0
Queue Length 50th (ft)	61	14	0	3	29	201	15	291	229	179	0
Queue Length 95th (ft)	100	41	15	15	67	303	45	#444	#389	355	23
Internal Link Dist (ft)		941			502			1285		987	
Turn Bay Length (ft)											
Base Capacity (vph)	628	558	484	80	313	1080	100	1793	960	3265	1396
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.06	0.03	0.06	0.18	0.80	0.28	0.86	0.87	0.55	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

34: Shaw Ave & SR 99 SB Off Ramps

Lane Group	EBT	EBR	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	557	50	833	8	388	310
v/c Ratio	0.45	0.03	0.67	0.01	0.49	0.42
Control Delay	10.8	0.0	13.6	0.0	11.3	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	0.0	13.6	0.0	11.3	8.7
Queue Length 50th (ft)	44	0	73	0	61	35
Queue Length 95th (ft)	71	0	113	0	122	82
Internal Link Dist (ft)	8376		500			
Turn Bay Length (ft)		150				
Base Capacity (vph)	1416	1583	1416	1583	791	745
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.03	0.59	0.01	0.49	0.42

Intersection Summary

35: Shaw Ave & SR 99 NB Off Ramps

Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	386	35	945	995	704	282
v/c Ratio	0.32	0.02	0.79	0.63	0.82	0.31
Control Delay	11.7	0.0	19.2	1.9	21.9	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.7	0.0	19.2	1.9	21.9	2.6
Queue Length 50th (ft)	36	0	108	0	146	2
Queue Length 95th (ft)	62	0	163	0	#326	30
Internal Link Dist (ft)	500		2498			
Turn Bay Length (ft)				150		
Base Capacity (vph)	1258	1583	1258	1583	856	902
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.02	0.75	0.63	0.82	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

36: Shaw Ave & Golden State

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	5	764	51	536	1487	498	363	262	8	47	646	959
v/c Ratio	0.08	1.18	0.16	1.35	0.98	0.60	1.30	0.18	0.01	0.44	0.61	1.23
Control Delay	59.4	138.2	18.9	209.1	53.3	15.6	197.9	23.5	12.1	66.7	38.9	137.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	138.2	18.9	209.1	53.3	15.6	197.9	23.5	12.1	66.7	38.9	137.9
Queue Length 50th (ft)	4	~373	8	~543	572	130	~359	69	0	36	225	~672
Queue Length 95th (ft)	18	#498	44	#761	#837	273	#551	100	10	76	288	#926
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	59	649	321	398	1516	828	280	1462	658	118	1062	777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	1.18	0.16	1.35	0.98	0.60	1.30	0.18	0.01	0.40	0.61	1.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	283	1534	209	227	1909	90	405	762	143	342	447	163
v/c Ratio	0.93	0.80	0.30	0.74	0.99	0.14	0.83	0.88	0.31	0.90	0.59	0.35
Control Delay	78.5	28.8	7.8	34.4	48.7	21.7	53.3	46.1	13.1	67.3	35.7	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.5	28.8	7.8	34.4	48.7	21.7	53.3	46.1	13.1	67.3	35.7	7.4
Queue Length 50th (ft)	84	279	22	68	433	23	116	220	22	100	121	0
Queue Length 95th (ft)	#159	338	69	m67	m427	m22	#188	#321	70	#178	171	50
Internal Link Dist (ft)		3260			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	305	1921	690	305	1921	628	496	865	458	381	755	466
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.80	0.30	0.74	0.99	0.14	0.82	0.88	0.31	0.90	0.59	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

38: Shaw Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	511	1607	283	492	1612	190	453	650	223	193	393	604
v/c Ratio	1.03	1.02	0.46	0.99	1.02	0.32	0.99	0.64	0.38	0.72	0.48	1.02
Control Delay	80.5	68.5	25.0	78.6	59.3	9.6	80.2	31.2	7.8	65.5	32.7	62.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.5	68.5	25.0	78.6	59.3	9.6	80.2	31.2	7.8	65.5	32.7	62.5
Queue Length 50th (ft)	~167	~329	85	145	~345	22	134	168	13	59	81	~152
Queue Length 95th (ft)	m#247	m#434	m128	#248	#453	72	#232	227	66	#108	128	#444
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	496	1582	616	496	1582	585	458	1022	593	267	826	592
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	1.02	0.46	0.99	1.02	0.32	0.99	0.64	0.38	0.72	0.48	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	266	1415	100	179	1813	136	295	316	100	214	702	8
v/c Ratio	0.89	0.76	0.16	0.54	0.95	0.21	0.86	0.39	0.23	0.58	0.83	0.02
Control Delay	68.0	25.7	4.9	40.7	37.1	8.0	60.8	28.0	7.3	40.4	39.5	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.0	25.7	4.9	40.7	37.1	8.0	60.8	28.0	7.3	40.4	39.5	15.1
Queue Length 50th (ft)	69	224	1	44	315	15	76	71	0	53	175	0
Queue Length 95th (ft)	#136	279	30	75	#426	51	#144	108	37	87	#263	11
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	300	1857	640	343	1907	649	343	810	440	386	841	381
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.76	0.16	0.52	0.95	0.21	0.86	0.39	0.23	0.55	0.83	0.02

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1132	76	320	936	59	613	221	230
v/c Ratio	1.03	0.15	1.02	0.50	0.45	0.99	1.02	0.23
Control Delay	66.5	14.1	93.8	14.5	51.3	50.8	108.9	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.5	14.1	93.8	14.5	51.3	50.8	108.9	15.4
Queue Length 50th (ft)	~365	16	~188	167	33	162	~131	30
Queue Length 95th (ft)	#492	47	#356	217	72	#395	#275	60
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1101	518	315	1887	135	618	216	998
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.15	1.02	0.50	0.44	0.99	1.02	0.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

41: Ashlan Ave & Golden State

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	354	1185	1141	516	236	338	306	260	387
v/c Ratio	1.00	0.60	1.01	0.82	0.74	0.97	0.89	0.92	0.71
Control Delay	92.8	18.0	67.9	34.5	56.8	76.8	61.0	82.8	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.8	18.0	67.9	34.5	56.8	76.8	61.0	82.8	13.5
Queue Length 50th (ft)	252	280	~433	227	166	213	174	94	11
Queue Length 95th (ft)	#443	346	#581	#412	#283	#417	#346	#174	108
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	354	1963	1126	627	321	349	345	284	546
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.60	1.01	0.82	0.74	0.97	0.89	0.92	0.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2019 BASELINE TRAFFIC CONDITION

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	277	260	149	25	171	52	512	195	74	379	491
v/c Ratio	0.56	0.30	0.30	0.08	0.37	0.14	0.26	0.26	0.30	0.24	0.50
Control Delay	29.9	19.7	6.2	26.3	19.3	24.8	15.4	4.2	26.0	13.3	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.9	19.7	6.2	26.3	19.3	24.8	15.4	4.2	26.0	13.3	3.8
Queue Length 50th (ft)	46	33	0	4	22	9	52	0	24	53	0
Queue Length 95th (ft)	#96	71	39	14	44	22	78	40	56	84	56
Internal Link Dist (ft)		665			800		120			583	
Turn Bay Length (ft)	200		250	200		200		80	200		
Base Capacity (vph)	492	1165	621	302	940	365	1992	738	243	1606	986
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.22	0.24	0.08	0.18	0.14	0.26	0.26	0.30	0.24	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	279	242	308	57	650	207	308	63	150	197	72	279
v/c Ratio	0.90	0.14	0.42	0.44	0.69	0.45	0.77	0.12	0.28	0.67	0.18	0.50
Control Delay	66.4	19.6	4.8	46.2	34.3	7.8	44.4	25.0	6.3	42.8	27.3	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.4	19.6	4.8	46.2	34.3	7.8	44.4	25.0	6.3	42.8	27.3	7.2
Queue Length 50th (ft)	138	32	0	28	109	0	148	24	0	93	30	0
Queue Length 95th (ft)	#277	51	55	64	147	53	#279	57	45	156	64	60
Internal Link Dist (ft)		1281			2700			1557			524	
Turn Bay Length (ft)	165		165	165		165	65			65		65
Base Capacity (vph)	310	1707	736	133	1017	482	401	510	543	354	396	556
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.14	0.42	0.43	0.64	0.43	0.77	0.12	0.28	0.56	0.18	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	446	17	174	684	51	335	54	314
v/c Ratio	0.24	0.45	0.05	0.51	0.54	0.16	0.42	0.16	0.38
Control Delay	29.2	22.3	9.6	31.4	21.0	26.4	14.8	26.4	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	22.3	9.6	31.4	21.0	26.4	14.8	26.4	16.6
Queue Length 50th (ft)	9	52	0	31	80	8	80	9	89
Queue Length 95th (ft)	24	72	13	58	103	23	159	24	165
Internal Link Dist (ft)		2700			1876		1081		369
Turn Bay Length (ft)	350		250	250		140		100	
Base Capacity (vph)	229	1356	435	343	1548	327	798	330	816
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.33	0.04	0.51	0.44	0.16	0.42	0.16	0.38

Intersection Summary

Lane Group	EBT	WBL	WBT	NER
Lane Group Flow (vph)	628	896	818	1023
v/c Ratio	0.37	0.56	0.16	0.55
Control Delay	11.5	9.0	0.1	6.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.5	9.0	0.1	6.1
Queue Length 50th (ft)	42	54	0	33
Queue Length 95th (ft)	58	105	0	70
Internal Link Dist (ft)	870		578	
Turn Bay Length (ft)				
Base Capacity (vph)	2103	1653	5085	1901
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	0.54	0.16	0.54

Intersection Summary

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	7	1580	64	82	1610	143	78	374	141	137	26
v/c Ratio	0.03	0.89	0.11	0.36	0.74	0.19	0.32	0.61	0.57	0.22	0.05
Control Delay	26.5	27.2	5.0	31.4	18.3	5.2	30.4	15.8	37.9	17.8	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	27.2	5.0	31.4	18.3	5.2	30.4	15.8	37.9	17.8	7.9
Queue Length 50th (ft)	1	198	0	14	156	6	14	63	26	39	0
Queue Length 95th (ft)	6	#293	21	33	#302	41	32	#147	#59	79	15
Internal Link Dist (ft)		578			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	229	1781	596	229	2188	743	246	611	248	614	539
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.89	0.11	0.36	0.74	0.19	0.32	0.61	0.57	0.22	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	329	1707	8	112	1245	179	163	198	196	324	295	412
v/c Ratio	0.75	0.89	0.01	0.57	0.86	0.31	0.65	0.23	0.39	0.81	0.29	0.70
Control Delay	41.7	28.6	9.7	44.7	31.4	5.1	45.4	22.1	9.6	48.6	20.5	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.7	28.6	9.7	44.7	31.4	5.1	45.4	22.1	9.6	48.6	20.5	19.1
Queue Length 50th (ft)	71	254	0	24	184	0	36	36	15	71	51	80
Queue Length 95th (ft)	#126	#358	8	#54	#246	41	#75	62	64	#135	82	179
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	441	1924	603	196	1453	580	251	859	498	398	1011	589
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.89	0.01	0.57	0.86	0.31	0.65	0.23	0.39	0.81	0.29	0.70

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

11: Herndon Ave & N. Blythe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBR
Lane Group Flow (vph)	17	2217	1	2	1529	54	1	54	7
v/c Ratio	0.07	0.72	0.00	0.01	0.52	0.06	0.00	0.35	0.01
Control Delay	39.9	14.7	7.0	39.5	12.9	4.6	29.0	48.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.9	14.7	7.0	39.5	12.9	4.6	29.0	48.4	0.0
Queue Length 50th (ft)	4	275	0	0	153	2	0	15	0
Queue Length 95th (ft)	14	443	2	4	258	20	2	34	0
Internal Link Dist (ft)		2270			2660		994		
Turn Bay Length (ft)	220		140	220		140		120	120
Base Capacity (vph)	227	3081	960	213	2954	938	1101	153	551
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.72	0.00	0.01	0.52	0.06	0.00	0.35	0.01

Intersection Summary

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	99	2074	304	366	1395	29	160	100	555	95	122	68
v/c Ratio	0.59	1.02	0.42	1.03	0.54	0.04	0.99	0.27	1.00	0.98	0.40	0.22
Control Delay	62.2	58.3	13.3	100.7	19.8	8.3	120.5	39.5	59.0	139.3	45.7	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.2	58.3	13.3	100.7	19.8	8.3	120.5	39.5	59.0	139.3	45.7	11.5
Queue Length 50th (ft)	68	~570	70	~278	241	4	115	60	206	68	78	0
Queue Length 95th (ft)	123	#667	144	#462	289	20	#251	110	#441	#176	136	39
Internal Link Dist (ft)		2660			4430			2164			665	
Turn Bay Length (ft)	290		150	310		100	105		75	80		80
Base Capacity (vph)	193	2034	725	354	2571	809	161	373	556	97	305	316
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	1.02	0.42	1.03	0.54	0.04	0.99	0.27	1.00	0.98	0.40	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

13: Herndon Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	151	2359	429	220	1565	242	148	198	264	168	202	166
v/c Ratio	0.51	0.95	0.51	0.82	0.64	0.30	0.77	0.28	0.62	0.88	0.29	0.38
Control Delay	45.7	32.2	13.6	66.4	19.1	9.4	69.3	31.8	22.1	84.0	31.8	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.7	32.2	13.6	66.4	19.1	9.4	69.3	31.8	22.1	84.0	31.8	9.6
Queue Length 50th (ft)	42	447	112	64	235	46	43	50	61	50	51	7
Queue Length 95th (ft)	73	#584	196	#125	285	93	#93	82	144	#109	83	59
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		50	245		125	160		160
Base Capacity (vph)	304	2486	834	267	2445	811	191	708	429	191	708	437
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.95	0.51	0.82	0.64	0.30	0.77	0.28	0.62	0.88	0.29	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

14: Herndon Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	64	2532	252	111	1930	254	84	128	326	245	237	47
v/c Ratio	0.38	1.02	0.29	0.81	0.76	0.29	0.50	0.21	0.95	0.99	0.17	0.10
Control Delay	52.8	48.3	5.9	87.7	23.3	6.6	56.9	36.8	69.7	98.8	28.5	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.8	48.3	5.9	87.7	23.3	6.6	56.9	36.8	69.7	98.8	28.5	9.2
Queue Length 50th (ft)	20	~596	26	37	364	31	27	37	156	158	42	0
Queue Length 95th (ft)	42	#723	70	#86	428	77	52	64	#330	#314	65	28
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	169	2492	864	137	2532	871	169	602	342	248	1414	474
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	1.02	0.29	0.81	0.76	0.29	0.50	0.21	0.95	0.99	0.17	0.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

15: Herndon Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	812	2257	113	245	1241	367	141	1134	138	155	1152	788
v/c Ratio	0.98	1.04	0.16	0.95	0.94	0.77	0.99	0.72	0.24	0.78	1.00	0.96
Control Delay	71.9	66.3	11.1	100.8	58.6	43.2	129.3	40.1	6.0	80.9	67.7	41.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.9	66.3	11.1	100.8	58.6	43.2	129.3	40.1	6.0	80.9	67.7	41.4
Queue Length 50th (ft)	323	~694	24	98	346	204	57	286	0	62	~469	315
Queue Length 95th (ft)	#454	#789	60	#181	#439	#346	#125	339	46	#115	#625	#602
Internal Link Dist (ft)		5199			5182			5342			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	830	2161	708	257	1314	475	143	1568	584	200	1150	818
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	1.04	0.16	0.95	0.94	0.77	0.99	0.72	0.24	0.78	1.00	0.96

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	293	1836	168	185	1590	488	24	365	85	203	764	165
v/c Ratio	0.85	0.94	0.24	0.76	0.88	0.66	0.13	0.30	0.19	0.83	0.46	0.26
Control Delay	56.2	31.8	4.3	53.3	28.1	13.1	33.9	22.4	6.9	61.3	20.7	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	31.8	4.3	53.3	28.1	13.1	33.9	22.4	6.9	61.3	20.7	5.2
Queue Length 50th (ft)	65	270	3	41	229	69	5	46	0	45	86	0
Queue Length 95th (ft)	#129	#378	38	#89	#299	171	16	70	31	#100	142	42
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	343	1961	706	245	1816	739	184	1235	449	245	1657	627
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.94	0.24	0.76	0.88	0.66	0.13	0.30	0.19	0.83	0.46	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

20: Hayes Ave. & Veterans Ave.

Lane Group	SER	NEL	NET	SWT
Lane Group Flow (vph)	315	264	1023	896
v/c Ratio	0.46	0.60	0.29	0.44
Control Delay	2.3	20.7	2.8	12.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.3	20.7	2.8	12.2
Queue Length 50th (ft)	0	59	24	64
Queue Length 95th (ft)	0	113	34	108
Internal Link Dist (ft)			1398	1849
Turn Bay Length (ft)		150		
Base Capacity (vph)	855	559	3516	2043
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.37	0.47	0.29	0.44

Intersection Summary

21: N. Bryan Ave. & Veterans Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	20	102	133	189	61	14	97	1477	263	29	1422	5
v/c Ratio	0.09	0.22	0.41	0.68	0.08	0.04	0.38	0.55	0.27	0.12	0.60	0.01
Control Delay	25.3	20.4	8.7	38.9	15.7	9.7	27.5	11.1	2.8	24.6	13.4	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.3	20.4	8.7	38.9	15.7	9.7	27.5	11.1	2.8	24.6	13.4	7.2
Queue Length 50th (ft)	3	14	0	29	6	0	14	89	0	4	124	0
Queue Length 95th (ft)	11	31	36	#74	21	12	34	195	37	14	185	5
Internal Link Dist (ft)		2411			677			1507			1398	
Turn Bay Length (ft)	150		150	150		150	150		150	150		150
Base Capacity (vph)	231	896	500	276	1002	458	253	2692	962	239	2369	740
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.11	0.27	0.68	0.06	0.03	0.38	0.55	0.27	0.12	0.60	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

22: N. Bryan Ave. & W. Sierra Ave.

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	110	283	113	3	11	151
v/c Ratio	0.35	0.20	0.15	0.01	0.02	0.21
Control Delay	14.9	4.5	10.3	8.0	9.9	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	4.5	10.3	8.0	9.9	3.6
Queue Length 50th (ft)	15	8	7	0	1	0
Queue Length 95th (ft)	45	22	20	4	8	24
Internal Link Dist (ft)		677	2766		701	
Turn Bay Length (ft)	150			150	150	
Base Capacity (vph)	317	2091	1414	634	956	925
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.14	0.08	0.00	0.01	0.16

Intersection Summary

24: Veterans Ave. & Golden State

Lane Group	NBL	NBT	NBR	SBL	SBT	SEL	SET	NWL	NWT
Lane Group Flow (vph)	21	1764	771	57	1995	4	24	188	194
v/c Ratio	0.21	0.75	0.67	0.56	0.64	0.04	0.05	0.43	0.43
Control Delay	38.0	19.1	4.8	56.2	15.2	34.8	0.2	29.7	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	19.1	4.8	56.2	15.2	34.8	0.2	29.7	25.6
Queue Length 50th (ft)	8	220	0	23	140	2	0	60	50
Queue Length 95th (ft)	31	#356	67	#81	280	11	0	#205	#189
Internal Link Dist (ft)		1314			1507		858		751
Turn Bay Length (ft)	380		250	320		310		300	
Base Capacity (vph)	98	2350	1146	101	3114	91	441	438	446
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.75	0.67	0.56	0.64	0.04	0.05	0.43	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

26: Veterans Ave. & SR-99 NB Ramps

Lane Group	NBT	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	2100	1901	114	296	451
v/c Ratio	0.74	0.53	0.07	0.32	0.59
Control Delay	10.5	7.7	0.1	14.3	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	10.5	7.7	0.1	14.3	17.9
Queue Length 50th (ft)	140	84	0	32	58
Queue Length 95th (ft)	219	127	0	56	96
Internal Link Dist (ft)	222	1314			
Turn Bay Length (ft)			380		
Base Capacity (vph)	2835	3573	1583	1099	897
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.74	0.53	0.07	0.27	0.50

Intersection Summary

27: Veterans Ave. & SR 99 SB Ramps

Lane Group	NBT	NBR	SBT	SEL	SER
Lane Group Flow (vph)	2255	522	2197	59	93
v/c Ratio	0.59	0.33	0.59	0.25	0.39
Control Delay	4.9	0.6	4.0	19.5	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.9	0.6	4.0	19.5	16.1
Queue Length 50th (ft)	95	0	67	17	16
Queue Length 95th (ft)	171	0	132	38	44
Internal Link Dist (ft)	987		279		
Turn Bay Length (ft)		400			
Base Capacity (vph)	3849	1583	3744	412	396
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	0.33	0.59	0.14	0.23

Intersection Summary

31: Bullard Ave. & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	154	982	86	210	869	47	729	63	45	665	147
v/c Ratio	0.68	1.04	0.10	1.07	0.50	0.73	0.97	0.16	0.70	0.88	0.33
Control Delay	60.6	67.3	5.8	131.5	20.6	107.5	69.5	10.2	102.5	56.7	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	67.3	5.8	131.5	20.6	107.5	69.5	10.2	102.5	56.7	8.1
Queue Length 50th (ft)	105	~760	8	~167	214	34	272	0	32	242	0
Queue Length 95th (ft)	171	#1006	34	#316	285	#101	#399	36	#95	#346	52
Internal Link Dist (ft)		2564			1707		4355			5342	
Turn Bay Length (ft)											
Base Capacity (vph)	270	947	835	196	1721	64	752	386	64	752	452
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	1.04	0.10	1.07	0.50	0.73	0.97	0.16	0.70	0.88	0.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

32: Bullard Ave. & Veterans Ave.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	274	29	10	17	813	10	1689	388	958	175
v/c Ratio	0.59	0.09	0.03	0.13	0.93	0.13	0.79	0.43	0.26	0.12
Control Delay	45.2	33.1	16.7	50.2	48.7	56.1	26.9	32.5	5.9	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	33.1	16.7	50.2	48.7	56.1	26.9	32.5	5.9	0.5
Queue Length 50th (ft)	75	14	0	9	~253	6	279	90	42	0
Queue Length 95th (ft)	140	40	14	35	#418	25	443	176	139	13
Internal Link Dist (ft)		930		399			1285		987	
Turn Bay Length (ft)										
Base Capacity (vph)	607	525	453	290	924	77	2440	971	3730	1484
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.06	0.02	0.06	0.88	0.13	0.69	0.40	0.26	0.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

34: Shaw Ave & SR 99 SB Off Ramps

Lane Group	EBT	EBR	WBT	SBL	SBR
Lane Group Flow (vph)	659	72	785	349	154
v/c Ratio	0.52	0.05	0.62	0.45	0.21
Control Delay	11.4	0.1	14.5	10.8	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	0.1	14.5	10.8	5.3
Queue Length 50th (ft)	54	0	79	53	10
Queue Length 95th (ft)	85	0	m106	107	34
Internal Link Dist (ft)	8376		500		
Turn Bay Length (ft)		150			
Base Capacity (vph)	1416	1583	1416	784	746
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.47	0.05	0.55	0.45	0.21

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

35: Shaw Ave & SR 99 NB Off Ramps

Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	590	29	996	520	632	129
v/c Ratio	0.44	0.02	0.74	0.33	0.85	0.17
Control Delay	10.2	0.0	14.6	0.6	26.6	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	0.0	14.6	0.6	26.6	2.8
Queue Length 50th (ft)	35	0	91	0	123	0
Queue Length 95th (ft)	87	m0	142	0	#284	20
Internal Link Dist (ft)	500		2498			
Turn Bay Length (ft)				150		
Base Capacity (vph)	1416	1583	1416	1583	746	742
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.02	0.70	0.33	0.85	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

36: Shaw Ave & Golden State

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	5	630	40	393	916	143	596	395	3	17	245	633
v/c Ratio	0.08	1.07	0.14	1.07	0.66	0.21	1.09	0.23	0.00	0.23	0.38	1.10
Control Delay	59.4	104.0	16.5	106.2	37.2	13.2	105.5	18.3	12.0	63.2	45.0	90.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	104.0	16.5	106.2	37.2	13.2	105.5	18.3	12.0	63.2	45.0	90.0
Queue Length 50th (ft)	4	~284	3	~346	333	32	~521	83	0	13	88	~322
Queue Length 95th (ft)	18	#403	34	#550	413	m74	#743	132	6	38	129	#553
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	59	590	294	369	1398	695	546	1752	785	74	649	574
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	1.07	0.14	1.07	0.66	0.21	1.09	0.23	0.00	0.23	0.38	1.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	100	1357	122	124	1125	100	189	149	101	38	792	142
v/c Ratio	0.44	0.86	0.21	0.54	0.71	0.18	0.62	0.11	0.15	0.15	0.76	0.25
Control Delay	29.3	26.5	5.0	36.7	21.2	4.8	37.6	14.3	5.0	28.0	26.5	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	26.5	5.0	36.7	21.2	4.8	37.6	14.3	5.0	28.0	26.5	5.1
Queue Length 50th (ft)	24	241	11	23	128	0	35	16	0	6	141	0
Queue Length 95th (ft)	m22	m220	m8	#50	171	27	#74	40	29	19	#231	35
Internal Link Dist (ft)		3260			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	229	1610	585	229	1610	570	303	1403	689	246	1043	566
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.84	0.21	0.54	0.70	0.18	0.62	0.11	0.15	0.15	0.76	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

38: Shaw Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	126	1890	105	150	1022	46	200	490	202	282	443	527
v/c Ratio	0.49	0.96	0.16	0.87	0.52	0.07	0.93	0.55	0.41	0.73	0.42	0.93
Control Delay	42.6	37.6	7.4	82.3	20.5	5.9	86.0	28.9	13.7	47.0	23.9	45.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	37.6	7.4	82.3	20.5	5.9	86.0	28.9	13.7	47.0	23.9	45.6
Queue Length 50th (ft)	31	328	10	39	146	0	52	112	32	71	92	195
Queue Length 95th (ft)	58	#443	41	#93	187	21	#115	160	89	#123	134	#392
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	257	1970	657	172	1970	641	215	887	488	386	1062	569
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.96	0.16	0.87	0.52	0.07	0.93	0.55	0.41	0.73	0.42	0.93

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

39: Shaw Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	126	1813	170	166	1232	48	218	542	425	171	517	60
v/c Ratio	0.51	0.92	0.24	0.85	0.61	0.07	0.89	0.56	0.81	0.87	0.57	0.13
Control Delay	39.2	30.4	4.4	70.2	19.0	5.2	70.5	24.7	30.5	74.3	25.5	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	30.4	4.4	70.2	19.0	5.2	70.5	24.7	30.5	74.3	25.5	7.1
Queue Length 50th (ft)	27	265	4	37	157	0	48	105	118	38	101	0
Queue Length 95th (ft)	52	#370	39	#88	202	19	#108	152	#265	#92	148	26
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	245	1961	705	196	2020	658	245	961	526	196	910	452
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.92	0.24	0.85	0.61	0.07	0.89	0.56	0.81	0.87	0.57	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1436	32	125	700	34	458	187	533
v/c Ratio	0.98	0.05	0.90	0.37	0.30	0.96	0.94	0.50
Control Delay	46.3	11.1	97.3	12.7	47.8	54.6	92.7	26.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	11.1	97.3	12.7	47.8	54.6	92.7	26.8
Queue Length 50th (ft)	414	6	72	114	19	168	107	130
Queue Length 95th (ft)	#578	23	#177	153	49	#360	#236	182
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1465	664	139	1901	114	487	198	1075
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.05	0.90	0.37	0.30	0.94	0.94	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

41: Ashlan Ave & Golden State

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	390	1163	560	202	227	261	274	215	230
v/c Ratio	1.09	0.74	0.82	0.45	0.67	0.74	0.70	0.51	0.46
Control Delay	108.5	21.6	41.6	10.9	40.8	37.2	28.3	33.2	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	108.5	21.6	41.6	10.9	40.8	37.2	28.3	33.2	7.4
Queue Length 50th (ft)	~225	241	141	14	111	104	77	49	0
Queue Length 95th (ft)	#391	316	#214	69	#206	#226	#188	84	56
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	357	1593	708	452	338	355	392	425	503
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.73	0.79	0.45	0.67	0.74	0.70	0.51	0.46

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	358	177	121	43	256	88	467	202	65	422	352
v/c Ratio	0.66	0.17	0.22	0.15	0.48	0.22	0.24	0.28	0.29	0.33	0.45
Control Delay	31.9	16.9	5.6	27.2	16.7	24.8	15.1	4.4	26.6	16.7	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	16.9	5.6	27.2	16.7	24.8	15.1	4.4	26.6	16.7	4.4
Queue Length 50th (ft)	60	21	0	7	26	15	48	0	22	63	0
Queue Length 95th (ft)	#124	48	34	21	53	31	74	42	51	102	53
Internal Link Dist (ft)		665			800		120			583	
Turn Bay Length (ft)	200		250	200		200		80	200		
Base Capacity (vph)	544	1235	631	293	963	403	1937	728	225	1261	791
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.14	0.19	0.15	0.27	0.22	0.24	0.28	0.29	0.33	0.45

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	305	415	173	2	341	149	170	107	185	90	307
v/c Ratio	0.89	0.23	0.26	0.02	0.51	0.44	0.35	0.19	0.64	0.24	0.55
Control Delay	60.2	18.4	4.3	37.0	34.6	10.0	27.0	24.1	40.8	29.0	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.2	18.4	4.3	37.0	34.6	10.0	27.0	24.1	40.8	29.0	7.7
Queue Length 50th (ft)	149	50	0	1	59	0	69	39	87	38	0
Queue Length 95th (ft)	#286	79	41	8	83	48	130	88	143	78	63
Internal Link Dist (ft)		1281			2700			1557		524	
Turn Bay Length (ft)	165		165	165		165	65		65		65
Base Capacity (vph)	354	1873	692	89	1017	436	483	575	345	373	562
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.22	0.25	0.02	0.34	0.34	0.35	0.19	0.54	0.24	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	513	47	101	467	37	354	54	277
v/c Ratio	0.36	0.53	0.14	0.35	0.42	0.12	0.42	0.16	0.30
Control Delay	33.4	23.4	7.5	29.7	21.1	26.0	15.5	26.3	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	23.4	7.5	29.7	21.1	26.0	15.5	26.3	13.6
Queue Length 50th (ft)	19	62	0	18	56	6	92	9	50
Queue Length 95th (ft)	49	82	21	38	75	19	176	24	140
Internal Link Dist (ft)		2700			1876		1081		369
Turn Bay Length (ft)	350		250	250		140		100	
Base Capacity (vph)	148	1356	457	286	1405	319	834	333	916
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.38	0.10	0.35	0.33	0.12	0.42	0.16	0.30

Intersection Summary

Lane Group	EBT	WBL	WBT	NER
Lane Group Flow (vph)	563	1111	560	922
v/c Ratio	0.39	0.63	0.11	0.45
Control Delay	12.7	8.9	0.0	4.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.7	8.9	0.0	4.1
Queue Length 50th (ft)	39	65	0	21
Queue Length 95th (ft)	54	136	0	51
Internal Link Dist (ft)	870		578	
Turn Bay Length (ft)				
Base Capacity (vph)	2034	1775	5085	2056
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.28	0.63	0.11	0.45

Intersection Summary

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	9	1365	111	343	1573	182	72	339	199	214	26
v/c Ratio	0.04	0.92	0.21	0.81	0.68	0.23	0.34	0.67	0.75	0.35	0.05
Control Delay	29.2	34.1	5.3	45.1	17.1	5.2	33.9	24.5	49.6	20.1	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	34.1	5.3	45.1	17.1	5.2	33.9	24.5	49.6	20.1	8.0
Queue Length 50th (ft)	1	189	0	69	162	9	14	93	40	69	0
Queue Length 95th (ft)	8	#276	31	#131	#279	50	32	#178	#88	125	16
Internal Link Dist (ft)		578			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	211	1486	541	423	2300	790	211	505	264	608	534
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.92	0.21	0.81	0.68	0.23	0.34	0.67	0.75	0.35	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	434	1326	61	272	1748	262	30	338	122	272	333	324
v/c Ratio	0.92	0.70	0.10	0.62	0.95	0.38	0.17	0.45	0.28	0.91	0.30	0.46
Control Delay	61.5	24.0	6.1	39.3	37.6	7.5	38.9	29.7	7.4	71.3	23.0	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.5	24.0	6.1	39.3	37.6	7.5	38.9	29.7	7.4	71.3	23.0	5.7
Queue Length 50th (ft)	111	205	1	66	305	23	7	77	0	70	62	2
Queue Length 95th (ft)	#196	256	25	104	#412	75	20	117	41	#140	110	63
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	472	1888	623	472	1843	696	172	752	432	300	1097	711
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.70	0.10	0.58	0.95	0.38	0.17	0.45	0.28	0.91	0.30	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

11: Herndon Ave & N. Blythe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	9	1708	1	4	2282	65	2	4	65	1	18
v/c Ratio	0.04	0.56	0.00	0.02	0.75	0.07	0.01	0.01	0.34	0.00	0.06
Control Delay	39.9	12.4	8.0	39.8	16.1	5.4	39.5	0.0	46.0	30.0	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.9	12.4	8.0	39.8	16.1	5.4	39.5	0.0	46.0	30.0	13.9
Queue Length 50th (ft)	2	180	0	1	290	6	0	0	18	1	0
Queue Length 95th (ft)	10	309	2	6	495	29	4	0	39	5	18
Internal Link Dist (ft)		2270			2660			994		634	
Turn Bay Length (ft)	220		140	220		140	235		120		120
Base Capacity (vph)	218	3052	950	215	3049	963	610	987	191	339	303
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.56	0.00	0.02	0.75	0.07	0.00	0.00	0.34	0.00	0.06

Intersection Summary

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	91	1550	242	326	2128	91	370	142	392	36	107	95
v/c Ratio	0.86	1.02	0.42	1.02	1.00	0.13	1.05	0.22	0.50	0.35	0.36	0.29
Control Delay	103.9	62.5	13.0	98.1	48.2	11.9	100.5	26.3	6.4	54.5	41.4	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.9	62.5	13.0	98.1	48.2	11.9	100.5	26.3	6.4	54.5	41.4	10.4
Queue Length 50th (ft)	59	~371	42	~222	484	21	~258	68	12	23	62	0
Queue Length 95th (ft)	#152	#479	108	#393	#614	52	#436	119	85	55	113	44
Internal Link Dist (ft)		2660			4430			2164			665	
Turn Bay Length (ft)	290		150	310		100	105		75	80		80
Base Capacity (vph)	106	1526	582	319	2136	686	354	633	780	106	298	333
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	1.02	0.42	1.02	1.00	0.13	1.05	0.22	0.50	0.34	0.36	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

13: Herndon Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	333	1650	235	395	2157	390	172	275	193	222	247	582
v/c Ratio	1.04	0.75	0.32	0.73	1.03	0.56	1.00	0.48	0.46	0.72	0.35	1.03
Control Delay	103.6	26.9	14.8	48.3	59.2	20.5	118.0	41.5	9.6	58.7	36.1	66.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.6	26.9	14.8	48.3	59.2	20.5	118.0	41.5	9.6	58.7	36.1	66.9
Queue Length 50th (ft)	~232	319	65	123	~544	141	~57	84	0	72	72	~230
Queue Length 95th (ft)	#404	390	126	171	#641	236	#127	126	60	#122	108	#443
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		50	245		125	160		160
Base Capacity (vph)	319	2199	725	605	2085	702	172	568	416	309	708	563
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.75	0.32	0.65	1.03	0.56	1.00	0.48	0.46	0.72	0.35	1.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

14: Herndon Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	97	1813	134	305	2677	201	275	280	150	209	325	151
v/c Ratio	0.71	0.79	0.17	0.81	1.01	0.23	0.80	0.49	0.40	0.99	0.36	0.44
Control Delay	75.0	26.7	4.5	61.4	45.3	7.1	62.5	41.7	10.7	104.0	37.2	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.0	26.7	4.5	61.4	45.3	7.1	62.5	41.7	10.7	104.0	37.2	23.3
Queue Length 50th (ft)	31	351	5	99	~620	31	89	86	3	135	67	42
Queue Length 95th (ft)	#73	414	38	#164	#756	69	#153	128	58	#281	96	103
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	137	2291	779	378	2644	872	343	566	374	212	915	346
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.79	0.17	0.81	1.01	0.23	0.80	0.49	0.40	0.99	0.36	0.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

15: Herndon Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	852	1275	101	146	2097	185	196	1167	65	288	1216	1020
v/c Ratio	1.42	0.61	0.14	0.59	1.34	0.34	1.14	0.83	0.13	0.79	1.03	1.39
Control Delay	234.7	29.4	5.7	63.9	190.8	21.4	161.5	46.7	8.6	68.9	73.9	207.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	234.7	29.4	5.7	63.9	190.8	21.4	161.5	46.7	8.6	68.9	73.9	207.8
Queue Length 50th (ft)	~458	281	3	57	~775	66	~91	312	0	113	~531	~888
Queue Length 95th (ft)	#584	331	38	92	#871	130	#169	370	34	#175	#667	#1145
Internal Link Dist (ft)		5199			5182			5342			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	601	2089	706	256	1568	537	172	1412	486	371	1180	734
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.42	0.61	0.14	0.57	1.34	0.34	1.14	0.83	0.13	0.78	1.03	1.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	142	1570	357	470	1778	330	174	1021	102	227	1215	299
v/c Ratio	0.62	0.96	0.58	0.93	0.87	0.45	0.95	0.84	0.23	0.83	0.90	0.55
Control Delay	47.0	41.8	16.2	60.3	27.0	9.6	94.2	34.7	8.1	59.9	36.9	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.0	41.8	16.2	60.3	27.0	9.6	94.2	34.7	8.1	59.9	36.9	15.5
Queue Length 50th (ft)	34	260	73	113	271	47	42	165	3	54	198	52
Queue Length 95th (ft)	#69	#363	157	#200	335	110	#102	#220	39	#112	#279	127
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	229	1627	612	504	2034	738	183	1220	451	275	1356	539
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.96	0.58	0.93	0.87	0.45	0.95	0.84	0.23	0.83	0.90	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

20: Hayes Ave. & Veterans Ave.

Lane Group	SER	NEL	NET	SWT
Lane Group Flow (vph)	390	440	922	1111
v/c Ratio	0.72	0.79	0.38	0.45
Control Delay	18.3	26.3	7.9	7.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.3	26.3	7.9	7.6
Queue Length 50th (ft)	64	86	43	54
Queue Length 95th (ft)	118	#202	76	79
Internal Link Dist (ft)			1398	1849
Turn Bay Length (ft)		150		
Base Capacity (vph)	624	575	2423	2459
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.63	0.77	0.38	0.45

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

21: N. Bryan Ave. & Veterans Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	8	124	103	698	134	23	172	1624	712	21	1701	17
v/c Ratio	0.05	0.35	0.43	0.86	0.10	0.04	0.82	0.67	0.69	0.13	0.83	0.03
Control Delay	40.7	37.0	16.7	42.2	17.8	8.2	69.1	19.3	8.7	41.0	26.6	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	37.0	16.7	42.2	17.8	8.2	69.1	19.3	8.7	41.0	26.6	9.9
Queue Length 50th (ft)	2	32	7	176	22	0	46	207	46	5	280	2
Queue Length 95th (ft)	9	57	52	#277	47	16	#104	332	208	17	363	14
Internal Link Dist (ft)		2411			677			1507			1398	
Turn Bay Length (ft)	150		150	150		150	150		150	150		150
Base Capacity (vph)	156	633	356	835	1363	624	210	2423	1036	159	2056	647
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.20	0.29	0.84	0.10	0.04	0.82	0.67	0.69	0.13	0.83	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

22: N. Bryan Ave. & W. Sierra Ave.

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	298	558	547	11	10	308
v/c Ratio	0.63	0.27	0.53	0.02	0.03	0.56
Control Delay	21.6	4.0	16.2	8.7	17.6	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	4.0	16.2	8.7	17.6	7.4
Queue Length 50th (ft)	57	18	55	0	2	0
Queue Length 95th (ft)	157	54	125	9	13	52
Internal Link Dist (ft)		677	2766		701	
Turn Bay Length (ft)	150			150	150	
Base Capacity (vph)	607	2475	1311	594	605	744
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.23	0.42	0.02	0.02	0.41

Intersection Summary

24: Veterans Ave. & Golden State

Lane Group	NBL	NBT	NBR	SBL	SBT	SEL	SET	NWL	NWT
Lane Group Flow (vph)	15	2338	526	73	3423	20	71	604	558
v/c Ratio	0.25	1.03	0.58	1.18	1.09	0.29	0.28	1.17	1.08
Control Delay	67.1	59.6	10.5	218.7	77.2	66.3	2.8	131.2	101.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.1	59.6	10.5	218.7	77.2	66.3	2.8	131.2	101.8
Queue Length 50th (ft)	11	~595	75	~61	~693	14	0	~554	~475
Queue Length 95th (ft)	35	#836	206	#170	#1034	44	0	#868	#781
Internal Link Dist (ft)		1314			1507		858		751
Turn Bay Length (ft)	380		250	320		310		300	
Base Capacity (vph)	59	2266	901	62	3130	70	253	518	515
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	1.03	0.58	1.18	1.09	0.29	0.28	1.17	1.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

26: Veterans Ave. & SR-99 NB Ramps

Lane Group	NBT	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	2032	3203	266	674	828
v/c Ratio	0.73	0.91	0.17	0.62	0.93
Control Delay	12.1	17.5	0.2	20.4	39.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	17.5	0.2	20.4	39.2
Queue Length 50th (ft)	180	271	0	105	160
Queue Length 95th (ft)	232	#336	0	154	#280
Internal Link Dist (ft)	222	1314			
Turn Bay Length (ft)			380		
Base Capacity (vph)	2797	3524	1583	1087	891
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.73	0.91	0.17	0.62	0.93

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

27: Veterans Ave. & SR 99 SB Ramps

Lane Group	NBT	NBR	SBT	SEL	SER
Lane Group Flow (vph)	2387	426	2986	154	161
v/c Ratio	0.67	0.27	0.84	0.49	0.57
Control Delay	7.4	0.4	11.4	27.1	30.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.4	0.4	11.4	27.1	30.2
Queue Length 50th (ft)	150	0	243	50	53
Queue Length 95th (ft)	261	0	#460	97	103
Internal Link Dist (ft)	987		279		
Turn Bay Length (ft)		400			
Base Capacity (vph)	3550	1583	3550	411	368
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.67	0.27	0.84	0.37	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

31: Bullard Ave. & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	489	503	172	116	1605	60	804	508	84	1062	65
v/c Ratio	1.33	0.57	0.21	0.64	1.25	1.02	0.94	0.72	0.94	1.16	0.15
Control Delay	202.2	26.7	3.5	67.0	151.6	179.5	64.3	13.9	138.2	125.1	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	202.2	26.7	3.5	67.0	151.6	179.5	64.3	13.9	138.2	125.1	13.2
Queue Length 50th (ft)	~491	278	0	87	~817	~48	323	50	66	~513	8
Queue Length 95th (ft)	#701	402	39	148	#959	#141	#445	180	#170	#647	43
Internal Link Dist (ft)		2564			1707		4355			5342	
Turn Bay Length (ft)											
Base Capacity (vph)	369	879	838	217	1287	59	855	707	89	914	448
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.33	0.57	0.21	0.53	1.25	1.02	0.94	0.72	0.94	1.16	0.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

32: Bullard Ave. & Veterans Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	250	58	22	5	58	888	32	1675	916	1867	363
v/c Ratio	0.60	0.15	0.06	0.08	0.39	0.79	0.34	0.89	0.89	0.56	0.27
Control Delay	51.9	35.9	14.1	58.2	56.5	33.1	62.7	40.5	49.2	13.3	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	35.9	14.1	58.2	56.5	33.1	62.7	40.5	49.2	13.3	0.9
Queue Length 50th (ft)	87	32	0	4	40	295	22	413	326	293	0
Queue Length 95th (ft)	134	73	23	17	83	392	58	#554	#484	382	22
Internal Link Dist (ft)		920			467			1285		987	
Turn Bay Length (ft)	150		150	150		150	150		150		150
Base Capacity (vph)	500	468	414	63	256	1130	96	1892	1030	3321	1367
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.12	0.05	0.08	0.23	0.79	0.33	0.89	0.89	0.56	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

34: Shaw Ave & SR 99 SB Off Ramps

Lane Group	EBT	EBR	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	601	38	930	9	395	337
v/c Ratio	0.46	0.02	0.71	0.01	0.52	0.47
Control Delay	10.6	0.0	14.1	0.0	12.0	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	0.0	14.1	0.0	12.0	10.3
Queue Length 50th (ft)	45	0	78	0	67	46
Queue Length 95th (ft)	77	0	129	0	124	97
Internal Link Dist (ft)	8376		500			
Turn Bay Length (ft)		150				
Base Capacity (vph)	1432	1583	1432	1583	772	717
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.02	0.65	0.01	0.51	0.47

Intersection Summary

35: Shaw Ave & SR 99 NB Off Ramps

Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	426	39	1042	896	758	279
v/c Ratio	0.35	0.02	0.85	0.57	0.84	0.30
Control Delay	14.4	0.0	25.8	1.5	23.0	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	0.0	25.8	1.5	23.0	3.2
Queue Length 50th (ft)	53	0	162	0	194	9
Queue Length 95th (ft)	84	0	#266	0	#398	40
Internal Link Dist (ft)	500		2498			
Turn Bay Length (ft)				150		
Base Capacity (vph)	1247	1583	1247	1583	915	924
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.02	0.84	0.57	0.83	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

36: Shaw Ave & Golden State

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	5	807	51	574	1417	583	355	305	5	46	641	963
v/c Ratio	0.08	1.19	0.15	1.34	0.88	0.65	1.33	0.22	0.01	0.43	0.64	1.25
Control Delay	59.4	142.1	18.9	205.2	38.1	14.2	213.9	25.9	14.4	66.2	41.1	143.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	142.1	18.9	205.2	38.1	14.2	213.9	25.9	14.4	66.2	41.1	143.1
Queue Length 50th (ft)	4	~396	9	~580	501	136	~358	85	0	35	228	~666
Queue Length 95th (ft)	18	#524	44	#801	#740	298	#548	120	9	75	293	#922
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	59	678	333	428	1605	901	266	1373	617	118	1003	772
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	1.19	0.15	1.34	0.88	0.65	1.33	0.22	0.01	0.39	0.64	1.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	284	1546	212	221	1822	116	437	763	157	371	460	165
v/c Ratio	0.95	0.84	0.31	0.74	0.99	0.19	0.93	0.91	0.34	0.96	0.61	0.35
Control Delay	78.9	28.5	6.6	51.8	45.0	8.9	62.6	46.3	10.9	74.8	32.6	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.9	28.5	6.6	51.8	45.0	8.9	62.6	46.3	10.9	74.8	32.6	7.1
Queue Length 50th (ft)	74	254	15	56	325	15	112	195	17	96	110	0
Queue Length 95th (ft)	#148	314	60	#107	#442	48	#198	#300	64	#181	158	47
Internal Link Dist (ft)		3260			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	300	1843	678	300	1843	619	472	841	464	386	752	466
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.84	0.31	0.74	0.99	0.19	0.93	0.91	0.34	0.96	0.61	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

38: Shaw Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	445	1754	284	482	1457	180	464	765	214	203	420	662
v/c Ratio	0.85	1.03	0.46	0.99	0.89	0.31	1.01	0.72	0.39	0.64	0.46	1.07
Control Delay	65.2	70.8	19.6	90.5	46.8	14.5	97.0	42.5	17.3	61.8	39.4	83.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.2	70.8	19.6	90.5	46.8	14.5	97.0	42.5	17.3	61.8	39.4	83.2
Queue Length 50th (ft)	173	~535	92	194	394	40	~191	282	57	78	144	~400
Queue Length 95th (ft)	#249	#631	174	#306	#465	99	#301	355	127	119	195	#634
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	544	1695	612	486	1638	582	458	1057	555	343	914	616
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	1.03	0.46	0.99	0.89	0.31	1.01	0.72	0.39	0.59	0.46	1.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	295	1311	208	30	1613	89	189	395	166	322	765	54
v/c Ratio	0.81	0.56	0.25	0.16	0.91	0.15	0.83	0.49	0.36	0.88	0.81	0.12
Control Delay	51.4	16.3	3.2	36.1	33.2	7.6	64.6	27.7	9.5	59.9	34.0	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	16.3	3.2	36.1	33.2	7.6	64.6	27.7	9.5	59.9	34.0	8.5
Queue Length 50th (ft)	70	139	0	7	258	7	45	84	11	77	174	2
Queue Length 95th (ft)	#131	221	37	19	#355	36	#100	126	58	#147	#260	27
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	366	2359	846	183	1763	592	229	802	464	366	944	458
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.56	0.25	0.16	0.91	0.15	0.83	0.49	0.36	0.88	0.81	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1175	89	365	895	75	609	232	264
v/c Ratio	1.04	0.17	1.03	0.45	0.52	1.01	1.01	0.28
Control Delay	71.4	16.0	96.8	13.9	57.4	55.2	106.6	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.4	16.0	96.8	13.9	57.4	55.2	106.6	20.2
Queue Length 50th (ft)	~427	23	~251	166	46	~177	~152	45
Queue Length 95th (ft)	#558	59	#430	213	93	#414	#305	80
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1132	532	354	1982	155	605	230	935
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.17	1.03	0.45	0.48	1.01	1.01	0.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

41: Ashlan Ave & Golden State

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	367	1218	1211	486	226	292	265	270	395
v/c Ratio	1.04	0.60	1.02	0.76	0.78	0.93	0.83	0.91	0.74
Control Delay	101.4	16.9	67.3	29.6	62.9	71.5	55.1	80.6	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.4	16.9	67.3	29.6	62.9	71.5	55.1	80.6	15.9
Queue Length 50th (ft)	~280	278	~463	205	162	175	143	97	23
Queue Length 95th (ft)	#464	343	#611	341	#286	#361	#291	#177	129
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	354	2027	1190	643	290	313	318	297	537
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.60	1.02	0.76	0.78	0.93	0.83	0.91	0.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2025 BASELINE TRAFFIC CONDITION

1: Parkway Dr & Herndon Ave

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	100	32	13	98	303	147
v/c Ratio	0.13	0.02	0.01	0.10	0.29	0.25
Control Delay	7.6	6.7	6.8	2.7	3.5	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.6	6.7	6.8	2.7	3.5	1.0
Queue Length 50th (ft)	11	1	1	0	4	1
Queue Length 95th (ft)	34	7	4	17	m9	m1
Internal Link Dist (ft)		297	586		197	
Turn Bay Length (ft)						
Base Capacity (vph)	785	1992	1992	934	1373	721
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.02	0.01	0.10	0.22	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	NWL	NWR	NET	SWT
Lane Group Flow (vph)	28	561	55	539
v/c Ratio	0.04	0.40	0.07	0.70
Control Delay	10.3	2.5	5.0	14.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.3	2.5	5.0	14.3
Queue Length 50th (ft)	4	0	7	91
Queue Length 95th (ft)	16	27	12	137
Internal Link Dist (ft)	320		414	193
Turn Bay Length (ft)		200		
Base Capacity (vph)	775	1536	843	843
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.04	0.37	0.07	0.64

Intersection Summary

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	599	142	153	35	170	27	428	143	79	368	651
v/c Ratio	0.80	0.13	0.25	0.13	0.39	0.09	0.24	0.22	0.33	0.23	0.61
Control Delay	35.5	16.5	5.0	29.8	20.7	27.3	18.1	5.0	28.8	13.9	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	16.5	5.0	29.8	20.7	27.3	18.1	5.0	28.8	13.9	4.7
Queue Length 50th (ft)	112	17	0	6	23	5	50	0	29	43	0
Queue Length 95th (ft)	#214	42	38	19	47	15	74	37	63	91	69
Internal Link Dist (ft)		665			800		120			583	
Turn Bay Length (ft)	200		250	200		200		80	200		
Base Capacity (vph)	752	1379	710	264	870	316	1757	641	239	1571	1065
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.10	0.22	0.13	0.20	0.09	0.24	0.22	0.33	0.23	0.61

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & Bryan Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	279	449	288	59	808	207	274	67	160	197	54	279
v/c Ratio	0.95	0.30	0.43	0.30	0.72	0.41	0.34	0.05	0.24	0.52	0.07	0.52
Control Delay	76.4	20.5	5.3	35.9	29.3	6.4	23.9	15.6	4.2	34.5	21.5	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.4	20.5	5.3	35.9	29.3	6.4	23.9	15.6	4.2	34.5	21.5	9.9
Queue Length 50th (ft)	62	57	0	12	117	0	51	10	0	41	9	18
Queue Length 95th (ft)	#132	84	53	30	157	48	82	22	35	72	23	80
Internal Link Dist (ft)		1281			2700			1557			524	
Turn Bay Length (ft)	165		165	165		165	65			65		65
Base Capacity (vph)	294	1501	670	196	1162	522	811	1253	664	392	809	536
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.30	0.43	0.30	0.70	0.40	0.34	0.05	0.24	0.50	0.07	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	643	17	198	821	51	416	54	343
v/c Ratio	0.24	0.57	0.05	0.69	0.55	0.18	0.56	0.19	0.45
Control Delay	29.2	22.4	9.0	41.6	19.8	27.7	17.8	27.9	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	22.4	9.0	41.6	19.8	27.7	17.8	27.9	17.6
Queue Length 50th (ft)	9	74	0	36	96	8	112	9	102
Queue Length 95th (ft)	24	101	13	#78	127	23	#212	24	176
Internal Link Dist (ft)		2700			1876		1081		369
Turn Bay Length (ft)	350		250	250		140		100	
Base Capacity (vph)	229	1356	435	286	1524	285	747	285	758
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.47	0.04	0.69	0.54	0.18	0.56	0.19	0.45

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NER
Lane Group Flow (vph)	855	1124	1000	1399
v/c Ratio	0.54	0.62	0.20	0.72
Control Delay	15.9	10.1	0.1	11.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	15.9	10.1	0.1	11.1
Queue Length 50th (ft)	76	100	0	109
Queue Length 95th (ft)	104	158	0	173
Internal Link Dist (ft)	870		578	
Turn Bay Length (ft)				
Base Capacity (vph)	1672	1850	5085	1976
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.51	0.61	0.20	0.71

Intersection Summary

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	7	2186	62	184	1998	248	79	439	199	132	26
v/c Ratio	0.04	0.98	0.09	0.86	0.74	0.27	0.37	0.95	0.93	0.27	0.06
Control Delay	36.8	38.7	4.2	72.6	17.4	6.0	41.1	56.2	85.0	26.6	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	38.7	4.2	72.6	17.4	6.0	41.1	56.2	85.0	26.6	10.2
Queue Length 50th (ft)	1	380	0	47	251	24	20	171	52	54	0
Queue Length 95th (ft)	8	#510	20	#105	387	76	41	#353	#115	102	19
Internal Link Dist (ft)		578			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	172	2225	727	215	2695	904	215	463	215	484	431
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.98	0.09	0.86	0.74	0.27	0.37	0.95	0.93	0.27	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	367	2204	211	125	1651	145	276	197	183	253	309	486
v/c Ratio	0.81	0.98	0.27	0.82	0.91	0.23	0.90	0.26	0.43	0.64	0.36	0.92
Control Delay	53.5	39.3	8.0	81.1	36.4	8.8	74.4	30.5	17.7	45.7	29.6	46.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.5	39.3	8.0	81.1	36.4	8.8	74.4	30.5	17.7	45.7	29.6	46.1
Queue Length 50th (ft)	106	435	30	37	323	17	81	49	38	71	76	176
Queue Length 95th (ft)	#172	#565	73	#86	#421	58	#155	80	99	110	114	#371
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	458	2260	770	153	1817	629	305	771	425	420	865	527
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.98	0.27	0.82	0.91	0.23	0.90	0.26	0.43	0.60	0.36	0.92

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

11: Herndon Ave & N. Blythe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBR
Lane Group Flow (vph)	33	2616	1	2	1895	54	1	54	27
v/c Ratio	0.15	0.80	0.00	0.01	0.62	0.06	0.00	0.39	0.06
Control Delay	45.3	16.1	8.0	44.5	14.8	5.2	34.0	55.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.3	16.1	8.0	44.5	14.8	5.2	34.0	55.5	0.2
Queue Length 50th (ft)	10	377	0	0	291	5	0	17	0
Queue Length 95th (ft)	25	595	3	4	354	22	2	38	0
Internal Link Dist (ft)		2270			2660		994		
Turn Bay Length (ft)	220		140	220		140		120	120
Base Capacity (vph)	221	3282	1022	192	3046	963	991	137	485
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.80	0.00	0.01	0.62	0.06	0.00	0.39	0.06

Intersection Summary

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	120	2463	325	336	1692	32	210	118	329	103	142	92
v/c Ratio	0.46	1.01	0.38	0.98	0.66	0.04	0.92	0.17	0.76	0.67	0.23	0.26
Control Delay	45.8	46.1	7.3	86.1	18.4	6.6	85.1	30.6	31.5	64.8	32.8	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.8	46.1	7.3	86.1	18.4	6.6	85.1	30.6	31.5	64.8	32.8	9.3
Queue Length 50th (ft)	34	~512	41	100	252	3	62	29	98	30	36	0
Queue Length 95th (ft)	61	#641	97	#186	302	17	#129	53	#226	#69	63	40
Internal Link Dist (ft)		2660			4430			2164			665	
Turn Bay Length (ft)	290		150	310		100	105		75	80		80
Base Capacity (vph)	267	2430	857	343	2552	805	229	708	433	153	629	357
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	1.01	0.38	0.98	0.66	0.04	0.92	0.17	0.76	0.67	0.23	0.26

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

13: Herndon Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	161	2804	114	233	1704	257	243	246	241	174	239	187
v/c Ratio	0.54	1.04	0.13	0.97	0.65	0.30	1.01	0.41	0.65	0.72	0.40	0.50
Control Delay	51.0	53.3	9.6	98.9	19.3	9.9	108.9	39.4	28.0	63.7	39.2	18.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	53.3	9.6	98.9	19.3	9.9	108.9	39.4	28.0	63.7	39.2	18.6
Queue Length 50th (ft)	51	~711	27	77	280	55	~82	74	69	57	72	33
Queue Length 95th (ft)	84	#804	55	#155	332	106	#162	113	154	#105	110	100
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		50	245		125	160		160
Base Capacity (vph)	309	2695	851	240	2612	858	240	602	370	240	602	375
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	1.04	0.13	0.97	0.65	0.30	1.01	0.41	0.65	0.73	0.40	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

14: Herndon Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	62	2878	172	73	2067	236	93	196	186	191	285	45
v/c Ratio	0.32	1.01	0.18	0.48	0.73	0.25	0.49	0.31	0.54	1.00	0.28	0.13
Control Delay	45.7	39.7	3.7	52.6	17.6	4.0	50.2	33.8	25.8	110.3	32.4	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.7	39.7	3.7	52.6	17.6	4.0	50.2	33.8	25.8	110.3	32.4	10.9
Queue Length 50th (ft)	18	~653	11	21	319	16	26	51	55	~57	52	0
Queue Length 95th (ft)	38	#747	40	43	381	51	52	83	122	#127	78	29
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	191	2859	947	153	2814	954	191	629	346	191	1006	349
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	1.01	0.18	0.48	0.73	0.25	0.49	0.31	0.54	1.00	0.28	0.13

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

15: Herndon Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	953	2243	159	149	1301	355	150	1185	170	159	1320	759
v/c Ratio	1.03	0.94	0.20	0.87	1.02	0.75	0.87	0.86	0.34	0.92	0.96	0.82
Control Delay	73.8	34.4	5.9	89.1	69.1	35.4	90.1	42.5	14.1	100.1	53.3	26.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.8	34.4	5.9	89.1	69.1	35.4	90.1	42.5	14.1	100.1	53.3	26.4
Queue Length 50th (ft)	~336	480	16	49	~325	150	50	263	32	53	303	362
Queue Length 95th (ft)	#459	#583	51	#107	#417	#280	#108	#320	87	#116	#402	#573
Internal Link Dist (ft)		5199			5182			5342			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	927	2390	804	172	1271	474	172	1373	504	172	1373	920
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.94	0.20	0.87	1.02	0.75	0.87	0.86	0.34	0.92	0.96	0.83

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	355	1888	130	155	1709	384	54	477	158	295	693	109
v/c Ratio	0.83	0.87	0.18	0.72	0.93	0.55	0.31	0.44	0.35	0.86	0.45	0.20
Control Delay	52.1	26.9	4.9	57.2	34.9	12.6	41.7	28.9	8.7	60.8	24.5	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.1	26.9	4.9	57.2	34.9	12.6	41.7	28.9	8.7	60.8	24.5	6.1
Queue Length 50th (ft)	90	305	6	40	294	65	13	76	6	76	108	0
Queue Length 95th (ft)	#159	372	36	#84	#397	148	31	107	53	#144	144	36
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	429	2161	735	215	1843	702	172	1081	450	343	1538	555
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.87	0.18	0.72	0.93	0.55	0.31	0.44	0.35	0.86	0.45	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

17: Parkway Dr & N. Grantland Ave.

Lane Group	EBT	EBR	NBL	NBR
Lane Group Flow (vph)	493	80	13	293
v/c Ratio	0.38	0.13	0.01	0.46
Control Delay	6.9	2.6	6.8	5.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.9	2.6	6.8	5.1
Queue Length 50th (ft)	17	0	0	6
Queue Length 95th (ft)	48	12	3	38
Internal Link Dist (ft)	586		2735	
Turn Bay Length (ft)		100		100
Base Capacity (vph)	1783	837	1661	879
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.28	0.10	0.01	0.33

Intersection Summary

20: Hayes Ave. & Veterans Ave.

Lane Group	SER	NEL	NET	SWT
Lane Group Flow (vph)	378	337	1399	1124
v/c Ratio	0.57	0.70	0.39	0.63
Control Delay	4.2	25.0	3.2	15.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.2	25.0	3.2	15.3
Queue Length 50th (ft)	0	83	37	96
Queue Length 95th (ft)	14	#172	67	146
Internal Link Dist (ft)			1398	1849
Turn Bay Length (ft)		150		
Base Capacity (vph)	820	531	3606	1798
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.46	0.63	0.39	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

21: Bryan Ave & Veterans Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	30	61	151	185	38	12	86	1995	116	20	1795	9
v/c Ratio	0.15	0.14	0.51	0.79	0.06	0.04	0.40	0.63	0.11	0.10	0.65	0.01
Control Delay	30.9	24.3	14.6	56.2	21.9	13.2	34.4	10.4	3.0	31.4	13.1	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.9	24.3	14.6	56.2	21.9	13.2	34.4	10.4	3.0	31.4	13.1	5.8
Queue Length 50th (ft)	5	11	11	35	5	0	15	139	2	3	174	0
Queue Length 95th (ft)	18	25	56	#93	18	13	37	315	27	13	267	7
Internal Link Dist (ft)		2411			677			1507			1398	
Turn Bay Length (ft)	150		150	150		150	150		150	150		150
Base Capacity (vph)	203	778	441	233	836	383	213	3171	1025	198	2771	867
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.08	0.34	0.79	0.05	0.03	0.40	0.63	0.11	0.10	0.65	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

22: Bryan Ave & W. Sierra Ave.

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	89	109	63	10	16	172
v/c Ratio	0.30	0.10	0.10	0.04	0.01	0.15
Control Delay	12.4	4.6	9.6	7.1	8.3	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	4.6	9.6	7.1	8.3	2.7
Queue Length 50th (ft)	1	0	0	0	0	0
Queue Length 95th (ft)	37	10	13	6	10	25
Internal Link Dist (ft)		677	2766		701	
Turn Bay Length (ft)	150			150	150	
Base Capacity (vph)	299	1761	1213	549	1341	1241
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.06	0.05	0.02	0.01	0.14

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	52	258	17	178	82	108	185	103	105	27
v/c Ratio	0.15	0.44	0.05	0.32	0.15	0.18	0.22	0.19	0.12	0.04
Control Delay	6.9	6.7	6.1	7.8	2.7	7.3	6.7	7.5	6.6	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	6.7	6.1	7.8	2.7	7.3	6.7	7.5	6.6	3.4
Queue Length 50th (ft)	4	12	1	13	0	8	13	8	7	0
Queue Length 95th (ft)	15	41	7	37	11	28	40	27	26	7
Internal Link Dist (ft)		2293		4207			2050		2531	
Turn Bay Length (ft)										
Base Capacity (vph)	547	850	508	849	766	763	1100	710	1107	952
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.30	0.03	0.21	0.11	0.14	0.17	0.15	0.09	0.03

Intersection Summary

24: Veterans Ave. & Golden State

Lane Group	NBL	NBT	NBR	SBL	SBT	SEL	SET	NWL	NWT
Lane Group Flow (vph)	29	2150	460	80	2337	1	17	170	166
v/c Ratio	0.29	0.84	0.45	0.76	0.64	0.01	0.05	0.41	0.40
Control Delay	47.6	22.2	2.9	81.7	14.4	42.0	0.2	33.4	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	22.2	2.9	81.7	14.4	42.0	0.2	33.4	29.9
Queue Length 50th (ft)	15	322	0	41	185	1	0	73	63
Queue Length 95th (ft)	44	474	50	#128	361	6	0	#216	#194
Internal Link Dist (ft)		1314			1507		858		751
Turn Bay Length (ft)	380		250	320		310		300	
Base Capacity (vph)	99	2570	1027	105	3656	75	360	416	419
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.84	0.45	0.76	0.64	0.01	0.05	0.41	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

25: Bullard Ave. & N. Grantland Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	79	12	9	1	20	188	8	52	61	29
v/c Ratio	0.23	0.03	0.02	0.00	0.04	0.35	0.01	0.03	0.09	0.03
Control Delay	7.1	5.3	3.5	5.0	5.4	3.1	5.6	5.4	5.9	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	5.3	3.5	5.0	5.4	3.1	5.6	5.4	5.9	4.9
Queue Length 50th (ft)	5	1	0	0	1	0	1	1	4	1
Queue Length 95th (ft)	16	4	3	1	6	13	4	5	14	7
Internal Link Dist (ft)		1175			1887			2526		2735
Turn Bay Length (ft)										
Base Capacity (vph)	582	782	670	587	782	774	843	2169	823	1103
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.02	0.01	0.00	0.03	0.24	0.01	0.02	0.07	0.03

Intersection Summary

26: Veterans Ave. & SR-99 NB Ramps

Lane Group	NBT	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	2082	2213	138	283	555
v/c Ratio	0.76	0.64	0.09	0.28	0.68
Control Delay	11.3	9.1	0.1	13.8	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	9.1	0.1	13.8	19.5
Queue Length 50th (ft)	161	122	0	30	75
Queue Length 95th (ft)	216	157	0	54	121
Internal Link Dist (ft)	222	1314			
Turn Bay Length (ft)			380		
Base Capacity (vph)	2755	3471	1583	1099	897
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.76	0.64	0.09	0.26	0.62

Intersection Summary

27: Veterans Ave. & SR 99 SB Ramps

Lane Group	NBT	NBR	SBT	SEL	SER
Lane Group Flow (vph)	2343	391	2495	20	98
v/c Ratio	0.58	0.25	0.64	0.10	0.44
Control Delay	4.5	0.4	4.0	19.6	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.5	0.4	4.0	19.6	18.5
Queue Length 50th (ft)	101	0	79	7	20
Queue Length 95th (ft)	186	0	166	20	49
Internal Link Dist (ft)	987		279		
Turn Bay Length (ft)		400			
Base Capacity (vph)	4011	1583	3874	365	360
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.58	0.25	0.64	0.05	0.27

Intersection Summary

28: Bryan Ave & N. Carnegie Ave.

Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Group Flow (vph)	107	142	613	151	95	599
v/c Ratio	0.22	0.41	0.78	0.06	0.30	0.61
Control Delay	23.0	9.4	22.7	3.6	22.3	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	9.4	22.7	3.6	22.3	5.1
Queue Length 50th (ft)	16	0	145	6	27	0
Queue Length 95th (ft)	38	42	#379	18	64	38
Internal Link Dist (ft)	2766			945	941	
Turn Bay Length (ft)		150	200		150	
Base Capacity (vph)	950	529	846	2570	490	1205
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.27	0.72	0.06	0.19	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

29: Golden State & N. Carnegie Ave.

Lane Group	SEL	SET	NWL	NWT	NWR	NET	SWL	SWT	SWR
Lane Group Flow (vph)	518	296	41	161	198	65	211	222	318
v/c Ratio	0.79	0.17	0.31	0.26	0.44	0.38	0.62	0.64	0.55
Control Delay	37.0	10.9	45.7	35.9	9.1	38.6	39.8	40.8	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	10.9	45.7	35.9	9.1	38.6	39.8	40.8	7.2
Queue Length 50th (ft)	233	33	22	46	0	29	115	122	0
Queue Length 95th (ft)	#507	68	56	74	60	66	175	184	61
Internal Link Dist (ft)		2208		2920		303		941	
Turn Bay Length (ft)					65				
Base Capacity (vph)	658	1835	135	761	496	322	365	369	593
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.16	0.30	0.21	0.40	0.20	0.58	0.60	0.54

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

30: Bryan Ave & Dante Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	18	692	39	27	512	33	180	12	20	128	14	51
v/c Ratio	0.05	0.50	0.06	0.11	0.37	0.05	0.41	0.01	0.04	0.29	0.02	0.10
Control Delay	6.6	8.2	3.1	7.5	7.3	3.3	11.5	7.5	4.4	10.0	7.6	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	8.2	3.1	7.5	7.3	3.3	11.5	7.5	4.4	10.0	7.6	3.7
Queue Length 50th (ft)	1	33	0	2	23	0	19	1	0	13	1	0
Queue Length 95th (ft)	9	81	10	13	58	9	58	4	8	43	8	13
Internal Link Dist (ft)		1442			3543			564			4207	
Turn Bay Length (ft)												
Base Capacity (vph)	412	1714	787	305	1714	784	633	1609	730	634	847	747
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.40	0.05	0.09	0.30	0.04	0.28	0.01	0.03	0.20	0.02	0.07

Intersection Summary

31: Bullard Ave. & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	290	879	74	198	799	48	862	190	64	687	204
v/c Ratio	0.82	0.81	0.14	0.75	0.88	0.48	0.87	0.33	0.63	0.65	0.33
Control Delay	49.3	30.1	5.9	50.6	38.6	52.8	36.1	5.4	64.7	25.4	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	30.1	5.9	50.6	38.6	52.8	36.1	5.4	64.7	25.4	5.2
Queue Length 50th (ft)	130	196	0	90	184	22	200	0	30	150	0
Queue Length 95th (ft)	#256	#270	27	#190	#289	#66	#302	44	#92	207	46
Internal Link Dist (ft)		2564			1707		4355			5342	
Turn Bay Length (ft)											
Base Capacity (vph)	385	1163	570	285	968	99	1065	609	101	1140	648
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.76	0.13	0.69	0.83	0.48	0.81	0.31	0.63	0.60	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

32: Bullard Ave. & Veterans Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	334	108	13	49	92	693	13	1708	111	277	1052	218
v/c Ratio	0.59	0.25	0.03	0.37	0.42	0.91	0.15	0.83	0.16	0.65	0.36	0.17
Control Delay	35.4	26.8	12.7	46.1	39.6	42.5	44.8	25.7	4.5	43.4	11.4	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	26.8	12.7	46.1	39.6	42.5	44.8	25.7	4.5	43.4	11.4	1.0
Queue Length 50th (ft)	81	46	0	24	44	176	6	270	0	70	95	0
Queue Length 95th (ft)	128	88	14	62	91	#264	25	#384	32	#137	183	21
Internal Link Dist (ft)		928			432			1285			987	
Turn Bay Length (ft)												
Base Capacity (vph)	711	587	508	136	357	765	89	2181	742	427	2909	1321
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.18	0.03	0.36	0.26	0.91	0.15	0.78	0.15	0.65	0.36	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

33: Barstow Ave. & N. Grantland Ave.

Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	354	105	54	4	13	7
v/c Ratio	0.50	0.15	0.10	0.01	0.02	0.01
Control Delay	7.8	5.0	8.2	5.8	7.8	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	5.0	8.2	5.8	7.8	5.5
Queue Length 50th (ft)	23	6	4	0	1	0
Queue Length 95th (ft)	55	18	18	3	7	4
Internal Link Dist (ft)	269	403	2578		2526	
Turn Bay Length (ft)				50		50
Base Capacity (vph)	923	921	826	755	877	757
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.11	0.07	0.01	0.01	0.01

Intersection Summary

34: Shaw Ave & SR 99 SB Off Ramps

Lane Group	EBT	EBR	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	1991	660	1515	18	511	283
v/c Ratio	0.85	0.42	0.64	0.01	0.80	0.49
Control Delay	16.1	0.8	11.1	0.0	25.2	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	0.8	11.1	0.0	25.2	14.0
Queue Length 50th (ft)	158	0	104	0	110	50
Queue Length 95th (ft)	#261	0	143	0	#243	102
Internal Link Dist (ft)	8376		500			
Turn Bay Length (ft)		150				
Base Capacity (vph)	2355	1583	2355	1583	669	604
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.42	0.64	0.01	0.76	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

35: Shaw Ave & SR 99 NB Off Ramps

Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	1873	79	1743	461	910	132
v/c Ratio	0.99	0.05	0.92	0.29	0.99	0.16
Control Delay	42.5	0.1	31.9	0.5	47.4	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	0.1	31.9	0.5	47.4	10.0
Queue Length 50th (ft)	309	0	276	0	390	30
Queue Length 95th (ft)	#426	0	#378	0	#660	58
Internal Link Dist (ft)	500		2498			
Turn Bay Length (ft)				150		
Base Capacity (vph)	1898	1583	1898	1583	920	824
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.05	0.92	0.29	0.99	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

36: Shaw Ave & Golden State

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	5	1859	64	362	1285	150	251	430	2	20	326	722
v/c Ratio	0.04	1.06	0.11	1.06	0.54	0.18	1.00	0.29	0.00	0.16	0.27	1.13
Control Delay	52.0	74.2	12.6	111.9	22.4	3.7	109.6	22.7	15.5	54.3	27.5	106.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	74.2	12.6	111.9	22.4	3.7	109.6	22.7	15.5	54.3	27.5	106.4
Queue Length 50th (ft)	2	~529	12	~144	223	0	~93	98	0	7	87	~517
Queue Length 95th (ft)	8	#626	42	#239	307	39	#178	154	5	20	124	#751
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	125	1757	572	343	2376	819	250	1473	660	125	1190	637
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	1.06	0.11	1.06	0.54	0.18	1.00	0.29	0.00	0.16	0.27	1.13

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	107	1926	202	128	1408	39	200	125	73	15	785	149
v/c Ratio	0.44	0.91	0.27	0.65	0.68	0.06	0.75	0.10	0.12	0.07	0.91	0.31
Control Delay	37.1	27.9	5.5	49.8	19.6	5.7	52.3	16.7	6.0	32.1	43.3	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	27.9	5.5	49.8	19.6	5.7	52.3	16.7	6.0	32.1	43.3	7.6
Queue Length 50th (ft)	23	284	13	28	183	1	44	17	0	3	173	5
Queue Length 95th (ft)	46	#397	51	#64	233	17	#97	41	28	11	#277	47
Internal Link Dist (ft)		3260			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	245	2120	748	196	2061	664	266	1255	608	211	859	485
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.91	0.27	0.65	0.68	0.06	0.75	0.10	0.12	0.07	0.91	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

38: Shaw Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	268	2098	97	178	1242	45	220	476	229	258	414	560
v/c Ratio	0.63	0.98	0.14	0.93	0.69	0.08	0.96	0.59	0.50	0.65	0.42	0.96
Control Delay	44.5	41.2	8.4	94.1	27.4	7.2	94.3	34.6	17.8	46.0	28.2	50.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	41.2	8.4	94.1	27.4	7.2	94.3	34.6	17.8	46.0	28.2	50.3
Queue Length 50th (ft)	75	418	14	53	221	1	65	128	47	72	101	215
Queue Length 95th (ft)	114	#544	43	#117	272	23	#137	180	117	112	144	#430
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	458	2147	701	191	1803	589	229	808	461	420	983	585
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.98	0.14	0.93	0.69	0.08	0.96	0.59	0.50	0.61	0.42	0.96

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

39: Shaw Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	96	1971	161	176	1491	67	196	513	238	190	435	58
v/c Ratio	0.42	0.94	0.22	0.77	0.67	0.09	0.86	0.60	0.49	0.83	0.51	0.14
Control Delay	39.5	31.7	5.0	58.0	19.2	5.1	68.9	28.9	14.7	65.2	27.2	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.5	31.7	5.0	58.0	19.2	5.1	68.9	28.9	14.7	65.2	27.2	7.9
Queue Length 50th (ft)	22	310	8	42	204	2	47	112	38	46	92	0
Queue Length 95th (ft)	45	#426	42	#91	255	23	#104	161	102	#100	136	27
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	229	2102	731	229	2224	726	229	849	484	229	849	424
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.94	0.22	0.77	0.67	0.09	0.86	0.60	0.49	0.83	0.51	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1314	37	108	635	57	436	192	196
v/c Ratio	0.84	0.07	0.68	0.29	0.46	0.81	0.51	0.17
Control Delay	25.9	8.0	52.0	10.7	41.0	23.3	35.2	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	8.0	52.0	10.7	41.0	23.3	35.2	7.3
Queue Length 50th (ft)	167	1	39	51	20	72	33	10
Queue Length 95th (ft)	#250	19	#111	73	#62	#165	#87	30
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1597	519	158	2336	123	631	374	1168
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.07	0.68	0.27	0.46	0.69	0.51	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

41: Ashlan Ave & Golden State

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	377	985	632	204	198	208	401	202	247
v/c Ratio	1.25	0.55	0.60	0.42	0.50	0.51	0.46	0.38	0.44
Control Delay	166.7	18.9	27.0	6.7	28.3	28.5	8.9	25.0	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	166.7	18.9	27.0	6.7	28.3	28.5	8.9	25.0	6.3
Queue Length 50th (ft)	~107	118	88	0	77	82	22	37	0
Queue Length 95th (ft)	#188	154	122	48	143	148	60	67	52
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	302	1889	1162	519	395	406	875	527	561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.25	0.52	0.54	0.39	0.50	0.51	0.46	0.38	0.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: Parkway Dr & Herndon Ave

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	88	38	15	47	601	88
v/c Ratio	0.13	0.02	0.01	0.06	0.55	0.16
Control Delay	8.1	7.3	7.4	3.7	12.8	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.1	7.3	7.4	3.7	12.8	3.1
Queue Length 50th (ft)	9	2	1	0	57	0
Queue Length 95th (ft)	34	8	5	14	69	15
Internal Link Dist (ft)		297	586		197	
Turn Bay Length (ft)						
Base Capacity (vph)	687	1747	1747	805	1406	700
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.02	0.01	0.06	0.43	0.13

Intersection Summary

Lane Group	NWL	NWR	NET	SWT
Lane Group Flow (vph)	38	692	80	676
v/c Ratio	0.09	0.58	0.09	0.73
Control Delay	12.1	3.6	4.9	12.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.1	3.6	4.9	12.1
Queue Length 50th (ft)	5	0	5	66
Queue Length 95th (ft)	24	32	23	216
Internal Link Dist (ft)	320		414	193
Turn Bay Length (ft)		200		
Base Capacity (vph)	703	1525	1149	1149
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.05	0.45	0.07	0.59

Intersection Summary

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	680	216	127	221	256	33	353	114	115	372	479
v/c Ratio	0.74	0.24	0.26	0.49	0.52	0.11	0.29	0.24	0.45	0.28	0.53
Control Delay	30.2	21.1	5.9	32.1	19.0	29.9	23.5	6.8	34.8	27.6	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.2	21.1	5.9	32.1	19.0	29.9	23.5	6.8	34.8	27.6	15.0
Queue Length 50th (ft)	127	36	0	45	29	7	49	0	51	77	90
Queue Length 95th (ft)	#235	64	36	78	59	19	70	36	m94	113	117
Internal Link Dist (ft)		665			800		120			583	
Turn Bay Length (ft)	200		250	200		200		80	200		
Base Capacity (vph)	917	1163	605	458	844	301	1380	513	254	1362	904
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.19	0.21	0.48	0.30	0.11	0.26	0.22	0.45	0.27	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

6: Herndon Ave & Bullard Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	361	528	170	8	454	149	162	109	3	185	151	326
v/c Ratio	1.23	0.36	0.29	0.04	0.53	0.38	0.16	0.08	0.00	0.45	0.19	0.53
Control Delay	159.7	24.0	11.1	31.7	28.5	7.7	20.1	14.7	11.0	32.1	22.5	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	159.7	24.0	11.1	31.7	28.5	7.7	20.1	14.7	11.0	32.1	22.5	6.6
Queue Length 50th (ft)	~106	66	17	1	67	0	26	14	0	38	27	0
Queue Length 95th (ft)	m#178	m92	m48	8	89	42	52	32	5	68	50	59
Internal Link Dist (ft)		1281			2700			1557			524	
Turn Bay Length (ft)	165		165	165		165	65			65		65
Base Capacity (vph)	294	1470	578	196	1162	477	992	1403	630	428	809	613
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.23	0.36	0.29	0.04	0.39	0.31	0.16	0.08	0.00	0.43	0.19	0.53

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	641	45	128	562	61	408	54	385
v/c Ratio	0.24	0.59	0.12	0.56	0.46	0.20	0.49	0.17	0.46
Control Delay	29.2	23.1	7.1	37.5	20.6	27.3	16.3	27.1	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	23.1	7.1	37.5	20.6	27.3	16.3	27.1	16.7
Queue Length 50th (ft)	9	76	0	23	65	10	114	9	114
Queue Length 95th (ft)	24	101	20	#52	88	27	201	24	195
Internal Link Dist (ft)		2700			1876		1081		369
Turn Bay Length (ft)	350		250	250		140		100	
Base Capacity (vph)	229	1356	455	229	1410	311	828	310	841
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.47	0.10	0.56	0.40	0.20	0.49	0.17	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NER
Lane Group Flow (vph)	563	1643	560	1372
v/c Ratio	0.51	0.74	0.11	0.57
Control Delay	9.2	9.8	0.0	6.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.2	9.8	0.0	6.4
Queue Length 50th (ft)	15	152	0	77
Queue Length 95th (ft)	21	275	0	141
Internal Link Dist (ft)	870		578	
Turn Bay Length (ft)				
Base Capacity (vph)	1356	2231	5085	2398
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.42	0.74	0.11	0.57

Intersection Summary

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	9	2021	54	457	2253	251	47	493	325	178	26
v/c Ratio	0.07	1.04	0.09	1.05	0.83	0.28	0.38	1.01	1.04	0.30	0.05
Control Delay	52.5	65.8	9.3	102.4	25.8	10.1	60.6	78.4	111.2	30.2	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	65.8	9.3	102.4	25.8	10.1	60.6	78.4	111.2	30.2	10.0
Queue Length 50th (ft)	3	~566	5	~180	453	53	17	~310	~128	96	0
Queue Length 95th (ft)	11	#663	31	#283	#628	120	37	#530	#220	156	20
Internal Link Dist (ft)		578			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	125	1942	630	437	2700	884	125	488	312	603	530
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	1.04	0.09	1.05	0.83	0.28	0.38	1.01	1.04	0.30	0.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	623	1910	139	176	2080	325	325	315	104	209	341	560
v/c Ratio	1.04	0.78	0.17	0.60	1.04	0.46	1.03	0.43	0.25	0.65	0.46	1.06
Control Delay	94.8	28.8	9.3	61.7	68.8	17.3	112.3	43.9	9.3	62.4	44.0	82.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.8	28.8	9.3	61.7	68.8	17.3	112.3	43.9	9.3	62.4	44.0	82.7
Queue Length 50th (ft)	~268	443	27	68	~640	102	~139	113	0	81	122	~315
Queue Length 95th (ft)	#384	507	65	106	#735	184	#232	160	47	122	170	#538
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	601	2447	799	315	1992	705	315	731	410	343	737	527
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.78	0.17	0.56	1.04	0.46	1.03	0.43	0.25	0.61	0.46	1.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

11: Herndon Ave & N. Blythe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	20	2200	1	4	2572	65	2	4	65	1	28
v/c Ratio	0.10	0.68	0.00	0.02	0.82	0.07	0.01	0.01	0.38	0.00	0.10
Control Delay	45.1	13.6	7.0	44.8	19.3	6.1	44.5	0.0	52.6	34.0	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.1	13.6	7.0	44.8	19.3	6.1	44.5	0.0	52.6	34.0	13.8
Queue Length 50th (ft)	6	271	0	1	364	6	0	0	21	1	0
Queue Length 95th (ft)	18	460	3	7	#691	30	4	0	43	5	24
Internal Link Dist (ft)		2270			2660			994		634	
Turn Bay Length (ft)	220		140	220		140	235		120		120
Base Capacity (vph)	208	3246	1011	193	3130	986	549	882	172	309	286
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.68	0.00	0.02	0.82	0.07	0.00	0.00	0.38	0.00	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	130	1860	437	309	2379	97	433	178	432	46	135	129
v/c Ratio	0.85	0.91	0.54	0.81	1.00	0.13	1.03	0.17	0.73	0.30	0.20	0.35
Control Delay	86.2	34.0	9.0	57.0	44.0	8.8	92.6	24.7	26.2	47.0	31.7	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.2	34.0	9.0	57.0	44.0	8.8	92.6	24.7	26.2	47.0	31.7	14.5
Queue Length 50th (ft)	38	358	50	90	~480	17	~137	41	142	13	34	18
Queue Length 95th (ft)	#91	#445	134	#155	#617	44	#230	67	#295	30	60	67
Internal Link Dist (ft)		2660			4430			2164			665	
Turn Bay Length (ft)	290		150	310		100	105		75	80		80
Base Capacity (vph)	153	2034	813	381	2373	761	420	1070	595	153	668	373
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.91	0.54	0.81	1.00	0.13	1.03	0.17	0.73	0.30	0.20	0.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

13: Herndon Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	336	1935	265	221	2366	393	228	298	199	272	235	503
v/c Ratio	0.98	0.79	0.33	0.79	1.00	0.51	1.05	0.48	0.50	0.68	0.29	1.06
Control Delay	93.8	26.8	13.9	69.7	49.3	18.6	123.8	44.4	16.5	55.5	36.4	88.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.8	26.8	13.9	69.7	49.3	18.6	123.8	44.4	16.5	55.5	36.4	88.4
Queue Length 50th (ft)	124	405	79	80	~600	147	~90	102	29	95	72	~305
Queue Length 95th (ft)	#217	469	138	#140	#735	236	#170	147	101	139	108	#515
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		50	245		125	160		160
Base Capacity (vph)	343	2450	800	281	2358	778	218	616	401	437	804	474
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.79	0.33	0.79	1.00	0.51	1.05	0.48	0.50	0.62	0.29	1.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

14: Herndon Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	107	2121	118	217	2761	238	98	352	105	134	397	151
v/c Ratio	0.70	0.83	0.14	0.71	1.00	0.26	0.64	0.53	0.28	0.88	0.38	0.38
Control Delay	67.2	23.0	3.4	53.9	37.8	5.4	45.4	30.7	15.6	90.8	32.6	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.2	23.0	3.4	53.9	37.8	5.4	45.4	30.7	15.6	90.8	32.6	17.9
Queue Length 50th (ft)	31	361	2	62	539	27	27	111	16	39	73	31
Queue Length 95th (ft)	#72	430	29	#111	#697	63	m#51	m144	m57	#94	104	86
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	153	2543	846	305	2769	924	153	668	369	153	1051	397
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.83	0.14	0.71	1.00	0.26	0.64	0.53	0.28	0.88	0.38	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

15: Herndon Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	803	1649	101	104	2203	183	267	1263	63	301	1445	837
v/c Ratio	1.29	0.80	0.15	0.25	1.25	0.31	1.22	0.98	0.14	1.20	1.08	1.10
Control Delay	178.5	31.7	5.3	48.1	151.7	16.5	178.5	61.0	8.9	167.3	87.4	91.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	178.5	31.7	5.3	48.1	151.7	16.5	178.5	61.0	8.9	167.3	87.4	91.2
Queue Length 50th (ft)	~372	363	5	35	~714	52	~119	324	0	~133	~417	~672
Queue Length 95th (ft)	#494	385	34	65	#810	108	#204	#426	33	#222	#513	#914
Internal Link Dist (ft)		5199			5182			5342			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	624	2358	781	416	1757	597	218	1294	450	250	1341	763
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.29	0.70	0.13	0.25	1.25	0.31	1.22	0.98	0.14	1.20	1.08	1.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	163	1991	350	475	1798	371	145	868	122	316	1145	418
v/c Ratio	0.55	0.98	0.48	0.96	0.77	0.44	0.95	0.96	0.34	0.92	0.96	0.82
Control Delay	46.8	43.1	13.6	71.0	23.3	8.8	105.7	59.5	12.5	74.0	54.0	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.8	43.1	13.6	71.0	23.3	8.8	105.7	59.5	12.5	74.0	54.0	33.0
Queue Length 50th (ft)	46	399	78	140	304	55	43	181	10	93	236	130
Queue Length 95th (ft)	78	#522	156	#236	365	123	#102	#265	57	#172	#330	#288
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	305	2034	723	496	2329	837	153	904	364	343	1187	510
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.98	0.48	0.96	0.77	0.44	0.95	0.96	0.34	0.92	0.96	0.82

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBL	NBR
Lane Group Flow (vph)	525	154	62	112
v/c Ratio	0.37	0.21	0.07	0.22
Control Delay	5.8	1.9	7.8	3.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.8	1.9	7.8	3.7
Queue Length 50th (ft)	17	0	2	0
Queue Length 95th (ft)	36	12	9	17
Internal Link Dist (ft)	586		2735	
Turn Bay Length (ft)		100		100
Base Capacity (vph)	1866	908	1637	814
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.28	0.17	0.04	0.14

Intersection Summary

20: Hayes Ave. & Veterans Ave.

Lane Group	SER	NEL	NET	SWT
Lane Group Flow (vph)	508	514	1372	1643
v/c Ratio	0.84	0.81	0.65	0.74
Control Delay	26.5	24.8	11.4	11.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	26.5	24.8	11.4	11.9
Queue Length 50th (ft)	93	96	86	105
Queue Length 95th (ft)	#231	#225	123	148
Internal Link Dist (ft)			1398	1849
Turn Bay Length (ft)		150		
Base Capacity (vph)	635	663	2095	2225
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.80	0.78	0.65	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

21: Bullard Ave. & Veterans Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	12	151	155	303	148	27	185	2173	234	33	2360	28
v/c Ratio	0.08	0.36	0.59	0.93	0.17	0.07	0.91	0.73	0.23	0.21	0.87	0.03
Control Delay	43.0	36.1	26.6	74.9	26.2	10.9	85.0	15.7	4.1	43.4	22.1	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	36.1	26.6	74.9	26.2	10.9	85.0	15.7	4.1	43.4	22.1	6.3
Queue Length 50th (ft)	3	38	35	82	31	0	50	302	15	8	362	2
Queue Length 95th (ft)	12	67	93	#173	62	21	#121	430	55	24	#520	16
Internal Link Dist (ft)		2411			677			1507			1398	
Turn Bay Length (ft)	150		150	150		150	150		150	150		150
Base Capacity (vph)	152	629	350	327	879	414	204	2983	998	157	2723	856
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.24	0.44	0.93	0.17	0.07	0.91	0.73	0.23	0.21	0.87	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

22: Bullard Ave. & W. Sierra Ave.

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	220	198	188	38	22	290
v/c Ratio	0.52	0.11	0.28	0.11	0.03	0.38
Control Delay	16.9	4.0	13.9	6.9	12.6	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	4.0	13.9	6.9	12.6	4.2
Queue Length 50th (ft)	33	6	15	0	4	0
Queue Length 95th (ft)	96	20	41	17	16	42
Internal Link Dist (ft)		677	2766		701	
Turn Bay Length (ft)	150			150	150	
Base Capacity (vph)	490	2209	1215	569	852	912
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.09	0.15	0.07	0.03	0.32

Intersection Summary

23: W. Sierra Ave. & N. Polk Ave.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	39	251	3	220	93	157	152	112	230	51
v/c Ratio	0.11	0.44	0.01	0.39	0.17	0.28	0.17	0.19	0.25	0.06
Control Delay	7.8	8.3	7.0	9.5	3.2	8.4	6.8	7.4	7.3	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	8.3	7.0	9.5	3.2	8.4	6.8	7.4	7.3	2.9
Queue Length 50th (ft)	3	16	0	18	0	13	11	9	18	0
Queue Length 95th (ft)	16	60	3	63	17	48	40	34	59	11
Internal Link Dist (ft)		2293		4207			2050		2531	
Turn Bay Length (ft)										
Base Capacity (vph)	510	820	495	822	750	669	1086	718	1089	946
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.31	0.01	0.27	0.12	0.23	0.14	0.16	0.21	0.05

Intersection Summary

24: Veterans Ave. & Golden State

Lane Group	NBL	NBT	NBR	SBL	SBT	SEL	SET	NWL	NWT
Lane Group Flow (vph)	24	2455	498	29	3573	7	147	476	442
v/c Ratio	0.39	0.95	0.51	0.47	1.10	0.12	0.62	1.11	1.03
Control Delay	72.3	36.1	7.7	78.4	76.3	61.0	11.5	117.4	92.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.3	36.1	7.7	78.4	76.3	61.0	11.5	117.4	92.3
Queue Length 50th (ft)	17	604	60	21	~859	5	0	~420	~355
Queue Length 95th (ft)	#51	#841	168	#65	#1033	23	0	#695	#623
Internal Link Dist (ft)		1314			1507		858		751
Turn Bay Length (ft)	380		250	320		310		300	
Base Capacity (vph)	62	2587	974	62	3260	58	238	428	428
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.95	0.51	0.47	1.10	0.12	0.62	1.11	1.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

25: Bullard Ave. & N. Grantland Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	13	4	2	46	66	9	23	59	70
v/c Ratio	0.10	0.04	0.01	0.01	0.13	0.19	0.01	0.01	0.07	0.07
Control Delay	6.3	5.6	4.0	5.5	6.3	3.2	4.9	4.6	4.7	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	5.6	4.0	5.5	6.3	3.2	4.9	4.6	4.7	2.7
Queue Length 50th (ft)	3	1	0	0	5	0	1	1	4	1
Queue Length 95th (ft)	7	4	2	2	10	8	3	3	11	9
Internal Link Dist (ft)		1175			1887			2526		2735
Turn Bay Length (ft)										
Base Capacity (vph)	476	654	559	490	654	599	948	2534	990	1210
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.02	0.01	0.00	0.07	0.11	0.01	0.01	0.06	0.06

Intersection Summary

26: Veterans Ave. & SR-99 NB Ramps

Lane Group	NBT	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	1986	3478	233	679	985
v/c Ratio	0.71	0.99	0.15	0.56	1.00
Control Delay	15.1	31.1	0.2	23.3	56.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	31.1	0.2	23.3	56.5
Queue Length 50th (ft)	248	461	0	139	~273
Queue Length 95th (ft)	303	#600	0	192	#424
Internal Link Dist (ft)	222	1314			
Turn Bay Length (ft)			380		
Base Capacity (vph)	2797	3524	1583	1202	984
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.71	0.99	0.15	0.56	1.00

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

27: Veterans Ave. & SR 99 SB Ramps

Lane Group	NBT	NBR	SBT	SEL	SER
Lane Group Flow (vph)	2218	383	2940	40	205
v/c Ratio	0.65	0.24	0.86	0.11	0.65
Control Delay	7.7	0.4	13.2	17.9	29.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.7	0.4	13.2	17.9	29.8
Queue Length 50th (ft)	143	0	254	11	62
Queue Length 95th (ft)	231	0	#497	31	117
Internal Link Dist (ft)	987		279		
Turn Bay Length (ft)		400			
Base Capacity (vph)	3414	1583	3414	433	388
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.65	0.24	0.86	0.09	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

28: Bullard Ave. & N. Carnegie Ave.

Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Group Flow (vph)	108	84	848	110	152	1224
v/c Ratio	0.26	0.33	0.82	0.04	0.55	0.53
Control Delay	34.9	12.4	21.7	3.1	38.7	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	12.4	21.7	3.1	38.7	1.5
Queue Length 50th (ft)	25	0	291	5	69	15
Queue Length 95th (ft)	52	40	#623	14	129	32
Internal Link Dist (ft)	2766			945	941	
Turn Bay Length (ft)		150	200		200	
Base Capacity (vph)	772	411	1097	2859	379	2366
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.20	0.77	0.04	0.40	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

29: Golden State & N. Carnegie Ave.

Lane Group	SEL	SET	NWL	NWT	NWR	NET	SWL	SWT	SWR
Lane Group Flow (vph)	586	263	55	334	776	258	118	125	726
v/c Ratio	1.00	0.16	0.42	0.51	0.97	0.91	0.42	0.44	0.98
Control Delay	72.9	12.3	54.2	39.5	35.5	76.4	43.2	43.6	39.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.9	12.3	54.2	39.5	35.5	76.4	43.2	43.6	39.8
Queue Length 50th (ft)	~373	37	34	101	110	158	72	76	110
Queue Length 95th (ft)	#602	62	73	145	#383	#307	131	137	#373
Internal Link Dist (ft)		2208		2920		303		941	
Turn Bay Length (ft)					65				
Base Capacity (vph)	584	1607	142	672	802	287	278	282	739
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.16	0.39	0.50	0.97	0.90	0.42	0.44	0.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

30: Bullard Ave. & Dante Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	110	1064	61	61	850	82	61	7	10	65	15	29
v/c Ratio	0.51	0.70	0.09	0.40	0.56	0.11	0.12	0.01	0.02	0.12	0.02	0.05
Control Delay	18.3	12.6	2.8	17.3	10.5	2.6	10.4	9.3	6.0	10.5	9.6	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	12.6	2.8	17.3	10.5	2.6	10.4	9.3	6.0	10.5	9.6	4.9
Queue Length 50th (ft)	18	100	0	9	73	0	10	0	0	11	2	0
Queue Length 95th (ft)	#58	151	13	36	112	15	29	3	7	30	11	11
Internal Link Dist (ft)		1442			3543			564			4207	
Turn Bay Length (ft)												
Base Capacity (vph)	235	1652	771	165	1652	782	529	1345	608	533	708	620
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.64	0.08	0.37	0.51	0.10	0.12	0.01	0.02	0.12	0.02	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

31: Bullard Ave. & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	226	934	103	1013	493	343	1284	112	71	523	1100
v/c Ratio	0.79	1.38	0.28	1.86	0.42	1.79	1.09	0.19	1.20	0.57	1.39
Control Delay	67.5	216.6	14.1	418.9	30.4	405.6	91.9	10.5	230.9	41.7	201.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.5	216.6	14.1	418.9	30.4	405.6	91.9	10.5	230.9	41.7	201.3
Queue Length 50th (ft)	170	~504	12	~1193	142	~398	~588	16	~67	186	~821
Queue Length 95th (ft)	246	#635	60	#1446	206	#585	#726	57	#165	244	#1081
Internal Link Dist (ft)		2564			1707		4355			5342	
Turn Bay Length (ft)											
Base Capacity (vph)	353	678	372	546	1178	192	1180	582	59	914	794
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	1.38	0.28	1.86	0.42	1.79	1.09	0.19	1.20	0.57	1.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

32: Bullard Ave. & Veterans Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	296	153	24	161	230	710	22	1557	107	686	2011	449
v/c Ratio	0.56	0.47	0.08	0.64	0.75	0.59	0.28	1.04	0.21	1.00	0.78	0.37
Control Delay	38.1	37.2	13.1	47.0	50.6	19.9	51.3	66.6	11.3	71.3	22.2	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	37.2	13.1	47.0	50.6	19.9	51.3	66.6	11.3	71.3	22.2	3.3
Queue Length 50th (ft)	78	76	0	84	120	146	12	~354	14	~211	302	24
Queue Length 95th (ft)	119	137	21	149	#219	217	37	#466	54	#331	#506	76
Internal Link Dist (ft)		926			557			1285			987	
Turn Bay Length (ft)	150		150	150		150	150		150	150		150
Base Capacity (vph)	623	363	328	302	342	1194	79	1495	517	686	2569	1208
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.42	0.07	0.53	0.67	0.59	0.28	1.04	0.21	1.00	0.78	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

33: Barstow Ave. & N. Grantland Ave.

Lane Group	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	179	351	54	51	14
v/c Ratio	0.25	0.50	0.11	0.09	0.03
Control Delay	5.4	8.0	8.3	8.0	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.4	8.0	8.3	8.0	4.8
Queue Length 50th (ft)	10	25	4	4	0
Queue Length 95th (ft)	28	58	19	17	6
Internal Link Dist (ft)	265	401	2578	2526	
Turn Bay Length (ft)					50
Base Capacity (vph)	925	935	751	876	759
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.19	0.38	0.07	0.06	0.02

Intersection Summary

34: Shaw Ave & SR 99 SB Off Ramps

Lane Group	EBT	EBR	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	1676	601	2347	162	604	507
v/c Ratio	0.65	0.38	0.91	0.10	0.92	0.86
Control Delay	13.6	0.7	22.6	0.1	41.1	35.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	0.7	22.6	0.1	41.1	35.7
Queue Length 50th (ft)	172	0	299	0	217	176
Queue Length 95th (ft)	219	0	#432	0	#403	#342
Internal Link Dist (ft)	8376		500			
Turn Bay Length (ft)		150				
Base Capacity (vph)	2566	1583	2566	1583	681	609
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.38	0.91	0.10	0.89	0.83

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

35: Shaw Ave & SR 99 NB Off Ramps

Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	1434	108	2614	772	1051	342
v/c Ratio	0.66	0.07	1.20	0.49	1.19	0.43
Control Delay	26.9	0.1	126.2	1.1	123.3	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.9	0.1	126.2	1.1	123.3	19.0
Queue Length 50th (ft)	289	0	~824	0	~896	143
Queue Length 95th (ft)	342	0	#917	0	#1145	217
Internal Link Dist (ft)	500		2498			
Turn Bay Length (ft)				150		
Base Capacity (vph)	2173	1583	2173	1583	885	797
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.07	1.20	0.49	1.19	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	13	1689	65	627	2455	448	235	327	11	57	827	1008
v/c Ratio	0.11	1.17	0.14	1.22	1.10	0.56	1.18	0.23	0.02	0.40	0.62	1.30
Control Delay	58.5	124.0	17.7	144.6	73.8	9.9	167.4	24.3	11.1	64.5	33.1	170.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.5	124.0	17.7	144.6	73.8	9.9	167.4	24.3	11.1	64.5	33.1	170.0
Queue Length 50th (ft)	5	~571	16	~303	~762	125	~111	88	0	22	272	~857
Queue Length 95th (ft)	16	#668	52	m#320	m#868	m202	#195	123	12	45	340	#1114
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	114	1441	474	515	2237	807	200	1439	651	143	1327	774
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	1.17	0.14	1.22	1.10	0.56	1.18	0.23	0.02	0.40	0.62	1.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	329	1962	280	168	2276	90	492	768	102	402	487	196
v/c Ratio	1.04	0.84	0.35	0.73	1.03	0.13	0.96	0.96	0.26	1.00	0.72	0.49
Control Delay	90.0	16.1	4.6	57.9	42.1	12.1	80.9	70.7	22.8	98.7	52.3	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.0	16.1	4.6	57.9	42.1	12.1	80.9	70.7	22.8	98.7	52.3	21.6
Queue Length 50th (ft)	~146	204	23	69	~491	16	197	312	33	~163	187	50
Queue Length 95th (ft)	m115	m166	m10	m61	m284	m13	#303	#439	83	#269	248	125
Internal Link Dist (ft)		3260			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	315	2331	798	229	2204	705	515	796	394	401	678	401
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.84	0.35	0.73	1.03	0.13	0.96	0.96	0.26	1.00	0.72	0.49

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

38: Shaw Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	505	1895	289	451	1682	195	495	667	173	192	362	773
v/c Ratio	1.10	1.15	0.49	1.12	1.07	0.35	1.15	0.56	0.28	0.64	0.34	1.19
Control Delay	119.4	99.4	10.3	131.3	84.9	17.4	139.1	34.7	11.9	63.3	33.9	128.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.4	99.4	10.3	131.3	84.9	17.4	139.1	34.7	11.9	63.3	33.9	128.0
Queue Length 50th (ft)	~223	~641	59	~208	~530	55	~232	222	31	75	114	~583
Queue Length 95th (ft)	m#295	m#725	m79	#313	#627	119	#341	284	85	114	158	#827
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	458	1653	594	401	1568	557	429	1196	611	315	1062	648
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.10	1.15	0.49	1.12	1.07	0.35	1.15	0.56	0.28	0.61	0.34	1.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	335	1557	54	90	1714	243	171	374	121	304	876	93
v/c Ratio	0.88	0.69	0.07	0.47	0.92	0.36	0.90	0.50	0.28	0.66	0.86	0.18
Control Delay	64.7	22.7	6.1	49.7	36.7	10.0	86.8	34.5	8.0	57.1	36.9	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.7	22.7	6.1	49.7	36.7	10.0	86.8	34.5	8.0	57.1	36.9	10.2
Queue Length 50th (ft)	98	262	2	26	335	36	51	101	0	91	168	4
Queue Length 95th (ft)	#173	317	23	50	#437	93	#111	146	44	m134	#353	m29
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	381	2249	727	191	1865	674	191	744	428	496	1022	503
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.69	0.07	0.47	0.92	0.36	0.90	0.50	0.28	0.61	0.86	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1093	78	354	979	61	593	287	320
v/c Ratio	0.88	0.18	0.88	0.37	0.42	0.86	0.70	0.30
Control Delay	39.0	11.4	41.2	19.9	43.9	22.1	45.5	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.0	11.4	41.2	19.9	43.9	22.1	45.5	15.6
Queue Length 50th (ft)	194	8	188	172	29	63	71	42
Queue Length 95th (ft)	#273	41	m#227	m184	66	#250	#139	76
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1245	431	410	2670	155	720	409	1072
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.18	0.86	0.37	0.39	0.82	0.70	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

41: Ashlan Ave & Golden State

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	358	1157	1263	499	282	320	574	234	409
v/c Ratio	0.93	0.54	0.95	0.79	0.75	0.80	0.75	0.58	0.75
Control Delay	55.6	26.4	44.8	22.3	42.9	46.8	27.0	35.6	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.6	26.4	44.8	22.3	42.9	46.8	27.0	35.6	19.8
Queue Length 50th (ft)	94	202	226	96	138	160	105	55	55
Queue Length 95th (ft)	m#131	m232	#318	#259	#256	#295	169	91	#188
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	386	2161	1335	629	378	398	763	403	544
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.54	0.95	0.79	0.75	0.80	0.75	0.58	0.75

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

EXISTING PLUS PROJECT PHASES 1-5 TRAFFIC CONDITION

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	360	126	136	174	154	167	36	1933	221	767	416
v/c Ratio	1.22	0.46	0.30	0.73	0.72	0.38	0.47	1.19	1.06	0.76	0.34
Control Delay	168.3	53.3	8.5	67.2	69.6	33.5	76.6	123.5	120.8	27.0	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	168.3	53.3	8.5	67.2	69.6	33.5	76.6	123.5	120.8	27.0	3.4
Queue Length 50th (ft)	~343	90	0	131	115	90	28	~948	~202	526	30
Queue Length 95th (ft)	#533	156	53	203	187	156	#83	#1090	m#365	696	68
Internal Link Dist (ft)		665			800			120		1105	
Turn Bay Length (ft)	260		150	185		50	100		80		
Base Capacity (vph)	295	274	460	295	248	440	77	1620	209	1009	1238
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.46	0.30	0.59	0.62	0.38	0.47	1.19	1.06	0.76	0.34

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	592	618	221	1015	541	259
v/c Ratio	0.70	0.73	0.83	0.63	0.74	0.32
Control Delay	25.2	8.8	53.6	14.2	24.3	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	8.8	53.6	14.2	24.3	3.3
Queue Length 50th (ft)	157	124	79	130	168	0
Queue Length 95th (ft)	m138	m78	#184	183	#322	38
Internal Link Dist (ft)	770			1308	870	
Turn Bay Length (ft)		165	165		65	
Base Capacity (vph)	944	875	266	1711	727	802
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.71	0.83	0.59	0.74	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	108	772	133	507	978	2	57	210	3	327
v/c Ratio	0.55	0.91	0.28	0.93	0.60	0.00	0.35	0.35	0.02	0.71
Control Delay	48.3	49.6	6.8	55.3	20.6	10.5	47.8	11.7	41.3	38.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.3	49.6	6.8	55.3	20.6	10.5	47.8	11.7	41.3	38.9
Queue Length 50th (ft)	59	223	0	271	215	0	16	28	1	157
Queue Length 95th (ft)	109	#328	44	#456	288	4	36	95	5	#298
Internal Link Dist (ft)		1312			2826			1081		369
Turn Bay Length (ft)	350		250	250		125	140		100	
Base Capacity (vph)	236	866	487	570	1630	730	164	597	164	460
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.89	0.27	0.89	0.60	0.00	0.35	0.35	0.02	0.71

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	7	921	61	359	1333	62	98	388	138	46	26
v/c Ratio	0.03	0.87	0.12	0.76	0.79	0.08	0.43	0.65	0.60	0.09	0.06
Control Delay	29.2	32.1	5.9	39.0	20.4	6.0	35.7	16.4	42.7	19.6	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	32.1	5.9	39.0	20.4	6.0	35.7	16.4	42.7	19.6	8.8
Queue Length 50th (ft)	1	177	0	71	203	4	19	61	28	14	0
Queue Length 95th (ft)	7	#276	23	#128	#411	26	41	#160	#64	37	16
Internal Link Dist (ft)		578			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	211	1089	529	475	1681	773	227	600	230	520	460
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.85	0.12	0.76	0.79	0.08	0.43	0.65	0.60	0.09	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	220	1021	180	76	1246	25	240	217	152	267	343	252
v/c Ratio	0.77	0.60	0.28	0.33	0.92	0.04	0.84	0.20	0.26	0.93	0.32	0.42
Control Delay	47.4	19.1	4.5	30.9	34.4	5.0	55.0	16.3	4.7	70.4	17.3	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.4	19.1	4.5	30.9	34.4	5.0	55.0	16.3	4.7	70.4	17.3	8.1
Queue Length 50th (ft)	41	120	0	13	159	0	45	30	0	51	50	19
Queue Length 95th (ft)	#90	161	38	31	#241	12	#100	53	34	#114	80	67
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	286	1712	653	229	1356	674	286	1062	581	286	1062	601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.60	0.28	0.33	0.92	0.04	0.84	0.20	0.26	0.93	0.32	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

11: Herndon Ave & Bylthe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBR
Lane Group Flow (vph)	2	1448	1	2	1346	54	1	54	3
v/c Ratio	0.01	0.67	0.00	0.01	0.62	0.08	0.00	0.20	0.00
Control Delay	32.0	18.7	9.0	41.5	8.9	1.1	22.0	34.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	18.7	9.0	41.5	8.9	1.1	22.0	34.7	0.0
Queue Length 50th (ft)	0	175	0	0	21	0	0	12	0
Queue Length 95th (ft)	3	241	3	m0	179	m5	2	29	0
Internal Link Dist (ft)		2270			860		994		
Turn Bay Length (ft)	220		140	220		140		120	120
Base Capacity (vph)	255	2174	677	255	2174	705	1535	265	804
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.67	0.00	0.01	0.62	0.08	0.00	0.20	0.00

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	70	1586	165	1321	58	110	217	59	101	53
v/c Ratio	0.44	0.94	0.79	0.66	0.19	0.25	0.41	0.19	0.23	0.13
Control Delay	35.2	36.2	59.6	14.1	25.5	25.6	8.4	25.6	25.3	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	36.2	59.6	14.1	25.5	25.6	8.4	25.6	25.3	8.2
Queue Length 50th (ft)	23	426	76	230	22	42	10	22	39	0
Queue Length 95th (ft)	m39	#526	#172	306	53	84	63	53	78	26
Internal Link Dist (ft)		1720		4430		2164			665	
Turn Bay Length (ft)	290		310		105		75	80		80
Base Capacity (vph)	165	1730	212	2002	308	445	524	306	445	419
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.92	0.78	0.66	0.19	0.25	0.41	0.19	0.23	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	113	1780	57	239	1270	221	105	155	259	191	186	146
v/c Ratio	0.50	1.01	0.07	0.90	0.67	0.25	0.69	0.23	0.65	1.00	0.26	0.34
Control Delay	48.4	46.4	9.5	50.3	33.4	19.2	66.0	32.0	25.4	110.3	31.6	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	46.4	9.5	50.3	33.4	19.2	66.0	32.0	25.4	110.3	31.6	7.9
Queue Length 50th (ft)	32	~517	12	58	415	111	30	39	68	~57	47	0
Queue Length 95th (ft)	59	#699	31	m#107	484	m151	#70	67	151	#127	77	48
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		50	245		125	160		160
Base Capacity (vph)	229	1770	799	267	1888	882	153	668	401	191	708	433
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	1.01	0.07	0.90	0.67	0.25	0.69	0.23	0.65	1.00	0.26	0.34

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	64	2203	154	129	1802	159	86	99	295	238	134	52
v/c Ratio	0.42	0.97	0.20	0.84	0.77	0.20	0.45	0.15	0.77	0.93	0.09	0.10
Control Delay	35.9	44.5	11.3	58.0	34.8	15.1	49.0	31.2	37.3	81.0	24.0	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	44.5	11.3	58.0	34.8	15.1	49.0	31.2	37.3	81.0	24.0	7.9
Queue Length 50th (ft)	17	498	36	40	397	41	24	24	104	136	20	0
Queue Length 95th (ft)	m20	m506	m44	m44	m431	m42	48	47	#230	#276	35	27
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	153	2260	772	153	2350	793	191	668	383	256	1515	508
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.97	0.20	0.84	0.77	0.20	0.45	0.15	0.77	0.93	0.09	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	750	1903	80	298	1103	351	176	876	184	171	886	751
v/c Ratio	0.98	0.99	0.13	0.98	0.89	0.72	0.92	0.64	0.33	0.57	0.83	0.99
Control Delay	55.3	47.7	16.1	89.0	43.0	29.0	91.9	31.7	5.9	47.5	37.8	45.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.3	47.7	16.1	89.0	43.0	29.0	91.9	31.7	5.9	47.5	37.8	45.7
Queue Length 50th (ft)	233	343	15	88	222	115	52	161	0	48	246	226
Queue Length 95th (ft)	m#257	m#372	m16	#171	#298	#221	#115	205	49	81	#328	#485
Internal Link Dist (ft)		5199			5182			5342			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	763	1921	637	305	1243	486	191	1366	560	305	1062	761
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.99	0.13	0.98	0.89	0.72	0.92	0.64	0.33	0.56	0.83	0.99

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	263	1667	140	111	1596	195	54	227	202	229	374	161
v/c Ratio	0.83	0.87	0.20	0.53	0.97	0.32	0.26	0.17	0.38	0.87	0.23	0.26
Control Delay	53.2	26.0	4.0	39.1	39.8	7.7	32.3	19.0	8.6	62.9	17.4	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.2	26.0	4.0	39.1	39.8	7.7	32.3	19.0	8.6	62.9	17.4	4.9
Queue Length 50th (ft)	54	227	0	22	225	16	10	25	14	47	42	0
Queue Length 95th (ft)	#112	#326	32	#46	#327	58	26	42	61	#105	64	38
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	317	1924	686	211	1643	603	211	1330	528	264	1658	625
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.87	0.20	0.53	0.97	0.32	0.26	0.17	0.38	0.87	0.23	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	74	125	3	327	443	58	307	39	4	27	387
v/c Ratio	0.36	0.27	0.01	0.70	0.35	0.10	0.50	0.06	0.03	0.10	0.70
Control Delay	32.1	26.3	18.3	32.1	18.1	7.0	25.5	6.8	31.0	23.8	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.1	26.3	18.3	32.1	18.1	7.0	25.5	6.8	31.0	23.8	10.5
Queue Length 50th (ft)	23	20	0	94	63	0	47	1	1	8	0
Queue Length 95th (ft)	71	51	7	#282	133	26	100	20	10	29	67
Internal Link Dist (ft)		700			578			177		213	
Turn Bay Length (ft)	150		150	150		150	150		150		150
Base Capacity (vph)	228	868	391	491	1429	674	878	608	377	460	683
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.14	0.01	0.67	0.31	0.09	0.35	0.06	0.01	0.06	0.57

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	44	255	108	162	323	4	43	97	205	93	173	63
v/c Ratio	0.23	0.22	0.19	0.35	0.35	0.01	0.06	0.14	0.28	0.30	0.17	0.07
Control Delay	24.6	9.4	3.3	15.6	13.5	10.0	15.8	15.9	4.8	21.0	8.6	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	9.4	3.3	15.6	13.5	10.0	15.8	15.9	4.8	21.0	8.6	3.5
Queue Length 50th (ft)	8	20	0	25	26	0	7	15	0	15	14	0
Queue Length 95th (ft)	40	43	21	82	71	6	32	59	43	65	68	17
Internal Link Dist (ft)		110			220			259			485	
Turn Bay Length (ft)	150		150	150		150				150		150
Base Capacity (vph)	190	1780	850	679	1357	609	888	935	896	329	1214	1053
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.14	0.13	0.24	0.24	0.01	0.05	0.10	0.23	0.28	0.14	0.06

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	193	755	112	113	681	46	438	59	65	453	167
v/c Ratio	0.62	0.89	0.14	0.62	0.50	0.42	0.59	0.16	0.58	0.56	0.34
Control Delay	38.8	33.3	3.4	52.1	19.7	50.2	30.7	8.8	60.9	28.9	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	33.3	3.4	52.1	19.7	50.2	30.7	8.8	60.9	28.9	7.1
Queue Length 50th (ft)	90	327	0	55	131	23	104	0	32	108	0
Queue Length 95th (ft)	152	#563	26	#137	194	#68	151	29	#100	156	48
Internal Link Dist (ft)		2564			1707		4355			5342	
Turn Bay Length (ft)											
Base Capacity (vph)	401	946	859	190	1465	110	918	454	112	963	552
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.80	0.13	0.59	0.46	0.42	0.48	0.13	0.58	0.47	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	716	334	509	730	88	310
v/c Ratio	0.96	0.44	0.82	0.26	0.43	0.68
Control Delay	53.8	9.2	39.8	2.9	42.6	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	9.2	39.8	2.9	42.6	12.4
Queue Length 50th (ft)	396	44	251	38	48	0
Queue Length 95th (ft)	#637	113	#483	81	87	70
Internal Link Dist (ft)	8376			500	257	
Turn Bay Length (ft)		150				
Base Capacity (vph)	743	759	624	2815	334	550
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.44	0.82	0.26	0.26	0.56

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	103	991	1058	209	118	220
v/c Ratio	0.41	0.86	0.68	0.26	0.27	0.39
Control Delay	27.9	18.3	16.2	2.8	22.5	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.9	18.3	16.2	2.8	22.5	6.1
Queue Length 50th (ft)	34	178	140	0	39	0
Queue Length 95th (ft)	73	#401	216	31	77	47
Internal Link Dist (ft)		500	2498		476	
Turn Bay Length (ft)				150		
Base Capacity (vph)	255	1212	1600	830	530	628
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.82	0.66	0.25	0.22	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	41	965	41	217	955	200	171	410	7	14	480	312
v/c Ratio	0.44	0.93	0.08	0.84	0.63	0.25	0.81	0.30	0.01	0.14	0.59	0.56
Control Delay	49.4	42.5	7.3	61.4	19.9	3.5	62.4	17.8	10.7	37.4	29.4	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.4	42.5	7.3	61.4	19.9	3.5	62.4	17.8	10.7	37.4	29.4	10.3
Queue Length 50th (ft)	19	227	0	100	191	0	79	65	0	6	105	21
Queue Length 95th (ft)	#55	#346	21	#214	257	38	#179	118	9	24	153	89
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	94	1039	493	260	1514	792	212	1346	606	97	810	561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.93	0.08	0.83	0.63	0.25	0.81	0.30	0.01	0.14	0.59	0.56

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	99	1105	62	37	1230	222	167	237	61	171	688	140
v/c Ratio	0.43	0.66	0.11	0.16	0.88	0.37	0.43	0.19	0.10	0.50	0.57	0.22
Control Delay	33.1	20.6	6.1	35.2	20.9	2.3	28.5	15.7	5.6	31.2	20.2	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	20.6	6.1	35.2	20.9	2.3	28.5	15.7	5.6	31.2	20.2	4.7
Queue Length 50th (ft)	18	107	0	7	74	0	29	33	0	30	115	0
Queue Length 95th (ft)	38	#186	23	m10	#221	m3	55	57	22	57	168	34
Internal Link Dist (ft)		3260			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	229	1670	561	229	1398	596	401	1245	597	343	1198	628
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.66	0.11	0.16	0.88	0.37	0.42	0.19	0.10	0.50	0.57	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	137	1318	87	111	1034	53	175	392	355	257	413	520
v/c Ratio	0.60	0.89	0.17	0.48	0.70	0.11	0.67	0.36	0.58	0.79	0.36	0.81
Control Delay	48.1	20.8	1.7	46.9	10.0	1.3	43.5	17.5	13.2	48.8	16.8	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.1	20.8	1.7	46.9	10.0	1.3	43.5	17.5	13.2	48.8	16.8	24.8
Queue Length 50th (ft)	21	176	4	23	30	0	32	57	50	48	60	110
Queue Length 95th (ft)	m46	#238	m1	m34	43	m0	#78	91	124	#109	93	#275
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	229	1480	522	229	1480	499	260	1089	611	325	1156	641
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.89	0.17	0.48	0.70	0.11	0.67	0.36	0.58	0.79	0.36	0.81

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	168	1310	147	163	1138	59	205	580	248	140	382	101
v/c Ratio	0.59	0.86	0.25	0.71	0.71	0.11	0.71	0.52	0.39	0.49	0.38	0.19
Control Delay	42.8	14.9	1.4	47.2	22.1	5.9	43.0	19.8	7.3	32.4	18.6	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.8	14.9	1.4	47.2	22.1	5.9	43.0	19.8	7.3	32.4	18.6	5.4
Queue Length 50th (ft)	35	57	0	30	138	0	38	93	15	25	57	0
Queue Length 95th (ft)	m44	m72	m1	#71	183	22	#82	139	63	50	91	29
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	286	1526	578	229	1592	536	287	1110	628	287	1003	521
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.86	0.25	0.71	0.71	0.11	0.71	0.52	0.39	0.49	0.38	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1314	34	118	480	21	391	116	122
v/c Ratio	0.94	0.05	0.76	0.25	0.07	0.76	0.74	0.10
Control Delay	37.1	9.7	66.8	10.4	25.4	24.7	65.4	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	9.7	66.8	10.4	25.4	24.7	65.4	7.2
Queue Length 50th (ft)	321	5	59	63	8	85	58	6
Queue Length 95th (ft)	#464	21	#144	90	27	#220	#142	23
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1416	644	156	1902	285	516	156	1212
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.05	0.76	0.25	0.07	0.76	0.74	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	312	916	500	364	180	249	237	188	322
v/c Ratio	0.89	0.59	0.74	0.63	0.52	0.58	0.55	0.43	0.56
Control Delay	60.4	18.5	37.6	9.8	34.8	17.7	16.2	31.4	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	18.5	37.6	9.8	34.8	17.7	16.2	31.4	7.7
Queue Length 50th (ft)	152	171	123	9	85	43	35	42	0
Queue Length 95th (ft)	#295	229	175	84	151	124	108	73	65
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	359	1593	712	593	343	428	431	436	579
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.58	0.70	0.61	0.52	0.58	0.55	0.43	0.56

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	261	180	63	1089	190	608	73	2473	473	2041	339
v/c Ratio	0.87	0.79	0.20	2.64	0.55	1.06	0.95	1.79	2.25	2.35	0.30
Control Delay	75.7	74.5	40.7	764.3	51.1	89.9	145.6	385.1	597.7	631.2	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.7	74.5	40.7	764.3	51.1	89.9	145.6	385.1	597.7	631.2	5.3
Queue Length 50th (ft)	196	136	40	~1422	135	~504	~70	~1498	~608	~2649	43
Queue Length 95th (ft)	#328	#237	81	#1677	213	#732	#170	#1633	m#650	m#2427	m52
Internal Link Dist (ft)		665			800			120		1105	
Turn Bay Length (ft)	260		150	185		50	100		80		
Base Capacity (vph)	325	248	318	413	348	574	77	1379	210	869	1137
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.73	0.20	2.64	0.55	1.06	0.95	1.79	2.25	2.35	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1363	347	366	825	1178	238
v/c Ratio	1.36	0.62	1.46	0.51	1.40	0.29
Control Delay	195.0	17.2	264.1	24.3	215.8	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	195.0	17.2	264.1	24.3	215.8	9.6
Queue Length 50th (ft)	~744	148	~388	232	~1221	47
Queue Length 95th (ft)	m#492	m95	#578	290	#1479	100
Internal Link Dist (ft)	770			1308	870	
Turn Bay Length (ft)		165	165		65	
Base Capacity (vph)	1003	559	251	1622	841	819
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.36	0.62	1.46	0.51	1.40	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	243	1291	24	272	1129	10	14	385	5	156
v/c Ratio	0.86	0.90	0.04	0.79	0.92	0.02	0.08	0.63	0.03	0.26
Control Delay	62.6	32.5	6.1	53.6	38.9	11.9	37.2	24.0	36.6	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.6	32.5	6.1	53.6	38.9	11.9	37.2	24.0	36.6	19.4
Queue Length 50th (ft)	119	304	0	69	278	1	3	117	1	46
Queue Length 95th (ft)	#243	#437	14	#129	#406	11	12	#283	6	107
Internal Link Dist (ft)		1312			2826			1081		369
Turn Bay Length (ft)	350		250	250		125	140		100	
Base Capacity (vph)	288	1460	667	343	1239	559	185	615	185	596
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.88	0.04	0.79	0.91	0.02	0.08	0.63	0.03	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	28	1326	75	329	1387	123	87	571	389	272	26
v/c Ratio	0.22	1.03	0.12	0.96	0.86	0.16	0.47	1.03	1.04	0.41	0.04
Control Delay	55.9	68.3	8.6	89.3	34.2	12.2	59.0	75.8	104.7	30.0	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	68.3	8.6	89.3	34.2	12.2	59.0	75.8	104.7	30.0	9.2
Queue Length 50th (ft)	10	~528	6	121	475	31	31	~353	~153	148	0
Queue Length 95th (ft)	25	#665	37	#211	#625	69	58	#571	#251	225	20
Internal Link Dist (ft)		578			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	125	1287	614	343	1615	749	187	555	375	661	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	1.03	0.12	0.96	0.86	0.16	0.47	1.03	1.04	0.41	0.04

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	657	1160	442	62	1084	248	242	453	42	138	307	516
v/c Ratio	0.90	0.52	0.48	0.34	0.89	0.38	0.86	0.53	0.10	0.44	0.34	0.76
Control Delay	46.6	16.8	4.3	24.5	46.1	32.6	65.1	27.3	8.6	37.0	24.2	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	16.8	4.3	24.5	46.1	32.6	65.1	27.3	8.6	37.0	24.2	16.5
Queue Length 50th (ft)	154	149	8	14	206	115	58	96	0	31	61	57
Queue Length 95th (ft)	#247	190	63	m23	#268	183	#122	141	23	58	95	#213
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	732	2244	929	183	1220	648	280	861	417	320	897	676
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.52	0.48	0.34	0.89	0.38	0.86	0.53	0.10	0.43	0.34	0.76

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

11: Herndon Ave & Bylthe Ave.

Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	1357	1	4	1405	65	2	4	65	1	7
v/c Ratio	0.65	0.00	0.02	0.63	0.09	0.01	0.00	0.24	0.00	0.01
Control Delay	16.6	8.0	32.2	17.3	3.5	32.0	0.0	34.9	22.0	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	8.0	32.2	17.3	3.5	32.0	0.0	34.9	22.0	13.5
Queue Length 50th (ft)	209	0	1	175	2	0	0	14	0	0
Queue Length 95th (ft)	298	m1	5	176	17	3	0	34	4	10
Internal Link Dist (ft)	2270			860			994		634	
Turn Bay Length (ft)		140	220		140	235		120		120
Base Capacity (vph)	2085	650	256	2220	724	732	1345	276	614	526
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.00	0.02	0.63	0.09	0.00	0.00	0.24	0.00	0.01

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	64	1720	273	1432	334	92	93	22	110	59
v/c Ratio	0.45	1.05	1.03	0.73	1.04	0.19	0.19	0.07	0.23	0.13
Control Delay	53.9	63.2	105.5	19.9	98.1	30.1	7.3	28.6	30.7	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.9	63.2	105.5	19.9	98.1	30.1	7.3	28.6	30.7	8.5
Queue Length 50th (ft)	39	~627	~187	360	~231	46	0	11	55	0
Queue Length 95th (ft)	82	#767	#346	451	#403	87	38	30	102	31
Internal Link Dist (ft)		1720		4430		2164			665	
Turn Bay Length (ft)	290		310		105		75	80		80
Base Capacity (vph)	159	1639	266	1967	322	484	480	337	484	455
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	1.05	1.03	0.73	1.04	0.19	0.19	0.07	0.23	0.13

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	200	1340	145	580	1635	367	135	302	290	217	288	316
v/c Ratio	0.87	0.97	0.23	0.95	0.92	0.44	0.71	0.45	0.57	0.95	0.41	0.74
Control Delay	77.4	46.9	14.3	39.3	40.6	21.8	54.6	15.8	9.2	91.4	33.4	30.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.4	46.9	14.3	39.3	40.6	21.8	54.6	15.8	9.2	91.4	33.4	30.2
Queue Length 50th (ft)	59	386	38	159	535	185	38	57	50	64	75	94
Queue Length 95th (ft)	#121	#541	80	m#197	m572	m205	m48	m77	m77	#134	114	#214
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		50	245		125	160		160
Base Capacity (vph)	229	1376	640	610	1770	843	191	668	509	229	708	429
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.97	0.23	0.95	0.92	0.44	0.71	0.45	0.57	0.95	0.41	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	101	1553	134	405	2383	248	182	209	238	178	213	161
v/c Ratio	0.66	0.80	0.20	0.83	0.95	0.29	0.55	0.31	0.50	0.90	0.21	0.40
Control Delay	45.2	32.2	10.7	53.3	32.0	7.0	45.5	33.0	10.5	85.0	30.6	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	32.2	10.7	53.3	32.0	7.0	45.5	33.0	10.5	85.0	30.6	16.3
Queue Length 50th (ft)	26	347	27	116	468	32	51	54	11	102	37	29
Queue Length 95th (ft)	m31	m361	m35	#188	#607	77	85	86	76	#223	58	85
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	153	1932	684	496	2520	857	343	668	473	197	1037	403
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.80	0.20	0.82	0.95	0.29	0.53	0.31	0.50	0.90	0.21	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	696	1276	101	125	1875	179	240	1242	49	279	1070	879
v/c Ratio	1.22	0.61	0.14	0.56	1.20	0.33	1.20	0.83	0.10	0.82	0.91	1.22
Control Delay	155.4	29.5	5.7	51.3	122.0	13.8	175.6	45.7	9.1	72.9	50.3	135.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	155.4	29.5	5.7	51.3	122.0	13.8	175.6	45.7	9.1	72.9	50.3	135.2
Queue Length 50th (ft)	~340	281	3	48	~623	41	~115	330	0	110	414	~678
Queue Length 95th (ft)	#460	331	38	m61	m#717	m64	#201	389	30	#178	#542	#927
Internal Link Dist (ft)		5199			5182			5342			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	572	2085	704	229	1568	541	200	1488	498	343	1180	722
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.61	0.14	0.55	1.20	0.33	1.20	0.83	0.10	0.81	0.91	1.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	79	1408	351	171	1534	262	155	637	113	291	762	288
v/c Ratio	0.34	0.92	0.57	0.75	0.92	0.40	0.68	0.44	0.21	1.02	0.50	0.48
Control Delay	24.4	48.1	21.0	50.1	32.6	7.1	44.6	18.8	5.2	90.1	18.7	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	48.1	21.0	50.1	32.6	7.1	44.6	18.8	5.2	90.1	18.7	10.2
Queue Length 50th (ft)	17	332	158	32	~202	16	28	68	0	~56	82	30
Queue Length 95th (ft)	m23	#409	m240	#76	#304	64	#67	97	30	#125	114	87
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	229	1526	618	229	1662	652	229	1441	530	286	1526	598
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.92	0.57	0.75	0.92	0.40	0.68	0.44	0.21	1.02	0.50	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	312	530	8	88	477	152	905	275	3	209	76
v/c Ratio	0.90	0.59	0.02	0.70	0.75	0.37	0.94	0.33	0.03	0.71	0.24
Control Delay	66.3	33.2	15.4	66.3	42.1	8.5	49.5	12.6	41.7	48.7	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.3	33.2	15.4	66.3	42.1	8.5	49.5	12.6	41.7	48.7	10.3
Queue Length 50th (ft)	174	148	0	46	133	0	260	62	2	111	0
Queue Length 95th (ft)	#333	198	11	#126	189	50	#393	144	10	185	37
Internal Link Dist (ft)		700			578			177		213	
Turn Bay Length (ft)	150		150	150		150	150		150		150
Base Capacity (vph)	351	946	429	135	690	431	966	828	274	339	350
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.56	0.02	0.65	0.69	0.35	0.94	0.33	0.01	0.62	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	338	433	65	120	609	39	138	185	118	229	97	205
v/c Ratio	0.86	0.25	0.08	0.31	0.79	0.10	0.46	0.59	0.32	0.83	0.14	0.28
Control Delay	50.8	10.8	3.4	26.5	35.2	9.3	31.5	34.8	8.2	56.3	14.7	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	10.8	3.4	26.5	35.2	9.3	31.5	34.8	8.2	56.3	14.7	3.5
Queue Length 50th (ft)	143	52	0	44	132	0	55	76	0	99	27	0
Queue Length 95th (ft)	#300	87	18	93	#220	23	105	135	39	#228	55	36
Internal Link Dist (ft)		110			220			259			485	
Turn Bay Length (ft)	150		150	150		150				150		150
Base Capacity (vph)	409	1808	841	407	814	394	389	409	440	284	790	789
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.24	0.08	0.29	0.75	0.10	0.35	0.45	0.27	0.81	0.12	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	212	1039	108	9	1125	36	1035	157	77	977	95
v/c Ratio	0.83	1.00	0.12	0.16	0.82	0.60	1.03	0.29	1.00	0.90	0.17
Control Delay	75.3	55.8	5.6	64.0	37.7	93.9	76.5	9.9	160.8	51.1	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.3	55.8	5.6	64.0	37.7	93.9	76.5	9.9	160.8	51.1	9.2
Queue Length 50th (ft)	153	718	12	7	396	27	~431	14	~59	372	5
Queue Length 95th (ft)	#284	#1152	43	25	486	#83	#599	68	#166	#535	47
Internal Link Dist (ft)		2564			1707		4355			5342	
Turn Bay Length (ft)											
Base Capacity (vph)	272	1034	910	58	1419	60	1009	545	77	1090	546
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	1.00	0.12	0.16	0.79	0.60	1.03	0.29	1.00	0.90	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	949	93	446	997	155	524
v/c Ratio	1.01	0.11	0.93	0.35	0.68	0.92
Control Delay	63.7	9.7	71.3	3.8	64.8	33.2
Queue Delay	22.4	0.0	0.0	0.3	0.0	5.6
Total Delay	86.0	9.7	71.3	4.1	64.8	38.8
Queue Length 50th (ft)	~779	20	~352	101	113	76
Queue Length 95th (ft)	#1029	49	#565	124	185	#281
Internal Link Dist (ft)	8376			500	257	
Turn Bay Length (ft)		150				
Base Capacity (vph)	935	815	478	2849	266	596
Starvation Cap Reductn	0	0	0	1096	0	0
Spillback Cap Reductn	55	0	0	0	0	42
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.11	0.93	0.57	0.58	0.95

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

35: Shaw Ave & SR 99 NB Off Ramps

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	45	1076	1535	328	258	233
v/c Ratio	0.33	0.94	0.81	0.33	0.55	0.45
Control Delay	35.9	29.2	17.7	2.3	26.8	12.8
Queue Delay	0.0	1.9	0.0	0.0	0.0	0.0
Total Delay	35.9	31.1	17.7	2.3	26.8	12.8
Queue Length 50th (ft)	17	287	258	1	94	33
Queue Length 95th (ft)	#50	#630	#361	36	159	88
Internal Link Dist (ft)		500	2498		476	
Turn Bay Length (ft)				150		
Base Capacity (vph)	136	1185	1887	993	478	525
Starvation Cap Reductn	0	39	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.94	0.81	0.33	0.54	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	10	1362	49	180	1720	397	323	498	48	49	680	596
v/c Ratio	0.17	1.07	0.08	1.02	1.02	0.46	1.15	0.39	0.08	0.45	0.77	1.17
Control Delay	63.0	85.0	15.0	104.4	30.5	2.3	146.9	30.2	7.9	67.4	48.5	126.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	85.0	15.0	104.4	30.5	2.3	146.9	30.2	7.9	67.4	48.5	126.0
Queue Length 50th (ft)	8	~617	12	~133	682	1	~295	154	0	37	258	~457
Queue Length 95th (ft)	27	#756	39	m#160	m#818	m71	#479	204	27	79	330	#683
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	59	1268	584	177	1693	860	280	1283	604	118	885	510
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	1.07	0.08	1.02	1.02	0.46	1.15	0.39	0.08	0.42	0.77	1.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	284	2034	171	258	1964	151	330	821	99	629	384	162
v/c Ratio	0.99	1.04	0.26	1.00	1.03	0.24	0.73	0.99	0.25	1.05	0.39	0.30
Control Delay	78.9	50.1	8.0	112.6	65.9	16.7	59.5	76.0	23.1	97.4	37.2	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.9	50.1	8.0	112.6	65.9	16.7	59.5	76.0	23.1	97.4	37.2	8.2
Queue Length 50th (ft)	109	~626	22	~105	~596	47	127	335	33	~273	128	6
Queue Length 95th (ft)	m102	m513	m20	#194	#693	98	175	#473	82	#390	178	60
Internal Link Dist (ft)		3260			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	286	1949	649	257	1907	630	515	826	404	601	976	546
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	1.04	0.26	1.00	1.03	0.24	0.64	0.99	0.25	1.05	0.39	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	512	2043	223	174	1616	149	422	635	178	209	466	475
v/c Ratio	0.96	0.95	0.30	0.91	0.99	0.26	0.92	0.67	0.35	0.78	0.62	0.91
Control Delay	69.2	36.8	8.3	89.8	50.4	9.0	66.4	33.7	11.5	68.2	46.9	49.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.2	36.8	8.3	89.8	50.4	9.0	66.4	33.7	11.5	68.2	46.9	49.7
Queue Length 50th (ft)	151	400	31	52	331	16	124	170	23	65	139	173
Queue Length 95th (ft)	#249	#520	78	#113	#442	59	#211	229	76	m#87	m163	m#261
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	534	2147	745	191	1639	583	458	944	513	267	747	520
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.95	0.30	0.91	0.99	0.26	0.92	0.67	0.35	0.78	0.62	0.91

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	237	1749	122	151	1480	142	243	370	110	234	604	198
v/c Ratio	0.69	0.93	0.19	0.77	0.89	0.24	0.83	0.41	0.22	0.80	0.66	0.39
Control Delay	42.5	31.4	4.8	60.0	30.4	6.2	56.5	23.2	6.1	53.1	27.5	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	31.4	4.8	60.0	30.4	6.2	56.5	23.2	6.1	53.1	27.5	10.2
Queue Length 50th (ft)	52	257	3	34	217	6	54	69	0	52	122	20
Queue Length 95th (ft)	#96	#360	33	#79	#304	42	#111	106	35	#106	175	69
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	343	1889	658	196	1671	601	294	910	489	294	910	510
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.93	0.19	0.77	0.89	0.24	0.83	0.41	0.22	0.80	0.66	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1042	68	314	1087	50	422	209	189
v/c Ratio	0.95	0.13	0.90	0.56	0.24	0.72	0.88	0.15
Control Delay	48.0	13.4	66.3	14.3	35.2	13.8	74.5	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.0	13.4	66.3	14.3	35.2	13.8	74.5	11.6
Queue Length 50th (ft)	302	13	175	194	25	24	119	21
Queue Length 95th (ft)	#433	43	#324	251	58	124	#245	44
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1107	520	355	1966	212	589	238	1235
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.13	0.88	0.55	0.24	0.72	0.88	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	233	1058	841	732	422	475	426	347	358
v/c Ratio	1.10	0.71	0.91	1.09	0.93	1.07	0.95	1.07	0.73
Control Delay	133.3	27.3	51.6	80.3	64.9	94.4	65.0	111.3	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	133.3	27.3	51.6	80.3	64.9	94.4	65.0	111.3	23.0
Queue Length 50th (ft)	~169	287	274	~347	275	~339	249	~127	70
Queue Length 95th (ft)	#320	363	#388	#574	#471	#558	#455	#217	179
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	212	1486	920	674	454	445	447	323	491
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.71	0.91	1.09	0.93	1.07	0.95	1.07	0.73

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	415	124	267	67	217	121	207	1348	72	159	1185	682
v/c Ratio	0.86	0.15	0.50	0.36	0.49	0.40	0.49	0.69	0.11	0.59	0.81	0.76
Control Delay	53.8	25.3	10.7	42.6	36.2	10.6	37.0	23.7	5.5	40.8	27.0	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	25.3	10.7	42.6	36.2	10.6	37.0	23.7	5.5	40.8	27.0	14.6
Queue Length 50th (ft)	106	26	23	17	54	0	49	206	0	74	273	107
Queue Length 95th (ft)	#185	47	86	37	85	44	84	273	26	133	#402	#273
Internal Link Dist (ft)		665			800			120			1141	
Turn Bay Length (ft)	330		200	310			330		200	330		200
Base Capacity (vph)	480	1019	606	185	708	413	420	1953	652	276	1462	898
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.12	0.44	0.36	0.31	0.29	0.49	0.69	0.11	0.58	0.81	0.76

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	376	1074	545	225	1508	242	529	42	222	224	52	339
v/c Ratio	1.41	0.87	0.70	0.95	1.28	0.41	1.24	0.10	0.42	0.78	0.20	0.80
Control Delay	244.9	45.2	17.7	99.8	166.5	19.4	164.0	40.4	8.2	66.8	47.7	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	244.9	45.2	17.7	99.8	166.5	19.4	164.0	40.4	8.2	66.8	47.7	30.8
Queue Length 50th (ft)	~392	405	137	175	~778	79	~508	26	0	167	36	78
Queue Length 95th (ft)	#586	497	276	#332	#917	152	#722	60	67	247	75	#224
Internal Link Dist (ft)		770			2700			870			524	
Turn Bay Length (ft)	165		165	165		165	65		65	65		65
Base Capacity (vph)	266	1239	774	236	1180	597	428	413	524	354	264	425
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.41	0.87	0.70	0.95	1.28	0.41	1.24	0.10	0.42	0.63	0.20	0.80

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	74	1162	10	176	1555	13	74	313	23	298
v/c Ratio	0.67	0.80	0.02	0.53	0.94	0.02	0.40	0.50	0.12	0.60
Control Delay	66.8	25.1	7.2	50.9	19.5	1.9	43.6	13.0	38.0	28.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.8	25.1	7.2	50.9	19.5	1.9	43.6	13.0	38.0	28.5
Queue Length 50th (ft)	37	246	0	41	389	1	19	40	5	109
Queue Length 95th (ft)	#102	324	9	m64	#517	m1	39	128	17	#217
Internal Link Dist (ft)		2700			3484			1081		369
Turn Bay Length (ft)	350		250	250		125	140		100	
Base Capacity (vph)	111	1548	698	343	1681	756	185	629	185	495
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.75	0.01	0.51	0.93	0.02	0.40	0.50	0.12	0.60

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	8	1374	147	120	1530	108	164	370	186	102
v/c Ratio	0.05	0.86	0.18	0.70	0.81	0.12	0.62	0.82	0.77	0.25
Control Delay	46.4	11.3	0.4	60.1	20.8	5.9	46.9	36.9	60.1	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.4	11.3	0.4	60.1	20.8	5.9	46.9	36.9	60.1	22.5
Queue Length 50th (ft)	2	77	0	31	286	11	41	124	48	33
Queue Length 95th (ft)	m4	100	m1	#71	#526	41	#79	#270	#106	74
Internal Link Dist (ft)		3484			3032			2531		525
Turn Bay Length (ft)	225			250		100	140		200	
Base Capacity (vph)	172	1637	811	172	1881	868	266	453	242	412
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.84	0.18	0.70	0.81	0.12	0.62	0.82	0.77	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	284	1437	193	98	1255	291	173	311	160	529	432	305
v/c Ratio	0.83	0.84	0.30	0.50	0.91	0.45	0.51	0.38	0.34	0.90	0.40	0.51
Control Delay	53.0	28.0	5.4	41.2	36.2	5.4	35.7	24.5	7.7	49.5	20.9	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.0	28.0	5.4	41.2	36.2	5.4	35.7	24.5	7.7	49.5	20.9	12.3
Queue Length 50th (ft)	63	214	5	21	191	0	37	60	5	116	77	43
Queue Length 95th (ft)	#124	#301	47	44	#274	53	65	94	48	#201	115	111
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	343	1714	650	196	1380	642	343	809	474	589	1067	597
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.84	0.30	0.50	0.91	0.45	0.50	0.38	0.34	0.90	0.40	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

11: Herndon Ave & Bylthe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBR
Lane Group Flow (vph)	1	2133	1	2	1647	61	1	61	1
v/c Ratio	0.00	0.70	0.00	0.01	0.54	0.06	0.00	0.31	0.00
Control Delay	40.0	14.7	7.0	39.5	12.1	4.1	30.0	45.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	14.7	7.0	39.5	12.1	4.1	30.0	45.4	0.0
Queue Length 50th (ft)	0	257	0	0	170	3	0	17	0
Queue Length 95th (ft)	3	415	2	4	278	22	2	37	0
Internal Link Dist (ft)		2270			2660		994		
Turn Bay Length (ft)	220		140	220		140		120	120
Base Capacity (vph)	211	3029	943	213	3030	962	1086	195	563
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.70	0.00	0.01	0.54	0.06	0.00	0.31	0.00

Intersection Summary

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	84	2131	402	1440	199	107	458	72	102	52
v/c Ratio	0.56	1.14	1.14	0.61	1.03	0.34	0.94	0.38	0.33	0.17
Control Delay	67.0	99.2	128.0	4.8	122.5	47.8	49.9	51.2	47.5	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.0	99.2	128.0	4.8	122.5	47.8	49.9	51.2	47.5	13.0
Queue Length 50th (ft)	63	~1017	~355	206	~165	74	161	50	70	0
Queue Length 95th (ft)	116	#1156	m#538	m247	#317	130	#371	98	125	36
Internal Link Dist (ft)		2660		4430		2164			665	
Turn Bay Length (ft)	290		310		105		75	80		80
Base Capacity (vph)	177	1864	354	2352	193	311	486	189	311	307
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	1.14	1.14	0.61	1.03	0.34	0.94	0.38	0.33	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

13: Herndon Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	133	2452	112	248	1600	270	166	149	286	241	173	167
v/c Ratio	0.54	1.15	0.12	1.24	0.77	0.27	0.97	0.28	0.90	1.20	0.31	0.48
Control Delay	70.6	89.0	2.1	176.2	18.3	6.4	117.1	46.9	64.3	177.3	46.4	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.6	89.0	2.1	176.2	18.3	6.4	117.1	46.9	64.3	177.3	46.4	21.1
Queue Length 50th (ft)	51	~1193	7	~127	251	36	67	54	151	~117	63	35
Queue Length 95th (ft)	m51	m#1042	m8	m#190	281	m61	#139	87	#313	#202	98	105
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		190	245		125	160		160
Base Capacity (vph)	257	2123	958	200	2076	1011	172	531	318	200	560	347
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	1.15	0.12	1.24	0.77	0.27	0.97	0.28	0.90	1.21	0.31	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

14: Herndon Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	68	2926	198	364	2190	141	103	84	333	272	112	54
v/c Ratio	0.48	1.17	0.24	1.16	0.77	0.15	0.52	0.16	1.01	1.15	0.10	0.14
Control Delay	58.0	103.2	8.7	133.0	11.5	2.7	64.8	45.3	86.4	152.2	37.1	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	103.2	8.7	133.0	11.5	2.7	64.8	45.3	86.4	152.2	37.1	10.7
Queue Length 50th (ft)	28	~982	22	~174	238	6	40	30	~187	~248	25	0
Queue Length 95th (ft)	m26	m#793	m16	m#178	m235	m7	70	54	#380	#421	42	34
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	143	2500	828	315	2830	915	200	531	330	236	1148	399
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	1.17	0.24	1.16	0.77	0.15	0.52	0.16	1.01	1.15	0.10	0.14

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

15: Herndon Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1036	2392	120	268	1504	408	170	876	238	188	797	866
v/c Ratio	1.01	0.93	0.14	0.94	1.01	0.76	0.99	0.86	0.54	0.73	1.00	0.98
Control Delay	59.6	9.9	0.5	94.2	69.2	37.9	122.8	56.1	20.6	71.7	78.9	52.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.6	9.9	0.5	94.2	69.2	37.9	122.8	56.1	20.6	71.7	78.9	52.1
Queue Length 50th (ft)	~374	165	0	108	~438	213	69	242	55	74	~327	623
Queue Length 95th (ft)	m282	m100	m0	#191	#546	340	#143	#300	139	#126	#464	#931
Internal Link Dist (ft)		5199			5182			392			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	1030	2585	840	286	1483	540	172	1019	440	257	796	885
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.93	0.14	0.94	1.01	0.76	0.99	0.86	0.54	0.73	1.00	0.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	257	2167	152	118	1795	259	142	279	137	238	418	262
v/c Ratio	0.75	0.92	0.19	0.69	0.86	0.35	0.66	0.26	0.33	0.93	0.37	0.59
Control Delay	50.1	28.3	4.6	59.1	26.5	8.3	52.7	27.0	11.1	79.4	27.3	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.1	28.3	4.6	59.1	26.5	8.3	52.7	27.0	11.1	79.4	27.3	21.8
Queue Length 50th (ft)	65	355	9	30	289	33	36	42	12	62	64	64
Queue Length 95th (ft)	#119	#454	40	#69	354	84	#75	65	57	#129	93	142
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	343	2352	796	172	2098	742	215	1081	421	257	1144	443
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.92	0.19	0.69	0.86	0.35	0.66	0.26	0.33	0.93	0.37	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

18: N. Bryan Ave. & Dwy 3

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	2	216	9	373	186	142	162	79	2	62	432
v/c Ratio	0.02	0.39	0.04	0.71	0.10	0.16	0.34	0.14	0.01	0.21	0.71
Control Delay	31.5	25.5	14.4	31.6	10.9	3.7	26.1	14.3	30.0	24.1	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	25.5	14.4	31.6	10.9	3.7	26.1	14.3	30.0	24.1	9.9
Queue Length 50th (ft)	1	34	0	111	15	0	25	15	1	19	0
Queue Length 95th (ft)	7	75	12	#318	51	34	59	52	7	51	69
Internal Link Dist (ft)		700			600			192		213	
Turn Bay Length (ft)	150		150	150		150			150		150
Base Capacity (vph)	116	911	414	524	1822	884	839	615	387	480	728
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.24	0.02	0.71	0.10	0.16	0.19	0.13	0.01	0.13	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

31: Bullard & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	185	972	88	113	695	53	470	89	93	501	75
v/c Ratio	0.68	0.99	0.10	0.95	0.45	0.68	0.78	0.28	0.94	0.71	0.21
Control Delay	48.3	49.0	3.2	114.6	18.6	83.1	45.6	17.3	121.0	40.3	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.3	49.0	3.2	114.6	18.6	83.1	45.6	17.3	121.0	40.3	15.0
Queue Length 50th (ft)	100	523	1	65	137	30	134	16	54	143	10
Queue Length 95th (ft)	164	#812	23	#171	197	#92	188	57	#149	198	48
Internal Link Dist (ft)		1194			1253		2670			4855	
Turn Bay Length (ft)	150			140		120		55	90		70
Base Capacity (vph)	326	983	874	119	1540	78	629	327	99	710	360
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.99	0.10	0.95	0.45	0.68	0.75	0.27	0.94	0.71	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

34: Shaw Ave & SR 99 SB Off Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	982	529	621	920	83	291
v/c Ratio	1.15	0.59	1.17	0.33	0.33	0.61
Control Delay	112.4	11.3	133.3	3.9	50.5	11.4
Queue Delay	120.1	0.0	0.0	0.0	0.0	0.8
Total Delay	232.5	11.3	133.3	3.9	50.5	12.2
Queue Length 50th (ft)	~895	103	~573	86	59	0
Queue Length 95th (ft)	#1146	212	#799	106	110	83
Internal Link Dist (ft)	8376			500	619	
Turn Bay Length (ft)			110			
Base Capacity (vph)	854	903	531	2802	251	474
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	163	0	0	0	0	43
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.42	0.59	1.17	0.33	0.33	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

35: Shaw Ave & SR 99 NB Off Ramps

Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Group Flow (vph)	129	1124	1258	293	158	276
v/c Ratio	0.67	0.96	0.72	0.32	0.35	0.47
Control Delay	48.5	31.8	17.3	2.4	25.0	8.5
Queue Delay	0.0	4.8	0.0	0.0	0.0	0.0
Total Delay	48.5	36.6	17.3	2.4	25.0	8.5
Queue Length 50th (ft)	54	356	214	0	58	14
Queue Length 95th (ft)	#125	#693	288	35	109	73
Internal Link Dist (ft)		500	2498		599	
Turn Bay Length (ft)	120					
Base Capacity (vph)	202	1224	1756	934	455	582
Starvation Cap Reductn	0	67	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.97	0.72	0.31	0.35	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

36: Shaw Ave & Golden State

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	39	1091	41	402	1234	187	249	413	34	18	327	572
v/c Ratio	0.38	1.03	0.08	1.03	0.70	0.21	1.00	0.36	0.06	0.20	0.51	0.99
Control Delay	55.8	70.2	12.4	94.2	22.7	4.1	102.8	28.0	9.7	51.1	40.3	50.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.8	70.2	12.4	94.2	22.7	4.1	102.8	28.0	9.7	51.1	40.3	50.7
Queue Length 50th (ft)	24	~393	5	~277	332	7	~162	98	0	11	100	152
Queue Length 95th (ft)	59	#522	30	#461	417	45	#322	160	24	34	144	#382
Internal Link Dist (ft)		2498			1072			272			347	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	106	1062	496	389	1770	874	248	1147	536	89	637	580
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	1.03	0.08	1.03	0.70	0.21	1.00	0.36	0.06	0.20	0.51	0.99

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	112	1302	80	132	1241	102	186	250	70	257	749	158
v/c Ratio	0.49	0.85	0.15	0.58	0.81	0.19	0.61	0.24	0.14	0.72	0.69	0.27
Control Delay	34.7	26.9	5.3	38.5	24.9	5.1	37.0	17.8	6.0	39.8	23.2	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	26.9	5.3	38.5	24.9	5.1	37.0	17.8	6.0	39.8	23.2	4.8
Queue Length 50th (ft)	20	160	0	24	150	0	34	37	0	47	128	0
Queue Length 95th (ft)	42	#234	25	#54	198	28	#72	63	25	#97	185	36
Internal Link Dist (ft)		3252			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	229	1528	531	229	1528	547	303	1021	506	359	1078	592
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.85	0.15	0.58	0.81	0.19	0.61	0.24	0.14	0.72	0.69	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

38: Shaw Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	268	1558	110	157	1034	64	197	443	417	303	553	438
v/c Ratio	0.78	0.93	0.19	0.80	0.71	0.13	0.80	0.44	0.74	0.88	0.50	0.72
Control Delay	48.6	34.9	6.3	63.7	25.7	6.4	58.3	22.1	23.8	60.2	21.4	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	34.9	6.3	63.7	25.7	6.4	58.3	22.1	23.8	60.2	21.4	21.4
Queue Length 50th (ft)	59	234	5	35	145	0	44	81	100	67	100	103
Queue Length 95th (ft)	#114	#331	36	#83	189	25	#96	121	#233	#135	145	#216
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	343	1671	583	196	1453	498	245	1011	562	343	1112	607
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.93	0.19	0.80	0.71	0.13	0.80	0.44	0.74	0.88	0.50	0.72

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

39: Shaw Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	133	1721	159	168	1163	73	218	585	289	161	455	172
v/c Ratio	0.52	0.96	0.24	0.80	0.62	0.12	0.83	0.63	0.55	0.61	0.49	0.33
Control Delay	36.6	35.2	4.1	59.3	19.4	5.0	57.2	24.9	14.4	40.1	22.5	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.6	35.2	4.1	59.3	19.4	5.0	57.2	24.9	14.4	40.1	22.5	7.0
Queue Length 50th (ft)	26	238	1	35	141	0	44	107	44	32	80	6
Queue Length 95th (ft)	51	#343	34	#82	185	24	#98	156	111	#66	121	48
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	258	1799	661	211	1862	626	264	926	526	264	926	526
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.96	0.24	0.80	0.62	0.12	0.83	0.63	0.55	0.61	0.49	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1600	38	149	545	22	450	183	118
v/c Ratio	0.93	0.05	0.84	0.24	0.07	0.84	0.42	0.14
Control Delay	29.2	5.9	70.4	5.6	21.3	30.8	26.0	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	5.9	70.4	5.6	21.3	30.8	26.0	9.0
Queue Length 50th (ft)	320	3	64	44	7	104	67	6
Queue Length 95th (ft)	#485	17	#161	64	24	#264	122	24
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1719	781	178	2275	307	534	431	834
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.05	0.84	0.24	0.07	0.84	0.42	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

41: Ashlan Ave & Golden State

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	374	1199	584	321	243	308	279	195	228
v/c Ratio	0.89	0.72	0.88	0.67	0.67	0.78	0.69	0.54	0.48
Control Delay	58.4	21.9	51.8	18.3	43.0	37.1	30.7	39.5	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.4	21.9	51.8	18.3	43.0	37.1	30.7	39.5	8.5
Queue Length 50th (ft)	204	272	171	47	134	123	97	52	0
Queue Length 95th (ft)	#361	348	#262	137	#235	#269	#210	87	61
Internal Link Dist (ft)		1158	1045			526			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	435	1691	676	486	361	397	403	364	473
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.71	0.86	0.66	0.67	0.78	0.69	0.54	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	633	217	138	89	210	302	166	1791	82	220	1490	537
v/c Ratio	1.04	0.21	0.25	0.47	0.41	0.83	0.64	1.01	0.14	0.83	1.00	0.59
Control Delay	84.3	24.9	5.6	49.5	36.5	37.5	54.7	54.6	7.5	65.6	49.7	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.3	24.9	5.6	49.5	36.5	37.5	54.7	54.6	7.5	65.6	49.7	7.6
Queue Length 50th (ft)	~202	48	0	25	56	79	48	~385	5	125	~479	42
Queue Length 95th (ft)	#308	76	40	50	88	#197	#107	#495	35	#274	#613	133
Internal Link Dist (ft)		665			800			120			1141	
Turn Bay Length (ft)	330		200	310			330		200	330		200
Base Capacity (vph)	610	1067	574	191	629	409	259	1771	596	266	1497	912
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.20	0.24	0.47	0.33	0.74	0.64	1.01	0.14	0.83	1.00	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	433	1836	298	333	1505	204	545	147	425	243	152	433
v/c Ratio	1.55	1.41	0.46	1.51	1.28	0.35	1.32	0.36	0.78	0.87	0.58	1.04
Control Delay	297.7	222.6	20.2	271.6	171.1	30.2	197.4	43.6	27.8	78.1	57.7	79.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	297.7	222.6	20.2	271.6	171.1	30.2	197.4	43.6	27.8	78.1	57.7	79.8
Queue Length 50th (ft)	~472	~1007	106	~369	~800	117	~546	99	124	184	112	~204
Queue Length 95th (ft)	#674	#1146	189	m#439	m#937	m137	#763	162	#282	#318	183	#409
Internal Link Dist (ft)		770			2700			870			524	
Turn Bay Length (ft)	165		165	165		165	65		65	65		65
Base Capacity (vph)	280	1298	651	221	1180	586	413	404	547	295	264	416
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.55	1.41	0.46	1.51	1.28	0.35	1.32	0.36	0.78	0.82	0.58	1.04

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	147	1941	40	376	1593	29	184	457	20	184
v/c Ratio	0.80	1.10	0.05	1.10	0.91	0.04	0.62	0.91	0.18	0.55
Control Delay	38.1	89.0	17.0	107.3	43.9	13.5	62.4	63.1	60.0	47.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	89.0	17.0	107.3	43.9	13.5	62.4	63.1	60.0	47.6
Queue Length 50th (ft)	106	~923	16	~165	697	13	71	304	7	119
Queue Length 95th (ft)	m87	m678	m12	m#227	#778	m12	110	#571	21	196
Internal Link Dist (ft)		2700			3484			1081		369
Turn Bay Length (ft)	350		250	250		125	140		100	
Base Capacity (vph)	192	1770	805	343	1758	792	315	500	114	334
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	1.10	0.05	1.10	0.91	0.04	0.58	0.91	0.18	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	10	1933	246	410	1755	220	230	452	285	228	29
v/c Ratio	0.09	1.17	0.30	1.20	0.85	0.23	0.80	1.05	1.11	0.56	0.08
Control Delay	55.9	111.8	12.8	158.9	25.8	8.6	75.3	95.5	139.0	48.2	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	111.8	12.8	158.9	25.8	8.6	75.3	95.5	139.0	48.2	13.3
Queue Length 50th (ft)	3	~967	96	~197	535	46	91	~340	~129	159	0
Queue Length 95th (ft)	m3	m#844	m84	#300	#794	101	#155	#549	#219	243	26
Internal Link Dist (ft)		3484			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	114	1652	819	343	2076	961	286	431	257	404	366
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	1.17	0.30	1.20	0.85	0.23	0.80	1.05	1.11	0.56	0.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	522	1757	229	112	1771	568	218	598	71	621	539	378
v/c Ratio	1.01	0.79	0.29	0.65	1.02	0.76	0.79	0.99	0.23	1.00	0.56	0.63
Control Delay	86.3	27.1	7.8	48.7	75.5	37.4	66.6	77.6	17.7	79.4	34.2	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.3	27.1	7.8	48.7	75.5	37.4	66.6	77.6	17.7	79.4	34.2	17.5
Queue Length 50th (ft)	~176	341	30	37	~460	249	71	202	12	~207	155	77
Queue Length 95th (ft)	#285	404	78	m45	#561	384	#130	#318	51	#323	210	180
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	515	2237	778	172	1729	746	275	602	310	618	956	596
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.79	0.29	0.65	1.02	0.76	0.79	0.99	0.23	1.00	0.56	0.63

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

11: Herndon Ave & Bylthe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	4	2437	1	4	2455	72	2	4	72	1	16
v/c Ratio	0.02	0.75	0.00	0.02	0.75	0.07	0.01	0.01	0.42	0.00	0.06
Control Delay	35.8	29.8	14.0	44.8	15.3	4.9	44.5	0.0	53.8	34.0	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.8	29.8	14.0	44.8	15.3	4.9	44.5	0.0	53.8	34.0	16.5
Queue Length 50th (ft)	1	569	0	1	332	7	0	0	23	1	0
Queue Length 95th (ft)	m2	m613	m0	7	553	30	4	0	46	5	19
Internal Link Dist (ft)		2270			2660			994		425	
Turn Bay Length (ft)	220		140	220		140	235		120		120
Base Capacity (vph)	194	3255	1013	193	3255	1026	549	879	172	306	273
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.75	0.00	0.02	0.75	0.07	0.00	0.00	0.42	0.00	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	72	2472	526	2166	438	104	446	30	92	75
v/c Ratio	0.97	1.55	1.62	1.02	1.34	0.22	0.73	0.09	0.19	0.16
Control Delay	155.2	279.2	314.2	31.3	208.2	36.4	23.4	35.0	36.1	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	155.2	279.2	314.2	31.3	208.2	36.4	23.4	35.0	36.1	8.6
Queue Length 50th (ft)	57	~1426	~585	~959	~442	64	125	18	56	0
Queue Length 95th (ft)	#155	#1561	m#457	m593	#645	112	254	43	101	38
Internal Link Dist (ft)		2660		4430		2164			665	
Turn Bay Length (ft)	290		310		105		75	80		80
Base Capacity (vph)	74	1591	325	2115	327	481	610	316	481	465
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	1.55	1.62	1.02	1.34	0.22	0.73	0.09	0.19	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

13: Herndon Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	251	2218	175	361	2427	424	239	270	276	302	253	382
v/c Ratio	1.25	1.16	0.20	1.15	1.19	0.43	1.20	0.51	0.86	1.06	0.41	1.06
Control Delay	177.6	89.7	2.4	117.1	108.6	9.0	173.9	50.7	56.5	121.2	46.3	100.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	177.6	89.7	2.4	117.1	108.6	9.0	173.9	50.7	56.5	121.2	46.3	100.9
Queue Length 50th (ft)	~128	~1082	8	~174	~1175	79	~115	102	137	~131	92	~259
Queue Length 95th (ft)	m#92	m605	m4	m#140	m#899	m61	#199	147	#288	#224	134	#456
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		190	245		125	160		160
Base Capacity (vph)	200	1917	871	315	2035	996	200	531	322	286	619	359
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.25	1.16	0.20	1.15	1.19	0.43	1.20	0.51	0.86	1.06	0.41	1.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

14: Herndon Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	112	2514	199	332	3116	335	193	157	501	233	165	178
v/c Ratio	0.98	1.08	0.25	1.05	1.19	0.38	0.65	0.22	1.22	1.13	0.14	0.43
Control Delay	78.7	64.6	10.0	91.1	100.4	3.6	63.3	41.2	151.9	148.4	37.5	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.7	64.6	10.0	91.1	100.4	3.6	63.3	41.2	151.9	148.4	37.5	27.4
Queue Length 50th (ft)	46	~785	23	~146	~1042	30	75	54	~401	~209	37	70
Queue Length 95th (ft)	m42	m488	m17	m98	m232	m10	114	85	#618	#372	58	141
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	114	2331	784	315	2627	876	315	708	410	207	1167	417
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	1.08	0.25	1.05	1.19	0.38	0.61	0.22	1.22	1.13	0.14	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

15: Herndon Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1063	2035	84	300	2436	236	196	974	196	336	911	1167
v/c Ratio	1.24	0.81	0.10	0.82	1.37	0.39	1.14	1.00	0.43	1.31	1.19	1.47
Control Delay	156.9	9.6	0.8	71.1	202.1	20.7	161.5	77.2	9.0	206.8	138.7	246.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	156.9	9.6	0.8	71.1	202.1	20.7	161.5	77.2	9.0	206.8	138.7	246.8
Queue Length 50th (ft)	~518	127	0	119	~912	86	~91	278	1	~172	~447	~1253
Queue Length 95th (ft)	m#437	m115	m0	#186	#1005	157	#169	#379	65	#267	#578	#1517
Internal Link Dist (ft)		5199			5182			392			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	858	2509	810	372	1780	608	172	975	460	257	767	792
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.24	0.81	0.10	0.81	1.37	0.39	1.14	1.00	0.43	1.31	1.19	1.47

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	301	2045	391	195	1785	284	241	683	105	312	879	545
v/c Ratio	0.99	1.01	0.50	1.02	0.96	0.43	0.90	0.58	0.23	0.68	0.60	1.00
Control Delay	91.4	49.2	10.1	115.1	41.5	12.9	77.8	33.2	7.6	44.9	29.5	64.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.4	49.2	10.1	115.1	41.5	12.9	77.8	33.2	7.6	44.9	29.5	64.7
Queue Length 50th (ft)	89	~421	57	~59	357	57	71	128	0	87	156	250
Queue Length 95th (ft)	#173	#545	136	#129	#468	125	#141	168	40	130	199	#470
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	305	2034	775	191	1865	667	267	1182	448	496	1469	546
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	1.01	0.50	1.02	0.96	0.43	0.90	0.58	0.23	0.63	0.60	1.00

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

18: N. Bryan Ave. & Dwy 3

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	20	429	61	255	293	235	572	244	120	290	84
v/c Ratio	0.21	0.64	0.17	0.89	0.23	0.32	0.78	0.43	0.49	0.77	0.22
Control Delay	39.7	31.1	8.6	66.2	17.5	4.5	35.5	24.2	35.3	41.8	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.7	31.1	8.6	66.2	17.5	4.5	35.5	24.2	35.3	41.8	7.9
Queue Length 50th (ft)	9	94	0	116	44	0	125	86	51	121	0
Queue Length 95th (ft)	30	140	29	#260	84	47	#201	167	97	#234	33
Internal Link Dist (ft)		700			600			192		213	
Turn Bay Length (ft)	150		150	150		150			150		150
Base Capacity (vph)	96	791	401	285	1298	729	784	572	367	422	423
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.54	0.15	0.89	0.23	0.32	0.73	0.43	0.33	0.69	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

31: Bullard & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	210	800	87	179	1060	193	912	177	90	898	135
v/c Ratio	0.82	1.07	0.13	1.01	0.85	1.09	0.86	0.35	0.93	1.00	0.31
Control Delay	71.1	87.5	8.1	120.8	40.5	140.8	45.8	22.6	126.5	70.7	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.1	87.5	8.1	120.8	40.5	140.8	45.8	22.6	126.5	70.7	23.3
Queue Length 50th (ft)	144	~630	9	~130	363	~154	318	65	65	334	49
Queue Length 95th (ft)	#257	#864	41	#275	#463	#300	#408	127	#166	#474	103
Internal Link Dist (ft)		1194			1253		2670			4855	
Turn Bay Length (ft)	150			140		120		55	90		70
Base Capacity (vph)	271	745	672	177	1251	177	1062	513	97	901	439
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	1.07	0.13	1.01	0.85	1.09	0.86	0.35	0.93	1.00	0.31

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

34: Shaw Ave & SR 99 SB Off Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	897	299	550	1632	130	318
v/c Ratio	1.05	0.36	1.04	0.58	0.52	0.64
Control Delay	77.4	7.9	90.1	5.8	55.8	11.5
Queue Delay	98.9	0.0	0.0	1.0	0.0	0.9
Total Delay	176.3	7.9	90.1	6.8	55.8	12.5
Queue Length 50th (ft)	~758	42	~459	210	95	0
Queue Length 95th (ft)	#1004	103	#676	253	161	87
Internal Link Dist (ft)	8376			500	619	
Turn Bay Length (ft)			110			
Base Capacity (vph)	854	836	531	2802	251	497
Starvation Cap Reductn	0	0	0	820	0	0
Spillback Cap Reductn	155	0	0	0	0	48
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.28	0.36	1.04	0.82	0.52	0.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

35: Shaw Ave & SR 99 NB Off Ramps

Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Group Flow (vph)	87	1179	1799	413	358	351
v/c Ratio	0.65	0.96	0.91	0.39	0.80	0.69
Control Delay	63.5	33.5	26.2	2.2	47.7	26.4
Queue Delay	0.0	27.4	0.1	0.0	0.0	0.2
Total Delay	63.5	60.8	26.3	2.2	47.7	26.6
Queue Length 50th (ft)	49	514	454	0	196	108
Queue Length 95th (ft)	#116	#897	#650	39	#351	#220
Internal Link Dist (ft)		500	2498		599	
Turn Bay Length (ft)	120					
Base Capacity (vph)	138	1263	1982	1068	448	510
Starvation Cap Reductn	0	147	0	0	0	0
Spillback Cap Reductn	0	0	6	0	0	8
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	1.06	0.91	0.39	0.80	0.70

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	54	1426	57	472	1914	323	243	332	59	50	676	970
v/c Ratio	0.92	1.38	0.12	1.52	1.25	0.42	1.50	0.26	0.10	0.46	0.62	1.38
Control Delay	152.9	212.1	20.0	269.7	145.1	13.7	292.0	29.1	7.4	67.9	38.5	202.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	152.9	212.1	20.0	269.7	145.1	13.7	292.0	29.1	7.4	67.9	38.5	202.1
Queue Length 50th (ft)	43	~772	17	~510	~1002	164	~261	98	0	38	235	~821
Queue Length 95th (ft)	#127	#910	51	m#555	m#1014	m190	#425	137	30	81	300	#1077
Internal Link Dist (ft)		2498			1072			272			347	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	59	1032	480	310	1534	769	162	1254	599	118	1091	705
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	1.38	0.12	1.52	1.25	0.42	1.50	0.26	0.10	0.42	0.62	1.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	315	1859	165	223	1990	278	301	849	164	508	493	185
v/c Ratio	1.00	0.90	0.24	0.97	1.02	0.41	0.72	0.96	0.36	1.05	0.52	0.35
Control Delay	75.3	25.2	9.9	109.2	62.7	18.1	60.9	66.6	22.8	102.9	39.8	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.3	25.2	9.9	109.2	62.7	18.1	60.9	66.6	22.8	102.9	39.8	12.9
Queue Length 50th (ft)	~134	267	26	90	~599	92	115	343	56	~220	173	28
Queue Length 95th (ft)	m95	m189	m10	#172	#695	167	163	#473	120	#329	230	91
Internal Link Dist (ft)		3252			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	315	2076	691	229	1949	673	458	885	451	486	955	528
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.90	0.24	0.97	1.02	0.41	0.66	0.96	0.36	1.05	0.52	0.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

38: Shaw Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	623	1604	241	337	1647	187	470	733	205	239	495	462
v/c Ratio	1.02	0.83	0.34	0.81	1.00	0.31	1.03	0.85	0.41	0.90	0.74	0.89
Control Delay	80.0	30.1	8.0	54.9	54.9	9.4	89.0	43.2	12.2	76.5	42.1	36.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.0	30.1	8.0	54.9	54.9	9.4	89.0	43.2	12.2	76.5	42.1	36.7
Queue Length 50th (ft)	~190	298	26	97	~343	22	~148	209	26	71	141	111
Queue Length 95th (ft)	#302	360	78	#163	#456	70	#244	#302	86	#139	196	#295
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	610	1926	704	420	1639	600	458	865	497	267	668	517
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.83	0.34	0.80	1.00	0.31	1.03	0.85	0.41	0.90	0.74	0.89

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

39: Shaw Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	243	1547	138	287	1718	127	253	388	141	146	535	190
v/c Ratio	0.83	0.85	0.21	0.98	0.95	0.20	0.86	0.40	0.27	0.51	0.62	0.36
Control Delay	56.5	26.7	4.1	82.5	34.8	6.5	60.9	23.3	5.9	37.5	27.4	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.5	26.7	4.1	82.5	34.8	6.5	60.9	23.3	5.9	37.5	27.4	6.7
Queue Length 50th (ft)	54	220	0	64	257	8	56	74	0	31	108	3
Queue Length 95th (ft)	#111	278	32	#137	#362	41	#118	113	39	58	157	49
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	294	1816	654	294	1816	628	294	960	532	287	859	521
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.85	0.21	0.98	0.95	0.20	0.86	0.40	0.27	0.51	0.62	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1140	71	415	1307	55	560	191	247
v/c Ratio	0.92	0.12	0.89	0.55	0.22	0.76	0.47	0.30
Control Delay	38.2	10.0	50.4	7.9	28.3	12.7	31.0	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.2	10.0	50.4	7.9	28.3	12.7	31.0	17.9
Queue Length 50th (ft)	283	10	196	151	23	30	83	35
Queue Length 95th (ft)	#412	37	#351	198	54	#152	146	66
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1260	590	491	2389	246	741	409	827
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.12	0.85	0.55	0.22	0.76	0.47	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

41: Ashlan Ave & Golden State

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	261	1213	1011	759	506	561	503	218	407
v/c Ratio	1.18	0.76	0.98	1.17	0.95	1.10	0.98	1.05	1.01
Control Delay	163.6	31.5	65.9	117.3	69.4	107.1	72.8	125.9	71.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	163.6	31.5	65.9	117.3	69.4	107.1	72.8	125.9	71.3
Queue Length 50th (ft)	~242	405	408	~545	402	~513	372	~94	~161
Queue Length 95th (ft)	#412	492	#552	#786	#630	#758	#615	#176	#372
Internal Link Dist (ft)		1158	1045			526			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	221	1593	1032	650	532	508	512	208	403
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.18	0.76	0.98	1.17	0.95	1.10	0.98	1.05	1.01

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	443	1552	170	857	1361	268	1273	343	684	264	233	376
v/c Ratio	2.50	1.95	0.42	2.76	1.28	0.48	2.27	0.58	0.95	0.99	0.84	0.98
Control Delay	715.8	459.2	28.8	823.4	169.9	21.3	599.6	39.1	46.3	104.7	74.8	70.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	715.8	459.2	28.8	823.4	169.9	21.3	599.6	39.1	46.3	104.7	74.8	70.7
Queue Length 50th (ft)	~571	~978	71	~1132	~704	89	~1600	222	320	207	178	171
Queue Length 95th (ft)	#776	#1117	139	#1377	#842	172	#1861	322	#581	#381	#313	#374
Internal Link Dist (ft)		770			2700			870			524	
Turn Bay Length (ft)	165		165	165		165	65		65	65		65
Base Capacity (vph)	177	796	403	310	1062	560	561	590	717	266	279	382
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.50	1.95	0.42	2.76	1.28	0.48	2.27	0.58	0.95	0.99	0.84	0.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	87	2115	42	72	2153	59	36	131	55	90
v/c Ratio	0.98	0.97	0.04	0.53	1.03	0.06	0.26	0.37	0.40	0.24
Control Delay	139.5	33.2	3.3	61.1	49.8	5.7	51.5	19.2	55.7	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	139.5	33.2	3.3	61.1	49.8	5.7	51.5	19.2	55.7	11.1
Queue Length 50th (ft)	57	654	1	23	~778	8	11	27	18	3
Queue Length 95th (ft)	#156	#877	14	#47	#916	25	28	82	38	46
Internal Link Dist (ft)		2700			3484			1081		369
Turn Bay Length (ft)	350		250	250		125	140		100	
Base Capacity (vph)	89	2180	990	137	2088	945	137	351	137	375
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.97	0.04	0.53	1.03	0.06	0.26	0.37	0.40	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	9	609	8	97	490	397	1572	158	13	89	43
v/c Ratio	0.11	0.85	0.02	1.04	0.47	0.53	1.02	0.15	0.10	0.43	0.20
Control Delay	44.0	44.9	16.4	148.6	26.7	6.1	52.4	9.7	40.9	40.9	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	44.9	16.4	148.6	26.7	6.1	52.4	9.7	40.9	40.9	13.1
Queue Length 50th (ft)	5	162	0	~58	106	0	~471	32	7	44	0
Queue Length 95th (ft)	20	#265	12	#159	184	75	#643	82	24	88	28
Internal Link Dist (ft)		700			600			192		213	
Turn Bay Length (ft)	150		150	150		150			150		150
Base Capacity (vph)	82	743	339	93	1050	749	1546	1032	289	334	319
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.82	0.02	1.04	0.47	0.53	1.02	0.15	0.04	0.27	0.13

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2012 BASELINE PLUS PROJECT PHASES 1 & 2 TRAFFIC CONDITION

1: N. Parkway Dr. & Herndon Ave

Lane Group	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	158	14	690	1299	176
v/c Ratio	0.32	0.02	0.69	0.76	0.20
Control Delay	15.4	12.1	5.8	13.7	2.1
Queue Delay	0.0	0.0	0.1	0.0	0.0
Total Delay	15.5	12.1	5.9	13.7	2.1
Queue Length 50th (ft)	38	3	0	111	0
Queue Length 95th (ft)	68	11	56	220	23
Internal Link Dist (ft)	297	586		195	
Turn Bay Length (ft)			200		100
Base Capacity (vph)	557	710	1030	1785	907
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	12	0	22	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.29	0.02	0.68	0.73	0.19

Intersection Summary

3: NB 99 Off Ramp & Herndon Ave

Lane Group	NWL	NWR	NET	SWT
Lane Group Flow (vph)	64	1098	878	1604
v/c Ratio	0.17	1.21	0.66	1.20
Control Delay	39.7	131.5	12.1	118.2
Queue Delay	0.0	0.0	1.4	28.7
Total Delay	39.7	131.5	13.5	146.9
Queue Length 50th (ft)	41	~448	324	~1509
Queue Length 95th (ft)	80	#597	449	#1775
Internal Link Dist (ft)	381		416	203
Turn Bay Length (ft)		200		
Base Capacity (vph)	384	908	1335	1335
Starvation Cap Reductn	0	0	258	68
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.17	1.21	0.82	1.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	474	150	366	126	232	140	205	1465	215	217	1179	712
v/c Ratio	0.92	0.17	0.70	0.59	0.47	0.41	0.55	0.86	0.32	0.70	0.83	0.80
Control Delay	59.5	24.0	22.3	48.3	34.0	9.3	42.5	31.7	4.5	47.0	28.5	16.2
Queue Delay	0.0	0.0	6.6	26.5	0.0	0.0	0.0	0.0	0.0	0.0	108.3	0.0
Total Delay	59.5	24.0	28.9	74.8	34.0	9.3	42.5	31.7	4.5	47.0	136.8	16.2
Queue Length 50th (ft)	122	32	91	32	57	0	49	251	0	100	278	117
Queue Length 95th (ft)	#209	51	173	#63	84	45	#119	#337	45	#244	#378	#343
Internal Link Dist (ft)		665			800			120			1105	
Turn Bay Length (ft)	330		200	310			330		200	330		200
Base Capacity (vph)	515	1022	578	215	708	429	376	1703	673	310	1416	895
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	162	81	0	0	0	0	0	0	464	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.15	0.88	0.94	0.33	0.33	0.55	0.86	0.32	0.70	1.24	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	326	1110	628	132	1612	207	518	73	220	197	79	346
v/c Ratio	0.86	0.59	0.64	0.50	0.95	0.33	0.85	0.14	0.38	0.59	0.21	0.78
Control Delay	61.6	24.6	5.2	47.0	43.1	7.9	50.5	25.4	7.7	46.8	31.9	31.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.6	24.6	5.2	47.0	43.1	7.9	50.5	25.4	7.7	46.8	31.9	31.4
Queue Length 50th (ft)	95	184	0	37	324	18	148	31	11	56	38	99
Queue Length 95th (ft)	#167	229	71	67	#428	67	#230	65	65	91	77	#234
Internal Link Dist (ft)		770			2700			870			524	
Turn Bay Length (ft)	165		165	165		165	65			65		65
Base Capacity (vph)	381	1872	979	267	1695	634	610	524	584	343	373	446
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.59	0.64	0.49	0.95	0.33	0.85	0.14	0.38	0.57	0.21	0.78

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	83	1216	28	184	1500	13	62	174	24	330
v/c Ratio	0.75	0.64	0.05	0.72	0.73	0.02	0.25	0.26	0.10	0.58
Control Delay	76.5	21.9	5.4	52.8	22.0	6.4	38.2	9.2	36.6	26.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.5	21.9	5.4	52.8	22.0	6.4	38.2	9.2	36.6	26.9
Queue Length 50th (ft)	42	175	0	47	227	0	14	14	5	121
Queue Length 95th (ft)	#117	194	13	#93	247	m8	35	69	18	#249
Internal Link Dist (ft)		2700			1876			1081		369
Turn Bay Length (ft)	350		250	250			140			
Base Capacity (vph)	111	2288	728	257	2352	739	245	677	229	569
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.53	0.04	0.72	0.64	0.02	0.25	0.26	0.10	0.58

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	WBL	WBT	NER
Lane Group Flow (vph)	1399	289	1550	176
v/c Ratio	0.53	0.58	0.30	0.38
Control Delay	9.9	16.5	0.2	12.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.9	16.5	0.2	12.2
Queue Length 50th (ft)	217	55	0	29
Queue Length 95th (ft)	257	92	0	55
Internal Link Dist (ft)	870		578	
Turn Bay Length (ft)				
Base Capacity (vph)	2634	664	5085	612
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.53	0.44	0.30	0.29

Intersection Summary

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	8	1467	100	137	1757	109	151	383	192	74	30
v/c Ratio	0.05	0.76	0.15	0.52	0.71	0.14	0.46	0.78	0.55	0.15	0.07
Control Delay	42.0	26.5	3.7	47.4	19.9	5.6	43.3	37.3	46.2	29.5	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	26.5	3.7	47.4	19.9	5.6	43.3	37.3	46.2	29.5	11.6
Queue Length 50th (ft)	2	258	0	39	261	11	42	159	53	33	0
Queue Length 95th (ft)	9	268	26	69	320	38	73	#337	#115	74	23
Internal Link Dist (ft)		578			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	153	2373	792	267	2595	841	336	494	351	501	448
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.62	0.13	0.51	0.68	0.13	0.45	0.78	0.55	0.15	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	313	1511	200	103	1485	295	182	309	167	547	452	328
v/c Ratio	0.91	0.78	0.28	0.60	0.93	0.45	0.71	0.41	0.39	0.91	0.41	0.56
Control Delay	68.6	25.6	6.0	52.8	39.3	7.9	52.6	29.1	12.6	54.2	23.1	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.6	25.6	6.0	52.8	39.3	7.9	52.6	29.1	12.6	54.2	23.1	17.5
Queue Length 50th (ft)	81	246	12	26	261	22	46	70	20	139	92	77
Queue Length 95th (ft)	#155	304	54	#58	#357	82	#92	108	71	#231	134	158
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	343	1945	706	172	1589	656	257	752	429	601	1106	586
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.78	0.28	0.60	0.93	0.45	0.71	0.41	0.39	0.91	0.41	0.56

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

11: Herndon Ave & N. Blythe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBR
Lane Group Flow (vph)	2	2215	1	2	1880	63	1	63	2
v/c Ratio	0.01	0.65	0.00	0.01	0.55	0.06	0.00	0.14	0.01
Control Delay	25.0	7.2	4.0	25.0	6.2	1.7	23.0	24.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.0	7.2	4.0	25.0	6.2	1.7	23.0	24.4	0.0
Queue Length 50th (ft)	0	87	0	0	66	0	0	10	0
Queue Length 95th (ft)	3	256	2	3	194	12	2	25	0
Internal Link Dist (ft)		2270			2660		994		
Turn Bay Length (ft)	220		140	220		140		120	120
Base Capacity (vph)	317	3427	1067	317	3427	1088	960	743	532
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.65	0.00	0.01	0.55	0.06	0.00	0.08	0.00

Intersection Summary

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	90	1986	263	411	1602	28	212	111	471	75	109	58
v/c Ratio	0.52	0.98	0.36	0.98	0.71	0.04	0.98	0.23	0.82	0.95	0.33	0.18
Control Delay	49.2	42.6	8.4	80.1	23.1	10.1	98.7	28.1	29.5	134.9	35.6	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	42.6	8.4	80.1	23.1	10.1	98.7	28.1	29.5	134.9	35.6	10.5
Queue Length 50th (ft)	49	398	33	122	279	4	122	50	133	44	55	0
Queue Length 95th (ft)	97	#520	88	#215	338	20	#262	94	#302	#131	104	32
Internal Link Dist (ft)		2660			4430			2164			665	
Turn Bay Length (ft)	290		150	310		100	105		75	80		80
Base Capacity (vph)	197	2034	735	420	2269	715	216	476	574	79	331	329
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.98	0.36	0.98	0.71	0.04	0.98	0.23	0.82	0.95	0.33	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

13: Herndon Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	139	2589	85	259	1795	282	168	155	299	252	182	177
v/c Ratio	0.48	1.02	0.11	1.01	0.72	0.32	0.61	0.25	0.75	0.64	0.24	0.37
Control Delay	57.7	52.7	13.3	94.2	27.5	12.3	63.4	44.6	37.3	58.2	40.5	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	52.7	13.3	94.2	27.5	12.3	63.4	44.6	37.3	58.2	40.5	8.1
Queue Length 50th (ft)	54	~778	27	~111	274	65	65	55	116	97	62	0
Queue Length 95th (ft)	85	#868	55	m#155	318	m88	103	90	#270	138	96	59
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		190	245		125	160		160
Base Capacity (vph)	486	2543	800	257	2497	877	286	627	399	486	749	475
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	1.02	0.11	1.01	0.72	0.32	0.59	0.25	0.75	0.52	0.24	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

14: Herndon Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	73	3073	208	383	2420	149	110	88	354	284	116	59
v/c Ratio	0.64	1.23	0.25	1.22	0.84	0.16	0.50	0.17	0.80	1.20	0.10	0.15
Control Delay	75.4	123.9	3.8	147.1	16.5	5.8	62.2	45.4	54.0	169.1	37.9	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.4	123.9	3.8	147.1	16.5	5.8	62.2	45.4	54.0	169.1	37.9	10.6
Queue Length 50th (ft)	31	~1061	7	~190	341	14	43	31	248	~268	26	0
Queue Length 95th (ft)	m34	m#1054	m9	m#172	m309	m13	73	57	#398	#442	44	36
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	114	2500	828	315	2865	924	229	531	443	236	1113	392
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	1.23	0.25	1.22	0.84	0.16	0.48	0.17	0.80	1.20	0.10	0.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

15: Herndon Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1091	2458	127	279	1667	426	179	917	249	197	842	932
v/c Ratio	1.09	0.95	0.15	0.98	1.09	0.77	1.04	0.83	0.54	0.98	1.06	1.07
Control Delay	85.4	15.5	0.4	102.4	92.5	39.0	134.8	52.6	21.2	116.5	93.0	78.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.4	15.5	0.4	102.4	92.5	39.0	134.8	52.6	21.2	116.5	93.0	78.6
Queue Length 50th (ft)	~480	579	0	112	~534	229	~77	250	64	79	~376	~801
Queue Length 95th (ft)	m307	m284	m0	#202	#631	#362	#153	303	150	#158	#504	#1054
Internal Link Dist (ft)		5199			5182			5307			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	1001	2585	841	286	1526	551	172	1102	461	200	796	871
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.95	0.15	0.98	1.09	0.77	1.04	0.83	0.54	0.99	1.06	1.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	263	2286	159	124	1948	271	129	292	137	249	438	286
v/c Ratio	0.88	0.97	0.20	0.72	0.90	0.36	0.60	0.27	0.33	0.97	0.38	0.65
Control Delay	66.5	35.1	4.9	62.2	28.7	8.4	49.1	27.1	11.5	88.6	27.5	24.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.5	35.1	4.9	62.2	28.7	8.4	49.1	27.1	11.5	88.6	27.5	24.6
Queue Length 50th (ft)	68	391	11	32	321	37	32	45	13	65	68	77
Queue Length 95th (ft)	#135	#524	43	#74	#402	89	#66	68	58	#137	97	161
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	300	2352	796	172	2161	758	215	1081	418	257	1144	442
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.97	0.20	0.72	0.90	0.36	0.60	0.27	0.33	0.97	0.38	0.65

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

17: N. Parkway Dr. & N. Grantland Ave.

Lane Group	EBT	EBR	NBL	NBR
Lane Group Flow (vph)	1003	503	760	200
v/c Ratio	0.71	0.54	0.55	0.30
Control Delay	13.3	3.6	11.3	8.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.3	3.6	11.3	8.5
Queue Length 50th (ft)	86	0	66	24
Queue Length 95th (ft)	143	40	100	55
Internal Link Dist (ft)	586		2735	
Turn Bay Length (ft)		100		100
Base Capacity (vph)	1465	950	1423	677
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.68	0.53	0.53	0.30

Intersection Summary

18: Bryan Ave. & W. Palo Alto Ave.

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	105	89	1	413	229	71	183	159	2	103	451
v/c Ratio	0.41	0.20	0.00	0.77	0.20	0.13	0.37	0.27	0.01	0.33	0.70
Control Delay	28.9	25.4	20.0	34.2	19.0	7.0	25.1	12.4	28.5	24.4	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	25.4	20.0	34.2	19.0	7.0	25.1	12.4	28.5	24.4	9.4
Queue Length 50th (ft)	32	14	0	125	31	0	28	25	1	31	0
Queue Length 95th (ft)	84	37	4	#340	71	29	61	78	7	72	67
Internal Link Dist (ft)		700			612			177		213	
Turn Bay Length (ft)			150	150							150
Base Capacity (vph)	305	903	404	534	1407	672	857	642	393	492	750
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.10	0.00	0.77	0.16	0.11	0.21	0.25	0.01	0.21	0.60

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

28: Bryan Ave. & N. Carnegie Ave.

Lane Group	SET	NWL	NWT	NEL	NER
Lane Group Flow (vph)	429	634	309	225	283
v/c Ratio	0.32	0.94	0.22	0.78	0.57
Control Delay	2.0	35.7	4.1	55.6	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	2.0	35.7	4.1	55.6	9.3
Queue Length 50th (ft)	22	267	46	122	0
Queue Length 95th (ft)	47	#568	73	#222	66
Internal Link Dist (ft)	512		945	941	
Turn Bay Length (ft)				150	
Base Capacity (vph)	1342	676	1395	315	514
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.32	0.94	0.22	0.71	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

29: Golden State & N. Carnegie Ave.

Lane Group	SET	NWT	NWR	NET	SWT
Lane Group Flow (vph)	385	217	354	21	953
v/c Ratio	0.73	0.54	0.59	0.02	0.98
Control Delay	39.5	34.5	9.1	3.4	37.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.5	34.5	9.1	3.4	37.9
Queue Length 50th (ft)	96	99	10	2	348
Queue Length 95th (ft)	#165	169	84	8	#701
Internal Link Dist (ft)	310	2920		303	941
Turn Bay Length (ft)			65		
Base Capacity (vph)	525	399	601	1052	993
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.73	0.54	0.59	0.02	0.96

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

31: Bullard Ave. & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	197	1002	92	118	729	55	490	93	98	524	78
v/c Ratio	0.71	1.49	0.15	0.81	0.72	0.50	0.61	0.22	0.84	0.52	0.15
Control Delay	42.0	249.2	5.4	71.2	24.6	46.5	24.4	6.8	84.6	21.4	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	249.2	5.4	71.2	24.6	46.5	24.4	6.8	84.6	21.4	6.0
Queue Length 50th (ft)	69	~529	2	44	122	20	85	1	37	92	0
Queue Length 95th (ft)	#166	#793	28	#134	#204	#65	127	31	#121	136	27
Internal Link Dist (ft)		1463			807		3248			5307	
Turn Bay Length (ft)	150			140		120		55	90		70
Base Capacity (vph)	288	674	627	146	1017	110	980	502	117	1049	524
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	1.49	0.15	0.81	0.72	0.50	0.50	0.19	0.84	0.50	0.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

34: Shaw Ave & SR 99 SB Off Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1058	530	648	959	84	301
v/c Ratio	1.88	0.76	0.97	0.38	0.25	0.55
Control Delay	427.4	19.5	58.3	5.3	33.5	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	427.4	19.5	58.3	5.3	33.5	8.4
Queue Length 50th (ft)	~930	108	355	91	41	0
Queue Length 95th (ft)	#1167	243	#583	118	82	68
Internal Link Dist (ft)	8376			500	619	
Turn Bay Length (ft)			110			
Base Capacity (vph)	562	697	669	2556	334	543
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.88	0.76	0.97	0.38	0.25	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

35: Shaw Ave & SR 99 NB Off Ramps

Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Group Flow (vph)	168	1173	1314	295	177	283
v/c Ratio	1.14	1.08	0.86	0.35	0.35	0.48
Control Delay	147.2	67.9	23.6	6.2	19.6	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	147.2	67.9	23.6	6.2	19.6	9.6
Queue Length 50th (ft)	~73	~490	316	46	51	25
Queue Length 95th (ft)	#176	#704	401	m122	97	81
Internal Link Dist (ft)		500	2498		599	
Turn Bay Length (ft)	120					
Base Capacity (vph)	148	1087	1534	853	502	585
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.14	1.08	0.86	0.35	0.35	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

36: Shaw Ave & Golden State

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	59	1121	42	416	1264	241	270	504	46	20	408	578
v/c Ratio	0.49	1.03	0.08	1.05	0.74	0.28	1.02	0.42	0.08	0.27	0.63	0.99
Control Delay	59.3	63.8	18.6	98.6	20.7	7.1	109.9	33.0	9.3	65.1	50.2	52.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.3	63.8	18.6	98.6	20.7	7.1	109.9	33.0	9.3	65.1	50.2	52.8
Queue Length 50th (ft)	42	~480	11	~360	309	53	~217	150	0	15	155	194
Queue Length 95th (ft)	m45	m398	m13	m#497	365	m76	#392	223	28	42	210	#439
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	133	1091	505	398	1706	852	266	1192	564	74	649	586
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	1.03	0.08	1.05	0.74	0.28	1.02	0.42	0.08	0.27	0.63	0.99

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	117	1384	86	137	1323	147	198	267	73	280	799	165
v/c Ratio	0.51	0.90	0.16	0.60	0.86	0.25	0.65	0.26	0.14	0.77	0.74	0.28
Control Delay	30.0	35.9	8.2	39.7	27.5	4.7	38.8	18.0	6.0	43.1	25.0	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	35.9	8.2	39.7	27.5	4.7	38.8	18.0	6.0	43.1	25.0	4.8
Queue Length 50th (ft)	32	296	16	25	163	0	36	40	0	52	140	0
Queue Length 95th (ft)	m32	m290	m16	#57	#240	34	#78	67	26	#109	#222	37
Internal Link Dist (ft)		3252			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	229	1533	537	229	1533	580	305	1010	504	366	1073	595
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.90	0.16	0.60	0.86	0.25	0.65	0.26	0.14	0.77	0.74	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

38: Shaw Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	272	1652	114	163	1139	67	205	468	436	310	579	458
v/c Ratio	0.79	0.95	0.19	0.83	0.75	0.13	0.84	0.49	0.81	0.90	0.55	0.79
Control Delay	49.6	36.0	6.3	67.9	25.7	6.0	62.4	23.5	29.7	63.4	22.8	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	36.0	6.3	67.9	25.7	6.0	62.4	23.5	29.7	63.4	22.8	26.5
Queue Length 50th (ft)	60	249	6	36	160	0	45	88	115	69	108	119
Queue Length 95th (ft)	#117	#351	37	#87	208	26	#101	131	#266	#139	156	#269
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	343	1743	605	196	1526	522	245	961	538	343	1062	582
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.95	0.19	0.83	0.75	0.13	0.84	0.49	0.81	0.90	0.55	0.79

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

39: Shaw Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	136	1805	168	177	1265	76	229	612	293	172	477	183
v/c Ratio	0.52	0.96	0.24	0.84	0.65	0.12	0.87	0.70	0.59	0.65	0.55	0.37
Control Delay	36.2	35.0	4.1	65.0	19.1	4.7	62.9	27.4	16.2	42.4	24.1	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.2	35.0	4.1	65.0	19.1	4.7	62.9	27.4	16.2	42.4	24.1	8.6
Queue Length 50th (ft)	27	249	2	36	154	0	47	116	48	35	86	12
Queue Length 95th (ft)	52	#358	35	#87	200	24	#105	168	120	#73	130	57
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	264	1878	686	211	1940	651	264	871	500	264	871	499
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.96	0.24	0.84	0.65	0.12	0.87	0.70	0.59	0.65	0.55	0.37

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1709	39	159	568	23	484	163	119
v/c Ratio	1.03	0.05	0.98	0.27	0.08	1.01	1.01	0.11
Control Delay	63.6	13.6	120.8	12.3	38.7	74.3	126.9	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.6	13.6	120.8	12.3	38.7	74.3	126.9	9.1
Queue Length 50th (ft)	~749	11	125	106	14	~270	~129	7
Queue Length 95th (ft)	#888	31	#266	138	38	#495	#272	29
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1652	745	162	2094	273	479	162	1132
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.05	0.98	0.27	0.08	1.01	1.01	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

41: Ashlan Ave & Golden State

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	388	1251	602	332	252	316	286	203	232
v/c Ratio	0.92	0.75	0.90	0.69	0.70	0.81	0.72	0.57	0.49
Control Delay	62.2	22.6	54.3	19.6	44.8	41.6	33.9	40.6	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.2	22.6	54.3	19.6	44.8	41.6	33.9	40.6	8.5
Queue Length 50th (ft)	214	290	177	52	141	135	107	55	0
Queue Length 95th (ft)	#380	371	#274	148	#248	#290	#228	91	61
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	434	1691	674	485	359	389	395	359	475
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.74	0.89	0.68	0.70	0.81	0.72	0.57	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: N. Parkway Dr. & Herndon Ave

Lane Group	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	155	16	936	2130	270
v/c Ratio	0.43	0.04	0.86	1.04	0.27
Control Delay	18.2	11.5	11.1	47.7	3.7
Queue Delay	0.0	0.0	0.4	0.0	0.0
Total Delay	18.2	11.5	11.4	47.7	3.7
Queue Length 50th (ft)	41	4	0	242	9
Queue Length 95th (ft)	67	12	#205	#551	47
Internal Link Dist (ft)	297	586		195	
Turn Bay Length (ft)			200		100
Base Capacity (vph)	532	671	1169	2046	1012
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	17	0	34	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.30	0.02	0.82	1.04	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

3: NB 99 Off Ramp & Herndon Ave

Lane Group	NWL	NWR	NET	SWT
Lane Group Flow (vph)	89	1471	941	2399
v/c Ratio	0.23	1.68	0.70	1.80
Control Delay	40.7	337.7	13.4	381.7
Queue Delay	0.0	0.0	1.9	0.0
Total Delay	40.7	337.7	15.3	381.7
Queue Length 50th (ft)	57	~828	371	~2791
Queue Length 95th (ft)	105	#981	517	#3044
Internal Link Dist (ft)	381		416	203
Turn Bay Length (ft)		200		
Base Capacity (vph)	384	873	1335	1335
Starvation Cap Reductn	0	0	239	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.23	1.68	0.86	1.80

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	699	277	225	608	264	517	167	1761	540	368	1554	577
v/c Ratio	1.12	0.51	0.68	0.97	0.48	1.15	0.89	1.03	0.69	1.14	0.95	0.61
Control Delay	115.6	46.3	35.7	75.6	45.8	115.4	95.1	66.2	14.6	136.1	41.6	9.7
Queue Delay	0.0	0.0	119.5	360.6	0.0	0.0	0.0	0.0	0.0	0.0	388.0	0.0
Total Delay	115.6	46.3	155.2	436.2	45.8	115.4	95.1	66.2	14.6	136.1	429.6	9.7
Queue Length 50th (ft)	~293	95	83	222	90	~278	61	~488	95	~305	536	85
Queue Length 95th (ft)	#410	140	169	#337	133	#489	#126	#585	228	#491	#707	198
Internal Link Dist (ft)		665			800			120			1105	
Turn Bay Length (ft)	330		200	310			330		200	330		200
Base Capacity (vph)	624	547	329	624	547	448	187	1710	779	322	1641	942
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	148	291	0	0	0	0	0	0	810	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.12	0.51	1.24	1.83	0.48	1.15	0.89	1.03	0.69	1.14	1.87	0.61

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	479	2215	608	158	1727	150	736	138	158	185	192	420
v/c Ratio	1.26	1.19	0.75	0.59	1.02	0.25	1.21	0.26	0.28	0.56	0.51	0.95
Control Delay	170.9	118.1	16.5	49.9	57.5	8.7	142.1	27.0	5.8	45.8	37.8	56.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	170.9	118.1	16.5	49.9	57.5	8.7	142.1	27.0	5.8	45.8	37.8	56.1
Queue Length 50th (ft)	~177	~561	118	45	~369	16	~265	61	0	52	98	155
Queue Length 95th (ft)	#274	#657	264	77	#479	58	#376	110	45	86	165	#342
Internal Link Dist (ft)		770			2700			870			524	
Turn Bay Length (ft)	165		165	165		165	65			65		65
Base Capacity (vph)	381	1866	808	267	1695	600	610	525	559	343	373	442
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.26	1.19	0.75	0.59	1.02	0.25	1.21	0.26	0.28	0.54	0.51	0.95

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	196	1897	78	91	1677	30	125	194	20	139
v/c Ratio	1.77	0.82	0.10	0.36	0.75	0.04	0.65	0.34	0.11	0.30
Control Delay	405.8	22.9	3.7	39.3	20.8	4.8	55.0	22.9	37.7	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	405.8	22.9	3.7	39.3	20.8	4.8	55.0	22.9	37.7	17.2
Queue Length 50th (ft)	~149	292	0	22	235	0	32	62	5	32
Queue Length 95th (ft)	#274	357	22	45	289	14	#74	134	15	79
Internal Link Dist (ft)		2700			1876			1081		369
Turn Bay Length (ft)	350		250	250			140			
Base Capacity (vph)	111	2306	760	257	2352	748	193	563	185	460
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.77	0.82	0.10	0.35	0.71	0.04	0.65	0.34	0.11	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

8: Herndon Ave & Veterans Ave.

Lane Group	EBT	WBL	WBT	NER
Lane Group Flow (vph)	1803	389	1638	557
v/c Ratio	0.83	0.59	0.32	0.92
Control Delay	21.5	14.5	0.2	38.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	21.5	14.5	0.2	38.7
Queue Length 50th (ft)	327	66	0	112
Queue Length 95th (ft)	398	129	0	#271
Internal Link Dist (ft)	870		578	
Turn Bay Length (ft)				
Base Capacity (vph)	2166	664	5085	606
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.83	0.59	0.32	0.92

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	10	2228	122	442	1898	233	99	404	254	120	30
v/c Ratio	0.07	0.94	0.15	1.66	0.65	0.24	0.35	0.97	1.11	0.30	0.08
Control Delay	42.2	32.3	3.2	340.6	15.0	5.2	42.5	67.3	132.8	33.5	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	32.3	3.2	340.6	15.0	5.2	42.5	67.3	132.8	33.5	11.9
Queue Length 50th (ft)	3	424	0	~190	239	23	27	186	~86	60	0
Queue Length 95th (ft)	11	#552	28	#284	359	69	52	#372	#162	111	23
Internal Link Dist (ft)		578			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	153	2373	804	267	2905	961	305	416	229	405	368
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.94	0.15	1.66	0.65	0.24	0.32	0.97	1.11	0.30	0.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	579	1998	210	116	1932	589	223	662	75	623	579	423
v/c Ratio	1.69	1.08	0.32	0.67	1.22	0.79	0.87	0.88	0.19	1.04	0.52	0.73
Control Delay	349.1	74.3	9.0	58.2	130.6	19.0	69.3	45.6	11.0	81.0	24.7	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	349.1	74.3	9.0	58.2	130.6	19.0	69.3	45.6	11.0	81.0	24.7	25.3
Queue Length 50th (ft)	~221	~416	26	29	~439	101	58	170	5	~175	123	130
Queue Length 95th (ft)	#321	#510	73	#68	#534	#286	#120	#264	39	#276	173	#241
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	343	1843	657	172	1589	742	257	752	385	601	1106	583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.69	1.08	0.32	0.67	1.22	0.79	0.87	0.88	0.19	1.04	0.52	0.73

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

11: Herndon Ave & N. Blythe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	8	2684	1	5	2636	76	2	5	76	1	21
v/c Ratio	0.02	0.74	0.00	0.02	0.72	0.07	0.01	0.01	0.24	0.00	0.10
Control Delay	24.7	8.6	4.0	24.8	8.4	2.2	22.5	0.0	25.5	22.0	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	8.6	4.0	24.8	8.4	2.2	22.5	0.0	25.5	22.0	12.4
Queue Length 50th (ft)	1	129	0	1	124	1	0	0	13	0	0
Queue Length 95th (ft)	6	#454	2	5	#443	17	3	0	28	4	16
Internal Link Dist (ft)		2270			2660			994		550	
Turn Bay Length (ft)	220		140	220		140	235		120		120
Base Capacity (vph)	323	3648	1136	320	3644	1151	730	903	727	497	438
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.74	0.00	0.02	0.72	0.07	0.00	0.01	0.10	0.00	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	82	2229	440	572	2261	72	400	111	478	32	97	82
v/c Ratio	0.48	1.10	0.56	1.36	0.99	0.10	1.85	0.20	0.75	0.41	0.29	0.23
Control Delay	47.9	79.1	11.5	210.8	44.1	11.0	427.1	26.8	22.7	57.1	34.9	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.9	79.1	11.5	210.8	44.1	11.0	427.1	26.8	22.7	57.1	34.9	9.5
Queue Length 50th (ft)	45	~530	72	~223	~526	14	~349	50	121	18	48	0
Queue Length 95th (ft)	89	#626	165	#325	#628	40	#525	94	#288	#51	94	38
Internal Link Dist (ft)		2660			4430			2164			665	
Turn Bay Length (ft)	290		150	310		100	105		75	80		80
Base Capacity (vph)	197	2034	784	420	2278	726	216	542	640	79	331	349
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	1.10	0.56	1.36	0.99	0.10	1.85	0.20	0.75	0.41	0.29	0.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

13: Herndon Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	268	2509	157	382	2641	445	239	289	289	316	267	401
v/c Ratio	0.66	0.99	0.19	1.49	1.14	0.53	0.84	0.50	0.77	0.72	0.36	0.83
Control Delay	58.5	44.9	13.9	255.9	95.1	17.9	78.7	49.4	40.4	60.3	42.3	39.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.5	44.9	13.9	255.9	95.1	17.9	78.7	49.4	40.4	60.3	42.3	39.3
Queue Length 50th (ft)	103	680	51	~215	~862	125	95	109	117	122	93	162
Queue Length 95th (ft)	145	#822	92	m#172	m#584	m100	#163	157	#262	170	135	#329
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		190	245		125	160		160
Base Capacity (vph)	486	2543	807	257	2323	837	286	583	374	486	737	482
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.99	0.19	1.49	1.14	0.53	0.84	0.50	0.77	0.65	0.36	0.83

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

14: Herndon Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	120	2780	205	338	3359	351	230	166	526	243	175	188
v/c Ratio	1.05	1.11	0.25	1.07	1.20	0.38	1.00	0.31	1.17	1.03	0.16	0.48
Control Delay	124.6	70.8	3.4	94.8	108.5	5.2	116.6	47.3	137.7	117.6	38.6	32.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	124.6	70.8	3.4	94.8	108.5	5.2	116.6	47.3	137.7	117.6	38.6	32.3
Queue Length 50th (ft)	~53	~887	7	~152	~1135	38	~94	61	~479	~202	40	86
Queue Length 95th (ft)	m#61	m#923	m10	m94	m261	m11	#178	95	#699	#366	62	161
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	114	2500	833	315	2797	927	229	531	448	236	1102	390
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	1.11	0.25	1.07	1.20	0.38	1.00	0.31	1.17	1.03	0.16	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

15: Herndon Ave & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1120	2275	86	313	2653	247	202	1050	226	352	975	1221
v/c Ratio	1.40	0.89	0.11	0.99	1.46	0.40	1.17	1.03	0.50	1.37	1.22	1.57
Control Delay	219.5	14.8	0.8	103.8	239.4	21.1	172.3	83.9	16.9	230.6	152.3	287.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	219.5	14.8	0.8	103.8	239.4	21.1	172.3	83.9	16.9	230.6	152.3	287.8
Queue Length 50th (ft)	~592	447	0	126	~1028	93	~96	~319	39	~185	~489	~1352
Queue Length 95th (ft)	m#495	m318	m0	#222	#1118	166	#175	#413	116	#282	#621	#1616
Internal Link Dist (ft)		5199			5182			5307			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	801	2543	818	315	1822	619	172	1017	449	257	796	779
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.40	0.89	0.11	0.99	1.46	0.40	1.17	1.03	0.50	1.37	1.22	1.57

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	365	2232	423	205	1918	298	254	734	122	327	922	588
v/c Ratio	1.22	0.95	0.50	1.19	0.89	0.39	1.18	0.68	0.29	1.27	0.81	1.35
Control Delay	158.4	31.4	9.4	166.3	27.7	8.5	155.3	32.7	10.0	183.2	35.9	196.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	158.4	31.4	9.4	166.3	27.7	8.5	155.3	32.7	10.0	183.2	35.9	196.3
Queue Length 50th (ft)	~117	375	62	~64	313	40	~79	124	8	~107	160	~351
Queue Length 95th (ft)	#200	#503	138	#131	382	95	#152	165	50	#188	207	#548
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	300	2352	847	172	2161	768	215	1081	418	257	1144	436
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.95	0.50	1.19	0.89	0.39	1.18	0.68	0.29	1.27	0.81	1.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

17: N. Parkway Dr. & N. Grantland Ave.

Lane Group	EBT	EBR	NBL	NBR
Lane Group Flow (vph)	1164	1051	985	68
v/c Ratio	0.80	0.83	0.74	0.11
Control Delay	16.8	9.2	14.4	6.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.8	9.2	14.4	6.3
Queue Length 50th (ft)	114	0	89	6
Queue Length 95th (ft)	#215	#214	140	22
Internal Link Dist (ft)	586		2735	
Turn Bay Length (ft)		100		100
Base Capacity (vph)	1455	1270	1373	646
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.80	0.83	0.72	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

18: Bryan Ave. & W. Palo Alto Ave.

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	352	386	4	173	555	205	361	500	2	116	88
v/c Ratio	0.79	0.32	0.01	0.61	0.73	0.41	0.50	0.77	0.02	0.47	0.31
Control Delay	42.6	22.1	15.5	38.9	33.8	7.1	30.0	27.3	36.5	36.5	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	22.1	15.5	38.9	33.8	7.1	30.0	27.3	36.5	36.5	10.4
Queue Length 50th (ft)	152	71	0	74	122	0	79	151	1	50	0
Queue Length 95th (ft)	#327	131	8	140	196	53	127	#370	7	101	38
Internal Link Dist (ft)		700			612			177		213	
Turn Bay Length (ft)			150	150							150
Base Capacity (vph)	445	1196	538	361	819	524	788	658	315	491	482
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.32	0.01	0.48	0.68	0.39	0.46	0.76	0.01	0.24	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

28: Bryan Ave. & N. Carnegie Ave.

Lane Group	SET	NWL	NWT	NEL	NER
Lane Group Flow (vph)	685	672	307	311	1079
v/c Ratio	0.52	1.45	0.22	0.99	1.51
Control Delay	5.9	233.5	4.3	86.8	255.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.9	233.5	4.3	86.8	255.0
Queue Length 50th (ft)	114	~260	46	178	~603
Queue Length 95th (ft)	179	#476	72	#344	#847
Internal Link Dist (ft)	512		945	941	
Turn Bay Length (ft)				150	
Base Capacity (vph)	1319	463	1366	315	714
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.52	1.45	0.22	0.99	1.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

29: Golden State & N. Carnegie Ave.

Lane Group	SET	NWT	NWR	NET	SWT
Lane Group Flow (vph)	811	362	842	127	907
v/c Ratio	3.85dl	1.68	1.15	0.17	0.97
Control Delay	266.0	351.9	98.3	4.6	36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	266.0	351.9	98.3	4.6	36.0
Queue Length 50th (ft)	~327	~286	~318	16	292
Queue Length 95th (ft)	#443	#448	#539	34	#647
Internal Link Dist (ft)	310	2920		303	941
Turn Bay Length (ft)			65		
Base Capacity (vph)	537	215	734	782	979
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.51	1.68	1.15	0.16	0.93

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

31: Bullard Ave. & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	207	815	89	190	1078	204	960	182	95	954	143
v/c Ratio	0.78	1.29	0.15	1.40	1.15	1.87	0.98	0.36	0.87	0.97	0.29
Control Delay	49.3	166.7	4.8	246.3	104.8	449.2	50.0	12.6	93.3	48.6	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	166.7	4.8	246.3	104.8	449.2	50.0	12.6	93.3	48.6	10.7
Queue Length 50th (ft)	80	~424	0	~103	~274	~127	197	29	38	195	18
Queue Length 95th (ft)	#177	#621	26	#216	#391	#243	#318	75	#118	#316	57
Internal Link Dist (ft)		1463			807		3248			5307	
Turn Bay Length (ft)	150			140		120		55	90		70
Base Capacity (vph)	271	631	595	136	939	109	980	502	109	980	498
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	1.29	0.15	1.40	1.15	1.87	0.98	0.36	0.87	0.97	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

34: Shaw Ave & SR 99 SB Off Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	945	310	578	1673	158	340
v/c Ratio	1.55	0.47	0.93	0.65	0.47	0.59
Control Delay	281.3	11.5	51.6	8.1	37.9	8.5
Queue Delay	0.0	0.0	0.0	0.6	0.0	0.0
Total Delay	281.3	11.5	51.6	8.8	37.9	8.5
Queue Length 50th (ft)	~795	44	298	221	81	0
Queue Length 95th (ft)	#1027	119	#491	282	142	73
Internal Link Dist (ft)	8376			500	619	
Turn Bay Length (ft)			110			
Base Capacity (vph)	610	657	669	2556	334	575
Starvation Cap Reductn	0	0	0	474	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.55	0.47	0.86	0.80	0.47	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

35: Shaw Ave & SR 99 NB Off Ramps

Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Group Flow (vph)	104	1229	1872	421	368	346
v/c Ratio	0.70	1.13	1.14	0.44	0.73	0.60
Control Delay	55.1	87.7	96.1	8.4	30.3	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.1	87.7	96.1	8.4	30.3	14.0
Queue Length 50th (ft)	38	~534	~806	152	119	48
Queue Length 95th (ft)	#107	#751	m509	m84	#234	123
Internal Link Dist (ft)		500	2498		599	
Turn Bay Length (ft)	120					
Base Capacity (vph)	148	1087	1640	960	502	576
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	1.13	1.14	0.44	0.73	0.60

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

36: Shaw Ave & Golden State

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	72	1485	60	503	1989	443	343	441	63	51	759	961
v/c Ratio	1.22	1.44	0.12	1.62	1.30	0.56	1.66	0.36	0.11	0.44	0.76	1.44
Control Delay	159.7	231.0	20.0	317.0	158.5	11.5	349.8	30.9	7.4	65.1	44.9	231.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	159.7	231.0	20.0	317.0	158.5	11.5	349.8	30.9	7.4	65.1	44.9	231.8
Queue Length 50th (ft)	~68	~821	17	~579	~1040	131	~386	137	0	38	282	~840
Queue Length 95th (ft)	m#69	m#742	m17	m#426	m#681	m93	#573	185	32	81	356	#1094
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	59	1032	481	310	1534	795	207	1237	595	133	1003	666
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	1.44	0.12	1.62	1.30	0.56	1.66	0.36	0.11	0.38	0.76	1.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	334	2012	177	234	2138	322	330	928	172	568	511	195
v/c Ratio	1.46	1.32	0.31	1.02	1.40	0.52	1.15	0.98	0.33	1.66	0.51	0.35
Control Delay	236.6	178.7	11.4	98.6	207.5	10.2	131.7	50.2	7.1	332.2	20.2	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	236.6	178.7	11.4	98.6	207.5	10.2	131.7	50.2	7.1	332.2	20.2	6.8
Queue Length 50th (ft)	~138	~728	50	~45	~392	32	~75	174	8	~159	80	9
Queue Length 95th (ft)	m#57	m309	m23	#108	#482	94	#145	#291	47	#246	122	50
Internal Link Dist (ft)		3252			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	229	1526	565	229	1526	618	286	944	528	343	1003	565
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.46	1.32	0.31	1.02	1.40	0.52	1.15	0.98	0.33	1.66	0.51	0.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

38: Shaw Ave & N. Marks Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	676	1789	252	351	1838	197	492	788	213	254	534	491
v/c Ratio	1.97	1.03	0.38	1.79	1.20	0.34	2.01	0.82	0.39	0.74	0.50	0.85
Control Delay	470.4	53.3	6.8	400.8	124.0	7.5	490.9	32.6	9.5	45.5	22.2	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	470.4	53.3	6.8	400.8	124.0	7.5	490.9	32.6	9.5	45.5	22.2	32.6
Queue Length 50th (ft)	~238	~292	17	~119	~361	13	~174	166	20	56	98	141
Queue Length 95th (ft)	#337	#398	64	#196	#452	58	#262	#254	70	#107	143	#309
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	343	1743	670	196	1526	583	245	961	540	343	1062	577
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.97	1.03	0.38	1.79	1.20	0.34	2.01	0.82	0.39	0.74	0.50	0.85

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

39: Shaw Ave & N West Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	253	1736	162	305	1829	165	268	409	148	157	558	233
v/c Ratio	0.96	0.92	0.24	1.45	1.02	0.26	1.02	0.42	0.27	0.59	0.64	0.47
Control Delay	79.9	30.0	3.8	253.4	48.4	6.1	93.8	21.9	5.6	39.3	25.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.9	30.0	3.8	253.4	48.4	6.1	93.8	21.9	5.6	39.3	25.9	12.7
Queue Length 50th (ft)	52	234	0	~87	~268	10	~57	72	0	31	104	30
Queue Length 95th (ft)	#118	#336	33	#157	#378	46	#126	111	39	#64	152	87
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	264	1878	686	211	1799	642	264	969	541	264	871	494
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.92	0.24	1.45	1.02	0.26	1.02	0.42	0.27	0.59	0.64	0.47

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1195	75	434	1376	58	568	182	241
v/c Ratio	0.84	0.11	2.38	0.72	0.21	1.07	1.00	0.19
Control Delay	35.1	11.8	661.5	20.7	38.2	88.2	117.0	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.1	11.8	661.5	20.7	38.2	88.2	117.0	19.4
Queue Length 50th (ft)	382	17	~493	353	32	~332	~128	45
Queue Length 95th (ft)	465	45	#772	428	78	#623	#311	86
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1652	757	182	2094	273	529	182	1290
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.10	2.38	0.66	0.21	1.07	1.00	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

41: Ashlan Ave & Golden State

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	255	1266	1040	759	502	612	552	227	424
v/c Ratio	0.73	0.80	1.45	1.36	1.34	1.54	1.38	0.81	0.66
Control Delay	45.0	24.8	240.3	191.4	197.7	278.4	212.7	58.5	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.0	24.8	240.3	191.4	197.7	278.4	212.7	58.5	9.5
Queue Length 50th (ft)	128	295	~408	~406	~374	~479	~385	60	2
Queue Length 95th (ft)	208	377	#568	#658	#609	#746	#628	#132	87
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	432	1691	716	560	376	398	400	279	639
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.75	1.45	1.36	1.34	1.54	1.38	0.81	0.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2017 BASELINE PLUS PROJECT PHASES 1-4 TRAFFIC CONDITION

1: N. Parkway Dr. & Herndon Ave

Lane Group	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	133	13	26	343	148
v/c Ratio	0.16	0.01	0.03	0.43	0.31
Control Delay	5.6	4.4	2.3	14.2	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	4.4	2.3	14.2	4.6
Queue Length 50th (ft)	11	1	0	34	0
Queue Length 95th (ft)	36	6	4	52	26
Internal Link Dist (ft)	297	586		195	
Turn Bay Length (ft)					
Base Capacity (vph)	848	1055	908	1373	722
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.16	0.01	0.03	0.25	0.20

Intersection Summary

Lane Group	NWL	NWR	NET	SWT
Lane Group Flow (vph)	33	960	128	575
v/c Ratio	0.04	0.55	0.18	0.80
Control Delay	9.6	2.4	8.4	20.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.6	2.4	8.4	20.7
Queue Length 50th (ft)	5	0	21	126
Queue Length 95th (ft)	18	32	39	189
Internal Link Dist (ft)	499		416	193
Turn Bay Length (ft)				
Base Capacity (vph)	777	1762	877	877
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.04	0.54	0.15	0.66

Intersection Summary

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	593	258	154	43	278	33	795	242	153	396	421
v/c Ratio	0.87	0.23	0.19	0.20	0.54	0.11	0.55	0.39	0.53	0.31	0.50
Control Delay	42.8	19.0	2.8	34.0	20.0	29.8	23.8	6.2	32.4	28.9	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.8	19.0	2.8	34.0	20.0	29.8	23.8	6.2	32.4	28.9	14.1
Queue Length 50th (ft)	128	46	0	9	34	6	108	3	64	84	65
Queue Length 95th (ft)	#212	70	27	23	65	19	154	55	m112	128	131
Internal Link Dist (ft)		665			800		120			1105	
Turn Bay Length (ft)	200		250	200		200		80	200		
Base Capacity (vph)	687	1314	807	211	848	305	1456	620	289	1275	840
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.20	0.19	0.20	0.33	0.11	0.55	0.39	0.53	0.31	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	290	223	395	110	654	207	361	111	177	197	134	279
v/c Ratio	0.99	0.18	0.37	0.45	0.63	0.42	0.42	0.16	0.26	0.51	0.31	0.44
Control Delay	85.6	23.5	1.6	37.4	28.0	6.7	24.3	16.7	4.0	34.3	24.9	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.6	23.5	1.6	37.4	28.0	6.7	24.3	16.7	4.0	34.3	24.9	14.7
Queue Length 50th (ft)	71	21	0	24	91	0	69	33	0	41	48	63
Queue Length 95th (ft)	m#128	m41	m1	47	126	48	106	66	37	72	94	125
Internal Link Dist (ft)		770			2700			870			524	
Turn Bay Length (ft)	165		165	165		165	65			65		65
Base Capacity (vph)	294	1290	1054	245	1162	522	863	685	694	397	426	633
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.17	0.37	0.45	0.56	0.40	0.42	0.16	0.26	0.50	0.31	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	452	16	170	739	50	321	54	313
v/c Ratio	0.31	0.40	0.04	0.50	0.57	0.18	0.41	0.19	0.39
Control Delay	30.3	20.6	9.1	31.1	21.4	27.8	15.1	27.9	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.3	20.6	9.1	31.1	21.4	27.8	15.1	27.9	17.1
Queue Length 50th (ft)	19	49	0	30	87	8	81	9	94
Queue Length 95th (ft)	48	72	12	56	116	23	152	24	164
Internal Link Dist (ft)		2700			1876		1081		369
Turn Bay Length (ft)	350		250	250		140		100	
Base Capacity (vph)	177	1356	434	343	1412	283	781	283	796
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.33	0.04	0.50	0.52	0.18	0.41	0.19	0.39

Intersection Summary

Lane Group	EBT	WBL	WBT	NER
Lane Group Flow (vph)	673	1118	867	1104
v/c Ratio	0.44	0.65	0.17	0.57
Control Delay	12.4	9.8	0.1	6.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.4	9.8	0.1	6.6
Queue Length 50th (ft)	45	76	0	42
Queue Length 95th (ft)	61	146	0	88
Internal Link Dist (ft)	870		578	
Turn Bay Length (ft)				
Base Capacity (vph)	2034	1722	5085	1944
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.33	0.65	0.17	0.57

Intersection Summary

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	7	1646	125	120	1852	111	108	337	129	145	26
v/c Ratio	0.03	0.81	0.18	0.57	0.77	0.14	0.48	0.59	0.56	0.28	0.06
Control Delay	29.2	21.6	3.7	41.3	18.0	5.4	36.9	17.4	40.8	21.6	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	21.6	3.7	41.3	18.0	5.4	36.9	17.4	40.8	21.6	8.8
Queue Length 50th (ft)	1	210	0	24	193	7	22	66	26	47	0
Queue Length 95th (ft)	7	268	28	#54	#361	37	#44	147	#59	91	16
Internal Link Dist (ft)		578			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	211	2044	711	211	2419	792	227	568	229	519	459
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.81	0.18	0.57	0.77	0.14	0.48	0.59	0.56	0.28	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	318	1691	13	100	1512	154	173	236	187	309	333	382
v/c Ratio	0.81	0.84	0.02	0.51	0.95	0.19	0.71	0.27	0.38	0.90	0.35	0.71
Control Delay	48.5	25.1	8.8	41.6	37.7	2.7	49.3	22.6	9.3	62.9	21.8	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.5	25.1	8.8	41.6	37.7	2.7	49.3	22.6	9.3	62.9	21.8	22.5
Queue Length 50th (ft)	70	245	1	22	230	0	38	43	14	69	60	88
Queue Length 95th (ft)	#131	#340	11	44	#327	27	#81	72	61	#138	94	#196
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	392	2005	631	196	1598	828	245	859	494	343	961	538
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.84	0.02	0.51	0.95	0.19	0.71	0.27	0.38	0.90	0.35	0.71

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

11: Herndon Ave & N. Bylthe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBR
Lane Group Flow (vph)	18	2179	1	2	1755	54	1	54	12
v/c Ratio	0.08	0.71	0.00	0.01	0.59	0.06	0.00	0.35	0.02
Control Delay	39.9	14.5	7.0	39.5	14.0	5.2	29.0	48.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.9	14.5	7.0	39.5	14.0	5.2	29.0	48.4	0.1
Queue Length 50th (ft)	5	267	0	0	187	3	0	15	0
Queue Length 95th (ft)	15	431	2	4	313	22	2	34	0
Internal Link Dist (ft)		2270			2660		994		
Turn Bay Length (ft)	220		140	220		140		120	120
Base Capacity (vph)	227	3081	960	213	2954	936	1101	153	549
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.71	0.00	0.01	0.59	0.06	0.00	0.35	0.02

Intersection Summary

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	98	2084	271	430	1582	27	192	103	475	88	112	73
v/c Ratio	0.59	1.02	0.38	1.03	0.55	0.03	1.03	0.30	0.83	0.70	0.37	0.23
Control Delay	62.4	59.6	12.9	93.7	17.0	7.5	124.6	41.8	26.0	81.4	44.9	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	59.6	12.9	93.7	17.0	7.5	124.6	41.8	26.0	81.4	44.9	11.4
Queue Length 50th (ft)	67	~575	61	~325	264	3	~74	64	87	32	71	0
Queue Length 95th (ft)	122	#672	128	#521	315	17	#148	116	#266	#72	127	41
Internal Link Dist (ft)		2660			4430			2164			665	
Turn Bay Length (ft)	290		150	310		100	105		75	80		80
Base Capacity (vph)	193	2034	715	418	2859	897	187	339	571	125	305	320
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	1.02	0.38	1.03	0.55	0.03	1.03	0.30	0.83	0.70	0.37	0.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	149	2353	371	222	1773	224	161	195	264	165	203	179
v/c Ratio	0.73	0.95	0.45	0.83	0.77	0.30	0.84	0.28	0.60	0.86	0.29	0.31
Control Delay	59.5	31.8	12.7	67.3	23.9	11.6	78.1	31.7	20.8	81.4	31.9	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	31.8	12.7	67.3	23.9	11.6	78.1	31.7	20.8	81.4	31.9	21.6
Queue Length 50th (ft)	83	445	93	65	304	50	47	50	56	48	52	69
Queue Length 95th (ft)	#167	#581	164	#126	365	100	#104	81	138	#107	83	121
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		50	245		125	160		160
Base Capacity (vph)	216	2486	826	267	2292	754	191	708	437	191	708	584
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.95	0.45	0.83	0.77	0.30	0.84	0.28	0.60	0.86	0.29	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	66	2568	238	80	2072	225	95	151	292	259	232	50
v/c Ratio	0.48	1.00	0.27	0.58	0.81	0.26	0.46	0.25	0.86	1.04	0.17	0.11
Control Delay	59.0	43.1	5.9	64.8	24.1	6.7	53.2	37.3	53.2	112.6	29.2	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	43.1	5.9	64.8	24.1	6.7	53.2	37.3	53.2	112.6	29.2	9.1
Queue Length 50th (ft)	21	~646	25	26	400	29	30	44	132	~180	42	0
Queue Length 95th (ft)	43	#740	68	#56	468	71	57	74	#280	#336	64	29
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	137	2573	881	137	2573	869	206	602	340	248	1373	464
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	1.00	0.27	0.58	0.81	0.26	0.46	0.25	0.86	1.04	0.17	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	843	2279	107	130	1412	340	167	1112	102	155	1357	625
v/c Ratio	1.13	1.05	0.15	0.91	1.11	0.72	1.17	0.68	0.18	0.57	1.07	0.75
Control Delay	119.0	69.7	11.2	111.7	103.3	37.4	177.0	38.0	6.4	62.0	83.7	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.0	69.7	11.2	111.7	103.3	37.4	177.0	38.0	6.4	62.0	83.7	17.0
Queue Length 50th (ft)	~391	~707	23	52	~458	168	~79	275	0	60	~613	141
Queue Length 95th (ft)	#517	#801	58	#114	#555	280	#152	327	40	95	#751	298
Internal Link Dist (ft)		5199			5182			5342			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	744	2161	706	143	1271	475	143	1634	578	286	1268	835
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.13	1.05	0.15	0.91	1.11	0.72	1.17	0.68	0.18	0.54	1.07	0.75

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	342	1761	163	226	1803	385	28	300	117	214	737	138
v/c Ratio	0.89	0.84	0.22	0.75	0.92	0.52	0.16	0.26	0.26	0.83	0.47	0.24
Control Delay	61.4	25.7	4.6	53.0	32.1	10.7	38.7	26.3	7.1	64.5	24.3	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.4	25.7	4.6	53.0	32.1	10.7	38.7	26.3	7.1	64.5	24.3	5.9
Queue Length 50th (ft)	88	280	6	58	305	57	7	45	0	55	101	0
Queue Length 95th (ft)	#162	344	41	#110	#409	136	19	68	39	#113	157	41
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	386	2098	737	300	1970	744	172	1144	447	257	1576	586
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.84	0.22	0.75	0.92	0.52	0.16	0.26	0.26	0.83	0.47	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBL	NBR
Lane Group Flow (vph)	515	89	85	205
v/c Ratio	0.54	0.18	0.05	0.22
Control Delay	20.5	10.3	5.5	2.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	20.5	10.3	5.5	2.1
Queue Length 50th (ft)	65	0	4	0
Queue Length 95th (ft)	99	m30	12	23
Internal Link Dist (ft)	586		2735	
Turn Bay Length (ft)				
Base Capacity (vph)	1416	687	1819	934
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.36	0.13	0.05	0.22

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	207	209	2	323	357	52	115	147	3	9	387
v/c Ratio	0.60	0.35	0.01	0.65	0.33	0.10	0.25	0.27	0.02	0.03	0.68
Control Delay	30.5	23.8	17.0	28.3	19.8	7.7	25.4	7.0	29.3	21.8	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.5	23.8	17.0	28.3	19.8	7.7	25.4	7.0	29.3	21.8	9.9
Queue Length 50th (ft)	58	31	0	86	50	0	17	5	1	3	0
Queue Length 95th (ft)	#163	71	5	#262	107	25	45	48	9	14	65
Internal Link Dist (ft)		700			578			177		213	
Turn Bay Length (ft)	150		150	150		150	150		150		150
Base Capacity (vph)	406	967	434	537	1273	603	874	614	406	503	710
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.22	0.00	0.60	0.28	0.09	0.13	0.24	0.01	0.02	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SER	NEL	NET	SWT
Lane Group Flow (vph)	22	309	263	1083	1118
v/c Ratio	0.08	0.62	0.66	0.30	0.56
Control Delay	19.0	9.1	26.9	3.6	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.0	9.1	26.9	3.6	14.5
Queue Length 50th (ft)	6	0	68	27	88
Queue Length 95th (ft)	21	52	146	71	163
Internal Link Dist (ft)	405			1398	1849
Turn Bay Length (ft)			150		
Base Capacity (vph)	472	649	460	3551	2012
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.05	0.48	0.57	0.30	0.56

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	75	163	415	277	222	60	445	1397	440	108	1358	186
v/c Ratio	0.37	0.25	0.84	0.76	0.24	0.13	0.80	0.63	0.59	0.53	0.88	0.30
Control Delay	36.8	23.5	26.7	45.5	20.8	6.8	40.0	17.6	15.7	41.9	31.4	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	23.5	26.7	45.5	20.8	6.8	40.0	17.6	15.7	41.9	31.4	5.0
Queue Length 50th (ft)	15	30	61	59	38	0	93	172	103	23	198	0
Queue Length 95th (ft)	36	54	#194	#120	65	25	#168	230	205	#52	#298	42
Internal Link Dist (ft)		436			70			1507			1398	
Turn Bay Length (ft)	150		150	150		150	15		15	150		150
Base Capacity (vph)	203	812	556	365	990	486	570	2201	750	203	1544	610
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.20	0.75	0.76	0.22	0.12	0.78	0.63	0.59	0.53	0.88	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	93	376	242	65	295	5	88	14	17	28	73	166
v/c Ratio	0.35	0.45	0.43	0.25	0.35	0.01	0.28	0.02	0.03	0.16	0.23	0.41
Control Delay	26.0	18.8	6.1	24.1	17.9	11.6	23.0	16.2	9.2	28.2	23.0	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	18.8	6.1	24.1	17.9	11.6	23.0	16.2	9.2	28.2	23.0	8.3
Queue Length 50th (ft)	24	49	0	17	38	0	23	2	0	8	19	0
Queue Length 95th (ft)	74	102	49	54	79	7	67	16	13	33	59	46
Internal Link Dist (ft)		110			220			259			485	
Turn Bay Length (ft)	150		150	150		150				150		150
Base Capacity (vph)	315	1151	678	491	1441	647	548	932	801	179	573	602
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.33	0.36	0.13	0.20	0.01	0.16	0.02	0.02	0.16	0.13	0.28

Intersection Summary

23: W. Sierra Ave. & N. Polk Ave.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	52	286	17	302	104	143	121	96	29	138
v/c Ratio	0.15	0.43	0.05	0.47	0.17	0.23	0.14	0.17	0.03	0.17
Control Delay	7.0	6.4	6.1	9.2	2.6	8.7	7.0	8.3	7.2	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	6.4	6.1	9.2	2.6	8.7	7.0	8.3	7.2	2.7
Queue Length 50th (ft)	4	14	1	24	0	12	9	8	2	0
Queue Length 95th (ft)	18	52	8	72	15	45	34	32	13	20
Internal Link Dist (ft)		2293		4207			2050		2531	
Turn Bay Length (ft)										
Base Capacity (vph)	480	878	496	879	802	786	1050	723	1065	964
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.33	0.03	0.34	0.13	0.18	0.12	0.13	0.03	0.14

Intersection Summary

Lane Group	NBL	NBT	NBR	SBL	SBT	SEL	SET	NWL	NWT
Lane Group Flow (vph)	333	2645	452	213	2334	121	204	225	290
v/c Ratio	0.97	1.04	0.48	1.01	0.87	0.67	0.62	1.05	1.03
Control Delay	88.2	58.8	7.9	117.3	35.2	68.9	17.5	126.0	95.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.2	58.8	7.9	117.3	35.2	68.9	17.5	126.0	95.2
Queue Length 50th (ft)	259	~823	63	~177	473	95	11	~203	~181
Queue Length 95th (ft)	#447	#913	147	#333	527	162	90	#371	#369
Internal Link Dist (ft)		1313			1507		858		751
Turn Bay Length (ft)	380		250	320		310		300	
Base Capacity (vph)	345	2545	943	211	2698	210	329	214	282
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	1.04	0.48	1.01	0.87	0.58	0.62	1.05	1.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBT	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	2213	2249	104	216	1080
v/c Ratio	0.93	0.75	0.13	0.16	0.97
Control Delay	24.6	15.2	2.8	11.9	40.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	15.2	2.8	11.9	40.4
Queue Length 50th (ft)	259	182	0	24	208
Queue Length 95th (ft)	#383	225	21	43	#353
Internal Link Dist (ft)	222	1313			
Turn Bay Length (ft)			380		
Base Capacity (vph)	2373	2990	794	1373	1116
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.93	0.75	0.13	0.16	0.97

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBT	NBR	SBT	SEL	SER
Lane Group Flow (vph)	2449	393	1450	23	89
v/c Ratio	0.58	0.25	0.34	0.12	0.42
Control Delay	4.1	0.4	2.7	20.0	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.1	0.4	2.7	20.0	17.8
Queue Length 50th (ft)	107	0	46	8	17
Queue Length 95th (ft)	195	0	84	22	44
Internal Link Dist (ft)	987		279		
Turn Bay Length (ft)		400			
Base Capacity (vph)	4206	1583	4206	358	354
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.58	0.25	0.34	0.06	0.25

Intersection Summary

28: W. Bullard Ave. & N. Carnegie Ave.

Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Group Flow (vph)	462	195	586	628	293	445
v/c Ratio	0.34	0.16	0.94	0.46	0.90	0.68
Control Delay	5.3	0.9	37.0	6.5	67.5	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.3	0.9	37.0	6.5	67.5	9.3
Queue Length 50th (ft)	81	0	242	125	163	0
Queue Length 95th (ft)	122	16	#530	185	#307	85
Internal Link Dist (ft)	1488			945	941	
Turn Bay Length (ft)						
Base Capacity (vph)	1355	1204	626	1355	334	660
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.16	0.94	0.46	0.88	0.67

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SET	NWT	NWR	NET	SWT
Lane Group Flow (vph)	1202	439	296	60	775
v/c Ratio	1.23dl	0.53	0.34	0.14	1.19
Control Delay	99.9	16.4	4.5	14.7	120.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	99.9	16.4	4.5	14.7	120.8
Queue Length 50th (ft)	~352	135	17	17	~414
Queue Length 95th (ft)	#477	215	58	40	#625
Internal Link Dist (ft)	2208	2920		303	941
Turn Bay Length (ft)			65		
Base Capacity (vph)	1047	836	876	419	653
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.15	0.53	0.34	0.14	1.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

30: W. Bullard Ave. & N. Dante Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	18	907	39	27	1010	30	180	12	20	114	14	51
v/c Ratio	0.09	0.57	0.05	0.13	0.64	0.04	0.44	0.01	0.04	0.28	0.03	0.10
Control Delay	7.4	8.7	3.1	8.0	9.5	3.3	13.1	8.0	4.6	10.8	8.2	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.4	8.7	3.1	8.0	9.5	3.3	13.1	8.0	4.6	10.8	8.2	5.2
Queue Length 50th (ft)	1	51	0	2	58	0	26	1	0	16	2	2
Queue Length 95th (ft)	10	112	10	14	129	9	58	4	8	39	8	15
Internal Link Dist (ft)		1442			3543			564			4207	
Turn Bay Length (ft)												
Base Capacity (vph)	224	1698	780	224	1698	775	585	1487	677	586	783	686
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.53	0.05	0.12	0.59	0.04	0.31	0.01	0.03	0.19	0.02	0.07

Intersection Summary

31: Bullard & N. Palm Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	116	945	86	125	875	65	679	57	32	735	234
v/c Ratio	0.72	0.84	0.15	0.74	0.68	0.52	0.63	0.11	0.26	0.75	0.38
Control Delay	55.4	27.6	5.2	56.8	20.8	44.4	19.8	6.1	32.8	23.9	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	27.6	5.2	56.8	20.8	44.4	19.8	6.1	32.8	23.9	5.1
Queue Length 50th (ft)	42	170	0	46	150	24	89	0	11	125	0
Queue Length 95th (ft)	#120	#275	26	#129	#243	#72	165	22	35	181	43
Internal Link Dist (ft)		2564			1707		4355			5342	
Turn Bay Length (ft)											
Base Capacity (vph)	162	1181	586	170	1279	126	1187	569	123	1093	650
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.80	0.15	0.74	0.68	0.52	0.57	0.10	0.26	0.67	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	253	24	8	17	942	8	1658	424	938	177
v/c Ratio	0.55	0.07	0.03	0.13	1.04	0.10	0.80	0.46	0.26	0.12
Control Delay	41.3	29.2	15.6	45.6	68.8	50.4	26.8	30.7	6.1	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.3	29.2	15.6	45.6	68.8	50.4	26.8	30.7	6.1	0.6
Queue Length 50th (ft)	65	11	0	9	~342	4	253	97	39	0
Queue Length 95th (ft)	117	32	12	32	#472	21	421	175	137	13
Internal Link Dist (ft)		917		393			1285		987	
Turn Bay Length (ft)	150		150		150	150		150		150
Base Capacity (vph)	616	536	461	296	919	78	2224	935	3629	1475
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.04	0.02	0.06	1.03	0.10	0.75	0.45	0.26	0.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

33: W. Barstow Ave. & N. Grantland Ave.

Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	289	108	15	4	13	4
v/c Ratio	0.45	0.17	0.02	0.01	0.02	0.01
Control Delay	7.1	5.0	7.2	5.5	7.2	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	5.0	7.2	5.5	7.2	5.5
Queue Length 50th (ft)	17	6	1	0	1	0
Queue Length 95th (ft)	38	16	7	3	6	3
Internal Link Dist (ft)	925	1278	2578		2526	
Turn Bay Length (ft)						
Base Capacity (vph)	898	896	960	930	1083	930
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.12	0.02	0.00	0.01	0.00

Intersection Summary

Lane Group	EBT	EBR	WBT	SBL	SBR
Lane Group Flow (vph)	718	67	771	247	41
v/c Ratio	0.55	0.04	0.59	0.32	0.06
Control Delay	11.4	0.0	13.5	10.1	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	0.0	13.5	10.1	4.0
Queue Length 50th (ft)	62	0	70	34	0
Queue Length 95th (ft)	85	0	m95	81	13
Internal Link Dist (ft)	8376		500		
Turn Bay Length (ft)		150			
Base Capacity (vph)	1460	1583	1460	789	729
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.49	0.04	0.53	0.31	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

35: Shaw Ave & SR 99 NB Ramps

Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	654	24	982	486	623	140
v/c Ratio	0.50	0.02	0.75	0.31	0.82	0.19
Control Delay	8.8	0.0	15.0	0.5	24.1	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	0.0	15.0	0.5	24.1	3.3
Queue Length 50th (ft)	31	0	89	0	120	2
Queue Length 95th (ft)	90	m0	138	0	#279	23
Internal Link Dist (ft)	500		2498			
Turn Bay Length (ft)				150		
Base Capacity (vph)	1416	1583	1416	1583	762	753
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.02	0.69	0.31	0.82	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	10	686	45	379	872	412	612	423	3	17	360	646
v/c Ratio	0.17	1.01	0.13	1.03	0.59	0.47	1.04	0.25	0.00	0.23	0.76	1.02
Control Delay	63.0	85.8	16.3	86.7	40.0	15.4	86.7	20.4	13.0	63.2	61.7	75.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	85.8	16.3	86.7	40.0	15.4	86.7	20.4	13.0	63.2	61.7	75.7
Queue Length 50th (ft)	8	~287	4	~323	364	95	~511	94	0	13	143	~501
Queue Length 95th (ft)	27	#416	37	m#461	436	m204	#737	148	6	38	#201	#734
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	59	678	334	369	1487	877	590	1664	746	74	472	632
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	1.01	0.13	1.03	0.59	0.47	1.04	0.25	0.00	0.23	0.76	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	100	1399	124	116	1337	63	212	171	95	14	807	140
v/c Ratio	0.44	0.87	0.21	0.51	0.83	0.12	0.69	0.12	0.13	0.06	0.79	0.25
Control Delay	28.8	20.8	2.6	35.2	25.7	5.6	41.0	12.3	4.4	26.8	27.1	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.8	20.8	2.6	35.2	25.7	5.6	41.0	12.3	4.4	26.8	27.1	5.0
Queue Length 50th (ft)	22	182	1	21	166	0	39	18	0	2	141	0
Queue Length 95th (ft)	m22	m176	m1	43	#245	22	#86	43	27	10	#225	34
Internal Link Dist (ft)		3260			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	229	1606	585	229	1606	543	308	1478	717	246	1019	556
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.87	0.21	0.51	0.83	0.12	0.69	0.12	0.13	0.06	0.79	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	138	1868	100	153	1213	42	197	461	267	263	471	573
v/c Ratio	0.28	0.92	0.15	0.84	0.77	0.08	0.72	0.54	0.56	0.82	0.53	0.80
Control Delay	29.3	30.3	6.2	72.5	28.3	7.6	49.9	27.7	18.2	55.9	26.6	26.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	30.3	6.2	72.5	28.3	7.6	49.9	27.7	18.2	55.9	26.6	26.8
Queue Length 50th (ft)	28	293	7	37	194	0	46	98	55	63	99	201
Queue Length 95th (ft)	53	#400	35	#88	#253	22	#93	144	128	#123	144	330
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	595	2034	678	183	1578	520	275	849	476	320	897	766
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.92	0.15	0.84	0.77	0.08	0.72	0.54	0.56	0.82	0.53	0.75

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	161	1813	159	113	1435	66	195	537	435	162	472	63
v/c Ratio	0.66	0.90	0.22	0.58	0.79	0.11	0.72	0.55	0.82	0.72	0.51	0.14
Control Delay	46.0	27.9	4.4	45.0	23.5	5.4	50.0	24.4	31.6	53.7	24.4	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.0	27.9	4.4	45.0	23.5	5.4	50.0	24.4	31.6	53.7	24.4	7.0
Queue Length 50th (ft)	35	265	4	25	193	1	43	104	123	36	91	0
Queue Length 95th (ft)	#74	#370	37	#54	245	23	#95	151	#277	#86	135	26
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	245	2016	715	196	1889	627	269	973	531	225	928	462
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.90	0.22	0.58	0.76	0.11	0.72	0.55	0.82	0.72	0.51	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1397	34	116	629	269	250	193	486
v/c Ratio	0.93	0.05	0.92	0.33	0.76	0.71	0.57	0.72
Control Delay	35.9	11.1	104.9	11.8	25.4	21.3	39.9	37.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	11.1	104.9	11.8	25.4	21.3	39.9	37.7
Queue Length 50th (ft)	355	6	62	90	40	30	94	119
Queue Length 95th (ft)	#565	25	#175	143	125	108	173	#189
Internal Link Dist (ft)	14973			1158	1272			429
Turn Bay Length (ft)		100	575					
Base Capacity (vph)	1510	684	126	1929	429	425	336	676
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.05	0.92	0.33	0.63	0.59	0.57	0.72

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	395	1103	621	266	214	254	252	239	253
v/c Ratio	0.90	0.64	0.89	0.58	0.66	0.73	0.69	0.62	0.51
Control Delay	58.4	18.6	50.9	17.1	44.7	38.1	32.2	41.8	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.4	18.6	50.9	17.1	44.7	38.1	32.2	41.8	8.6
Queue Length 50th (ft)	215	228	181	42	120	108	88	65	0
Queue Length 95th (ft)	#378	294	#275	120	#213	#231	#195	105	63
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	455	1770	717	464	324	349	365	385	494
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.62	0.87	0.57	0.66	0.73	0.69	0.62	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	128	15	186	1608	121
v/c Ratio	0.20	0.02	0.23	1.08	0.16
Control Delay	12.3	11.2	3.3	65.5	3.5
Queue Delay	0.0	0.0	0.0	0.2	0.0
Total Delay	12.3	11.2	3.3	65.6	3.5
Queue Length 50th (ft)	24	3	0	~804	8
Queue Length 95th (ft)	65	13	34	m290	m2
Internal Link Dist (ft)	297	586		195	
Turn Bay Length (ft)					
Base Capacity (vph)	644	809	792	2060	998
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	16	0	0	61	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.20	0.02	0.23	0.80	0.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	NWL	NWR	NET	SWT
Lane Group Flow (vph)	50	1392	286	1758
v/c Ratio	0.17	0.96	0.20	1.23
Control Delay	42.9	23.6	6.8	130.3
Queue Delay	0.0	0.0	0.0	11.8
Total Delay	42.9	23.6	6.8	142.1
Queue Length 50th (ft)	33	98	77	~1708
Queue Length 95th (ft)	70	#293	132	#1972
Internal Link Dist (ft)	499		416	193
Turn Bay Length (ft)		200		
Base Capacity (vph)	325	1475	1424	1424
Starvation Cap Reductn	0	0	0	30
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.15	0.94	0.20	1.26

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	438	260	109	501	749	73	1151	408	446	1137	387
v/c Ratio	0.84	0.46	0.32	0.94	0.88	0.36	0.94	0.75	0.95	0.68	0.41
Control Delay	52.5	36.5	9.4	65.3	30.7	46.4	49.9	25.4	65.0	22.4	3.2
Queue Delay	0.0	0.0	0.8	241.6	0.0	0.0	0.0	0.0	0.0	18.7	0.0
Total Delay	52.5	36.5	10.2	306.9	30.7	46.4	49.9	25.4	65.0	41.2	3.2
Queue Length 50th (ft)	125	69	0	146	105	21	238	104	253	275	0
Queue Length 95th (ft)	#198	107	44	#242	#201	43	#332	#246	#446	354	50
Internal Link Dist (ft)		665			800		120			1105	
Turn Bay Length (ft)	200		250	200		200		80	200		
Base Capacity (vph)	534	629	371	534	888	200	1222	541	471	1661	948
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	106	211	0	0	0	0	0	544	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.41	0.41	1.55	0.84	0.37	0.94	0.75	0.95	1.02	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	340	474	284	54	274	149	574	272	134	185	385	274
v/c Ratio	0.83	0.40	0.28	0.30	0.43	0.46	0.55	0.35	0.18	0.43	0.86	0.38
Control Delay	50.8	26.0	4.6	38.5	32.2	10.4	24.8	17.7	4.1	33.0	48.5	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	26.0	4.6	38.5	32.2	10.4	24.8	17.7	4.1	33.0	48.5	9.6
Queue Length 50th (ft)	80	72	26	12	43	0	113	83	0	41	172	43
Queue Length 95th (ft)	#146	98	63	29	65	47	171	159	34	68	#320	97
Internal Link Dist (ft)		770			2700			870			524	
Turn Bay Length (ft)	165		165	165		165	65			65		65
Base Capacity (vph)	412	1428	999	183	1085	455	1038	777	738	441	447	729
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.33	0.28	0.30	0.25	0.33	0.55	0.35	0.18	0.42	0.86	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	722	16	170	450	34	399	54	313
v/c Ratio	0.31	0.62	0.04	0.73	0.27	0.23	0.61	0.36	0.44
Control Delay	30.3	22.8	9.1	46.4	15.9	30.4	24.0	34.8	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.3	22.8	9.1	46.4	15.9	30.4	24.0	34.8	18.4
Queue Length 50th (ft)	19	85	0	60	47	12	129	19	73
Queue Length 95th (ft)	48	114	12	#143	68	36	#263	#58	173
Internal Link Dist (ft)		2700			1876		1081		369
Turn Bay Length (ft)	350		250	250		140		100	
Base Capacity (vph)	177	1356	434	236	1702	147	650	149	717
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.53	0.04	0.72	0.26	0.23	0.61	0.36	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NER
Lane Group Flow (vph)	1309	1429	751	1142
v/c Ratio	0.79	0.81	0.15	0.61
Control Delay	19.9	10.9	0.0	10.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	19.9	10.9	0.0	10.3
Queue Length 50th (ft)	125	218	0	91
Queue Length 95th (ft)	#172	m294	m0	132
Internal Link Dist (ft)	870		578	
Turn Bay Length (ft)				
Base Capacity (vph)	1662	1785	5085	1881
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.79	0.80	0.15	0.61

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	45	2036	371	293	1750	147	390	468	207	474	40
v/c Ratio	0.33	1.03	0.48	0.95	0.73	0.19	1.03	0.88	0.86	1.02	0.10
Control Delay	50.2	53.8	8.9	86.1	24.1	9.3	99.4	51.0	78.4	84.6	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.2	53.8	8.9	86.1	24.1	9.3	99.4	51.0	78.4	84.6	14.2
Queue Length 50th (ft)	14	~521	44	97	339	27	~138	266	68	~312	5
Queue Length 95th (ft)	m21	#606	m89	#179	401	64	#232	#450	#133	#516	31
Internal Link Dist (ft)		578			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	137	1983	781	309	2400	786	378	532	240	466	418
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	1.03	0.48	0.95	0.73	0.19	1.03	0.88	0.86	1.02	0.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	516	1805	113	152	1696	275	78	312	93	182	362	421
v/c Ratio	0.87	0.77	0.14	0.71	0.95	0.35	0.45	0.41	0.23	0.85	0.42	0.71
Control Delay	48.9	20.7	4.5	56.1	38.5	9.5	45.7	29.2	7.8	71.2	27.9	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	20.7	4.5	56.1	38.5	9.5	45.7	29.2	7.8	71.2	27.9	17.9
Queue Length 50th (ft)	130	263	5	39	297	48	20	71	0	47	82	63
Queue Length 95th (ft)	#212	322	32	#82	#404	100	41	108	36	#103	123	#184
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	601	2352	782	215	1788	792	172	752	410	215	867	595
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.77	0.14	0.71	0.95	0.35	0.45	0.41	0.23	0.85	0.42	0.71

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	2076	1	4	2126	65	2	4	65	1	14
v/c Ratio	0.69	0.00	0.02	0.68	0.07	0.01	0.01	0.33	0.00	0.04
Control Delay	15.0	8.0	39.8	13.1	3.8	39.5	0.0	45.8	30.0	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	8.0	39.8	13.1	3.8	39.5	0.0	45.8	30.0	14.9
Queue Length 50th (ft)	245	0	1	256	5	0	0	18	1	0
Queue Length 95th (ft)	415	2	6	321	21	4	0	39	5	16
Internal Link Dist (ft)	2270			2660			994		634	
Turn Bay Length (ft)		140	220		140	235		120		120
Base Capacity (vph)	2992	932	215	3105	982	610	1012	195	361	319
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.00	0.02	0.68	0.07	0.00	0.00	0.33	0.00	0.04

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	113	1928	312	414	2025	77	375	161	334	34	139	111
v/c Ratio	0.62	1.01	0.45	1.00	0.79	0.09	1.01	0.34	0.52	0.30	0.50	0.33
Control Delay	66.3	60.8	16.6	91.3	27.6	10.9	102.0	40.5	8.3	63.5	53.7	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.3	60.8	16.6	91.3	27.6	10.9	102.0	40.5	8.3	63.5	53.7	11.2
Queue Length 50th (ft)	85	~554	90	~324	460	18	~153	106	8	13	100	0
Queue Length 95th (ft)	145	#672	172	#533	546	46	#256	173	89	31	167	52
Internal Link Dist (ft)		2660			4430			2164			665	
Turn Bay Length (ft)	290		150	310		100	105		75	80		80
Base Capacity (vph)	221	1907	686	413	2572	816	372	469	639	114	279	332
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	1.01	0.45	1.00	0.79	0.09	1.01	0.34	0.52	0.30	0.50	0.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	292	1951	232	246	2073	372	225	318	203	213	286	560
v/c Ratio	0.99	0.80	0.29	0.72	0.99	0.52	0.98	0.51	0.47	0.93	0.45	0.91
Control Delay	89.7	23.1	10.5	33.7	52.3	29.0	99.5	36.7	10.5	87.7	35.8	47.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.7	23.1	10.5	33.7	52.3	29.0	99.5	36.7	10.5	87.7	35.8	47.1
Queue Length 50th (ft)	168	330	50	62	473	193	67	86	8	63	77	294
Queue Length 95th (ft)	#329	394	97	m71	m#524	m212	#140	129	67	#131	117	#500
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		50	245		125	160		160
Base Capacity (vph)	295	2433	796	343	2091	710	229	629	434	229	629	617
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.80	0.29	0.72	0.99	0.52	0.98	0.51	0.47	0.93	0.45	0.91

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	98	2034	104	187	2452	185	188	367	96	166	320	153
v/c Ratio	0.64	0.88	0.13	0.70	0.95	0.22	0.57	0.55	0.26	0.94	0.33	0.40
Control Delay	43.0	40.7	13.4	55.6	32.1	6.6	42.9	22.6	10.0	96.0	32.5	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	40.7	13.4	55.6	32.1	6.6	42.9	22.6	10.0	96.0	32.5	16.9
Queue Length 50th (ft)	28	461	29	54	482	23	48	112	9	95	58	28
Queue Length 95th (ft)	m34	m512	m43	#100	#624	59	m70	m138	m24	#217	84	83
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	153	2317	771	267	2576	854	343	668	370	177	981	383
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.88	0.13	0.70	0.95	0.22	0.55	0.55	0.26	0.94	0.33	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	870	1421	105	99	2157	164	263	1182	67	272	1436	670
v/c Ratio	1.45	0.64	0.14	0.50	1.34	0.30	1.32	0.84	0.14	0.80	1.28	0.81
Control Delay	247.1	28.3	5.8	64.1	191.4	20.6	216.2	47.5	8.5	71.4	168.7	32.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	247.1	28.3	5.8	64.1	191.4	20.6	216.2	47.5	8.5	71.4	168.7	32.8
Queue Length 50th (ft)	~473	310	6	39	~798	58	~135	317	0	107	~742	412
Queue Length 95th (ft)	#599	363	39	68	#893	116	#222	376	35	#172	#881	593
Internal Link Dist (ft)		5199			5182			5342			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	601	2209	740	200	1610	544	200	1406	486	343	1121	831
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.45	0.64	0.14	0.50	1.34	0.30	1.32	0.84	0.14	0.79	1.28	0.81

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	139	1405	350	516	1554	359	151	926	272	207	1212	260
v/c Ratio	0.61	0.94	0.62	0.94	0.79	0.50	0.83	0.72	0.46	0.75	0.85	0.46
Control Delay	46.3	40.1	18.4	59.4	23.9	11.5	70.9	29.3	6.6	52.7	32.8	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	40.1	18.4	59.4	23.9	11.5	70.9	29.3	6.6	52.7	32.8	11.6
Queue Length 50th (ft)	32	232	78	124	227	59	36	143	4	49	194	33
Queue Length 95th (ft)	#67	#326	164	#215	284	132	#86	188	59	#100	#253	95
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	229	1492	568	549	1966	718	183	1288	596	275	1424	563
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.94	0.62	0.94	0.79	0.50	0.83	0.72	0.46	0.75	0.85	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBL	NBR
Lane Group Flow (vph)	1258	426	229	159
v/c Ratio	0.92	0.34	0.37	0.42
Control Delay	22.8	1.1	35.7	16.0
Queue Delay	10.3	0.0	0.0	0.0
Total Delay	33.1	1.1	35.7	16.0
Queue Length 50th (ft)	354	0	63	24
Queue Length 95th (ft)	#923	20	95	79
Internal Link Dist (ft)	586		2735	
Turn Bay Length (ft)				
Base Capacity (vph)	1406	1299	692	409
Starvation Cap Reductn	145	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.00	0.33	0.33	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	492	605	9	87	693	176	496	486	3	193	77
v/c Ratio	0.92	0.38	0.01	0.56	0.90	0.39	0.78	0.79	0.03	0.69	0.25
Control Delay	63.5	23.3	12.1	64.0	58.4	15.5	52.6	40.0	51.0	58.9	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.5	23.3	12.1	64.0	58.4	15.5	52.6	40.0	51.0	58.9	11.8
Queue Length 50th (ft)	346	157	0	61	255	28	176	259	2	134	0
Queue Length 95th (ft)	#612	234	11	119	#397	96	244	#578	12	218	42
Internal Link Dist (ft)		700			578			177		213	
Turn Bay Length (ft)	150		150	150		150	150		150		150
Base Capacity (vph)	533	1598	720	186	799	456	749	614	225	342	354
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.38	0.01	0.47	0.87	0.39	0.66	0.79	0.01	0.56	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Group Flow (vph)	83	330	434	1060	1296	134
v/c Ratio	0.31	0.64	0.83	0.29	0.74	0.21
Control Delay	24.6	9.2	36.0	3.7	21.1	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	9.2	36.0	3.7	21.1	4.6
Queue Length 50th (ft)	26	0	132	34	141	0
Queue Length 95th (ft)	58	57	#309	75	#246	33
Internal Link Dist (ft)	405			1398	1849	
Turn Bay Length (ft)			150			
Base Capacity (vph)	436	638	543	3614	1760	636
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.52	0.80	0.29	0.74	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	239	447	826	897	355	208	749	1557	735	77	1618	179
v/c Ratio	0.66	0.49	1.39	1.36	0.29	0.34	1.38	0.80	1.10	0.68	1.23	0.38
Control Delay	60.6	39.9	209.3	211.0	29.8	18.0	219.5	36.7	96.7	85.3	149.5	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	39.9	209.3	211.0	29.8	18.0	219.5	36.7	96.7	85.3	149.5	21.4
Queue Length 50th (ft)	92	155	~702	~472	106	64	~396	388	~596	30	~567	58
Queue Length 95th (ft)	135	207	#949	#598	147	130	#518	450	#836	#68	#664	124
Internal Link Dist (ft)		436			70			1507			1398	
Turn Bay Length (ft)	150		150	150		150	15		15	150		150
Base Capacity (vph)	396	914	596	658	1219	606	544	1949	668	114	1314	472
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.49	1.39	1.36	0.29	0.34	1.38	0.80	1.10	0.68	1.23	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	370	836	100	48	868	28	250	146	63	90	7	304
v/c Ratio	0.88	0.50	0.12	0.30	0.88	0.06	0.78	0.39	0.17	0.49	0.04	0.71
Control Delay	54.6	18.3	5.8	40.3	40.0	12.1	50.4	32.7	9.0	44.5	32.7	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.6	18.3	5.8	40.3	40.0	12.1	50.4	32.7	9.0	44.5	32.7	14.0
Queue Length 50th (ft)	178	156	3	23	213	2	117	67	0	42	3	0
Queue Length 95th (ft)	#384	272	37	58	#373	22	#254	121	31	95	15	69
Internal Link Dist (ft)		110			220			259			485	
Turn Bay Length (ft)	150		150	150		150				150		150
Base Capacity (vph)	422	1686	801	307	1012	469	348	480	455	212	339	537
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.50	0.12	0.16	0.86	0.06	0.72	0.30	0.14	0.42	0.02	0.57

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	98	786	39	336	130	170	144	138	153	183
v/c Ratio	0.19	0.81	0.20	0.34	0.14	0.53	0.30	0.43	0.32	0.33
Control Delay	6.5	15.8	8.7	6.9	1.8	22.1	14.3	19.6	16.3	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.5	15.8	8.7	6.9	1.8	22.1	14.3	19.6	16.3	5.1
Queue Length 50th (ft)	10	117	4	37	0	36	24	28	30	0
Queue Length 95th (ft)	33	#301	20	91	17	95	67	77	77	36
Internal Link Dist (ft)		2293		4207			2050		2531	
Turn Bay Length (ft)										
Base Capacity (vph)	615	1139	226	1159	1034	435	654	438	659	678
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.69	0.17	0.29	0.13	0.39	0.22	0.32	0.23	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBL	NBT	NBR	SBL	SBT	SEL	SET	NWL	NWT
Lane Group Flow (vph)	666	2907	316	389	4011	348	959	340	631
v/c Ratio	1.80	1.20	0.37	1.76	1.61	1.55	2.59	1.73	2.15
Control Delay	402.2	126.0	9.1	391.7	305.4	305.2	742.1	383.3	551.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	402.2	126.0	9.1	391.7	305.4	305.2	742.1	383.3	551.7
Queue Length 50th (ft)	~776	~1003	56	~449	~1304	~400	~1185	~410	~732
Queue Length 95th (ft)	#1007	#1090	120	#644	#1358	#596	#1452	#605	#973
Internal Link Dist (ft)		1313			1507		858		751
Turn Bay Length (ft)	380		250	320		310		300	
Base Capacity (vph)	369	2415	850	221	2488	224	370	196	293
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.80	1.20	0.37	1.76	1.61	1.55	2.59	1.73	2.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBT	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	2920	4230	189	232	1216
v/c Ratio	1.03	1.16	0.19	0.18	1.18
Control Delay	52.0	104.0	2.8	26.3	127.2
Queue Delay	0.0	43.2	0.0	0.1	0.0
Total Delay	52.0	147.2	2.8	26.5	127.2
Queue Length 50th (ft)	~875	~1131	6	62	~643
Queue Length 95th (ft)	#963	#1179	38	92	#793
Internal Link Dist (ft)	222	1313			
Turn Bay Length (ft)			380		
Base Capacity (vph)	2823	3631	972	1259	1028
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	278	0	403	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.03	1.26	0.19	0.27	1.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBT	NBR	SBT	SEL	SER
Lane Group Flow (vph)	2762	118	4462	159	496
v/c Ratio	0.80	0.07	1.43dr	0.37	1.27
Control Delay	14.5	0.1	168.3	37.3	174.0
Queue Delay	0.3	0.0	0.9	0.1	0.0
Total Delay	14.8	0.1	169.1	37.5	174.0
Queue Length 50th (ft)	447	0	~1480	93	~443
Queue Length 95th (ft)	510	0	#1546	156	#651
Internal Link Dist (ft)	987		279		
Turn Bay Length (ft)		400			
Base Capacity (vph)	3467	1583	3369	434	392
Starvation Cap Reductn	0	0	5	0	0
Spillback Cap Reductn	201	0	0	26	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.85	0.07	1.33	0.39	1.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Group Flow (vph)	918	334	603	517	541	495
v/c Ratio	0.70	0.28	2.36	0.40	1.31	0.95
Control Delay	14.4	1.2	639.9	8.6	193.6	57.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	1.2	639.9	8.6	193.6	57.1
Queue Length 50th (ft)	378	0	~573	149	~539	248
Queue Length 95th (ft)	527	26	#801	208	#757	#468
Internal Link Dist (ft)	1488			945	941	
Turn Bay Length (ft)						
Base Capacity (vph)	1304	1208	256	1304	413	520
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.28	2.36	0.40	1.31	0.95

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SET	NWT	NWR	NET	SWT
Lane Group Flow (vph)	1424	1008	732	288	937
v/c Ratio	3.45dl	1.52	0.83	0.84	1.56
Control Delay	271.5	265.2	25.1	49.2	286.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	271.5	265.2	25.1	49.2	286.3
Queue Length 50th (ft)	~678	~902	295	156	~831
Queue Length 95th (ft)	#816	#1143	#507	#317	#1073
Internal Link Dist (ft)	2208	2920		303	941
Turn Bay Length (ft)			65		
Base Capacity (vph)	926	664	886	341	599
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.54	1.52	0.83	0.84	1.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	110	1230	61	61	1024	58	61	15	10	218	30	34
v/c Ratio	0.51	0.67	0.07	0.40	0.56	0.07	0.16	0.02	0.02	0.58	0.06	0.07
Control Delay	17.0	9.5	2.1	15.8	8.2	2.2	14.8	13.4	8.6	21.7	13.8	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	9.5	2.1	15.8	8.2	2.2	14.8	13.4	8.6	21.7	13.8	6.5
Queue Length 50th (ft)	14	94	0	7	72	0	11	1	0	44	5	0
Queue Length 95th (ft)	62	177	12	38	136	11	38	7	9	117	22	16
Internal Link Dist (ft)		1442			3543			564			4207	
Turn Bay Length (ft)												
Base Capacity (vph)	256	2181	999	181	2181	998	490	1261	570	496	664	586
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.56	0.06	0.34	0.47	0.06	0.12	0.01	0.02	0.44	0.05	0.06

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	432	705	121	38	1431	55	976	453	86	1189	397
v/c Ratio	1.22	0.39	0.14	0.45	1.22	0.93	0.97	0.73	0.97	1.12	0.58
Control Delay	163.2	19.0	3.3	72.7	142.4	157.2	65.5	24.9	143.8	105.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	163.2	19.0	3.3	72.7	142.4	157.2	65.5	24.9	143.8	105.9	12.7
Queue Length 50th (ft)	~411	180	0	29	~718	43	394	148	68	~558	57
Queue Length 95th (ft)	#612	228	32	67	#859	#130	#534	279	#175	#694	159
Internal Link Dist (ft)		2564			1707		4355			5342	
Turn Bay Length (ft)											
Base Capacity (vph)	354	1829	876	86	1173	59	1003	624	89	1062	684
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.39	0.14	0.44	1.22	0.93	0.97	0.73	0.97	1.12	0.58

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	204	36	21	83	893	25	1717	1051	1863	321
v/c Ratio	0.54	0.09	0.06	0.49	0.73	0.32	0.95	0.97	0.56	0.24
Control Delay	52.1	32.2	12.3	57.9	28.2	64.4	48.6	58.7	12.9	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.1	32.2	12.3	57.9	28.2	64.4	48.6	58.7	12.9	0.9
Queue Length 50th (ft)	71	20	0	57	267	17	435	379	276	0
Queue Length 95th (ft)	113	46	20	110	372	49	#623	#590	391	22
Internal Link Dist (ft)		913		475			1285		987	
Turn Bay Length (ft)	150		150		150	150		150		150
Base Capacity (vph)	491	487	430	257	1220	79	1798	1086	3355	1356
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.07	0.05	0.32	0.73	0.32	0.95	0.97	0.56	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	132	170	216	129	29
v/c Ratio	0.30	0.37	0.22	0.11	0.03
Control Delay	7.8	9.1	5.6	5.1	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	9.1	5.6	5.1	2.9
Queue Length 50th (ft)	9	13	16	9	0
Queue Length 95th (ft)	31	41	46	28	7
Internal Link Dist (ft)	925	1278	2578	2526	
Turn Bay Length (ft)					
Base Capacity (vph)	695	721	1095	1280	1107
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.19	0.24	0.20	0.10	0.03

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	857	105	989	109	282	60
v/c Ratio	0.60	0.07	0.69	0.07	0.40	0.09
Control Delay	11.1	0.1	12.5	0.1	11.6	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	0.1	12.5	0.1	11.6	5.3
Queue Length 50th (ft)	67	0	82	0	46	3
Queue Length 95th (ft)	116	0	141	0	85	17
Internal Link Dist (ft)	8376		500			
Turn Bay Length (ft)		150				
Base Capacity (vph)	1510	1583	1510	1583	743	688
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.07	0.65	0.07	0.38	0.09

Intersection Summary

Lane Group	EBT	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	686	1202	1042	696	258
v/c Ratio	0.49	0.87	0.66	0.83	0.32
Control Delay	15.1	23.5	9.5	25.1	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	23.5	9.5	25.1	6.9
Queue Length 50th (ft)	93	260	195	208	29
Queue Length 95th (ft)	136	m286	m250	#402	68
Internal Link Dist (ft)	500	2498			
Turn Bay Length (ft)			150		
Base Capacity (vph)	1435	1435	1583	850	819
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.48	0.84	0.66	0.82	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	8	1085	64	466	1680	926	638	826	12	53	963	863
v/c Ratio	0.14	1.31	0.16	1.50	1.11	1.00	1.54	0.57	0.02	0.45	1.21	1.25
Control Delay	65.7	191.8	26.9	277.9	92.0	49.1	289.9	30.2	12.9	65.7	146.4	153.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.7	191.8	26.9	277.9	92.0	49.1	289.9	30.2	12.9	65.7	146.4	153.3
Queue Length 50th (ft)	6	~583	24	~502	~762	462	~696	267	1	40	~478	~831
Queue Length 95th (ft)	m16	#721	64	#708	#1001	#826	#923	335	14	83	#611	#1080
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	59	826	397	310	1516	925	413	1442	651	133	796	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	1.31	0.16	1.50	1.11	1.00	1.54	0.57	0.02	0.40	1.21	1.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	283	1746	235	226	2060	193	455	747	135	414	517	163
v/c Ratio	1.03	0.88	0.34	0.73	1.01	0.28	0.85	0.88	0.31	1.00	0.72	0.37
Control Delay	108.4	34.7	10.6	44.2	51.6	21.3	57.1	49.9	15.8	90.7	43.6	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	108.4	34.7	10.6	44.2	51.6	21.3	57.1	49.9	15.8	90.7	43.6	9.3
Queue Length 50th (ft)	~100	371	41	76	~504	59	146	242	27	~139	163	5
Queue Length 95th (ft)	#183	439	97	m69	m437	m46	#223	#344	78	#239	222	59
Internal Link Dist (ft)		3260			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	275	1985	700	309	2034	687	549	849	441	412	722	445
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.88	0.34	0.73	1.01	0.28	0.83	0.88	0.31	1.00	0.72	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	760	1483	326	604	1470	207	433	521	665	191	317	908
v/c Ratio	0.76	0.81	0.46	0.87	1.07	0.39	1.05	0.67	1.01	0.93	0.56	1.17
Control Delay	50.4	30.1	12.4	53.0	81.5	13.3	101.9	40.6	54.4	94.5	43.1	115.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.4	30.1	12.4	53.0	81.5	13.3	101.9	40.6	54.4	94.5	43.1	115.8
Queue Length 50th (ft)	266	197	43	191	~382	34	~156	161	~210	63	99	~696
Queue Length 95th (ft)	m302	m247	m81	#276	#477	96	#253	217	#454	#131	144	#937
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	996	1820	703	721	1373	527	412	779	659	206	566	777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.81	0.46	0.84	1.07	0.39	1.05	0.67	1.01	0.93	0.56	1.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	377	1389	233	33	1493	142	336	329	80	442	817	25
v/c Ratio	0.90	0.63	0.29	0.22	0.91	0.25	0.88	0.41	0.19	0.85	0.87	0.06
Control Delay	64.9	21.9	4.1	45.0	39.0	10.4	65.0	31.7	8.3	60.9	34.0	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.9	21.9	4.1	45.0	39.0	10.4	65.0	31.7	8.3	60.9	34.0	8.7
Queue Length 50th (ft)	110	233	4	9	295	20	98	84	0	122	200	0
Queue Length 95th (ft)	#191	284	48	24	#388	62	#174	125	36	#196	#313	m11
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	420	2215	813	153	1639	572	381	799	419	534	944	435
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.63	0.29	0.22	0.91	0.25	0.88	0.41	0.19	0.83	0.87	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	986	195	451	833	298	556	418	381
v/c Ratio	1.11	0.43	1.13	0.46	0.96	0.94	1.13	0.50
Control Delay	108.5	26.2	129.1	20.0	89.8	41.1	131.4	35.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	108.5	26.2	129.1	20.0	89.8	41.1	131.4	35.6
Queue Length 50th (ft)	~461	76	~406	211	236	156	~377	108
Queue Length 95th (ft)	#593	149	#611	264	#427	#400	#576	160
Internal Link Dist (ft)	14973			1158	1272			429
Turn Bay Length (ft)		100	575					
Base Capacity (vph)	885	452	398	1799	310	589	369	760
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.11	0.43	1.13	0.46	0.96	0.94	1.13	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	378	1290	1358	447	180	319	294	362	498
v/c Ratio	1.12	0.64	1.12	0.72	0.61	1.04	0.96	1.15	0.89
Control Delay	128.3	19.6	103.9	31.9	55.7	102.9	84.3	142.6	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	128.3	19.6	103.9	31.9	55.7	102.9	84.3	142.6	32.6
Queue Length 50th (ft)	~336	341	~638	220	136	~260	202	~169	103
Queue Length 95th (ft)	#529	415	#777	348	220	#463	#390	#268	#306
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	339	2005	1209	623	294	308	305	315	560
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.12	0.64	1.12	0.72	0.61	1.04	0.96	1.15	0.89

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2019 BASELINE PLUS PROJECT PHASES 1-5 TRAFFIC CONDITION

1: N. Parkway Dr. & Herndon Ave

Lane Group	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	132	13	107	359	148
v/c Ratio	0.24	0.02	0.17	0.32	0.24
Control Delay	7.9	6.3	2.7	6.7	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.9	6.3	2.7	6.7	2.6
Queue Length 50th (ft)	10	1	0	13	0
Queue Length 95th (ft)	33	6	14	31	15
Internal Link Dist (ft)	297	586		195	
Turn Bay Length (ft)					
Base Capacity (vph)	742	923	838	1651	838
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.18	0.01	0.13	0.22	0.18

Intersection Summary

Lane Group	NWL	NWR	NET	SWT
Lane Group Flow (vph)	38	1064	209	585
v/c Ratio	0.07	0.67	0.25	0.71
Control Delay	9.9	3.5	7.1	13.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.9	3.5	7.1	13.5
Queue Length 50th (ft)	4	0	18	65
Queue Length 95th (ft)	20	33	60	195
Internal Link Dist (ft)	499		416	193
Turn Bay Length (ft)				
Base Capacity (vph)	735	1779	1002	1002
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.05	0.60	0.21	0.58

Intersection Summary

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	639	261	158	45	282	36	1317	325	164	401	407
v/c Ratio	0.93	0.24	0.20	0.26	0.58	0.13	0.79	0.51	0.59	0.28	0.46
Control Delay	54.0	22.0	3.2	40.6	23.3	35.0	29.6	13.5	40.4	17.3	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	22.0	3.2	40.6	23.3	35.0	29.6	13.5	40.4	17.3	4.0
Queue Length 50th (ft)	162	54	0	11	39	8	223	55	75	68	0
Queue Length 95th (ft)	#262	80	31	27	73	22	#315	138	139	111	57
Internal Link Dist (ft)		665			800		120			1105	
Turn Bay Length (ft)	200		250	200		200		80	200		
Base Capacity (vph)	687	1239	776	172	760	274	1675	642	278	1439	885
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.21	0.20	0.26	0.37	0.13	0.79	0.51	0.59	0.28	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	290	253	410	110	672	207	364	118	178	197	142	279
v/c Ratio	0.99	0.20	0.39	0.45	0.64	0.42	0.42	0.17	0.26	0.51	0.33	0.44
Control Delay	85.0	21.7	2.2	37.4	28.1	6.7	24.4	16.8	4.1	34.4	25.2	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.0	21.7	2.2	37.4	28.1	6.7	24.4	16.8	4.1	34.4	25.2	14.9
Queue Length 50th (ft)	65	31	0	24	94	0	70	35	0	41	51	64
Queue Length 95th (ft)	#139	51	37	47	130	48	107	70	37	72	99	126
Internal Link Dist (ft)		770			2700			870			524	
Turn Bay Length (ft)	165		165	165		165	65			65		65
Base Capacity (vph)	294	1293	1059	245	1162	522	857	683	693	395	426	631
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.20	0.39	0.45	0.58	0.40	0.42	0.17	0.26	0.50	0.33	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	502	27	168	529	52	272	54	323
v/c Ratio	0.24	0.53	0.09	0.73	0.34	0.15	0.39	0.16	0.46
Control Delay	29.2	23.8	8.9	45.9	17.3	25.7	14.2	25.7	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	23.8	8.9	45.9	17.3	25.7	14.2	25.7	19.3
Queue Length 50th (ft)	9	61	0	59	58	9	56	9	96
Queue Length 95th (ft)	24	83	16	#142	79	23	123	23	#179
Internal Link Dist (ft)		2700			1876		1081		369
Turn Bay Length (ft)	350		250	250		140		100	
Base Capacity (vph)	229	1356	442	236	1726	344	702	346	707
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.37	0.06	0.71	0.31	0.15	0.39	0.16	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NER
Lane Group Flow (vph)	680	1300	646	1141
v/c Ratio	0.47	0.68	0.13	0.55
Control Delay	16.4	10.3	0.1	7.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.4	10.3	0.1	7.3
Queue Length 50th (ft)	63	105	0	59
Queue Length 95th (ft)	82	198	0	115
Internal Link Dist (ft)	870		578	
Turn Bay Length (ft)				
Base Capacity (vph)	1688	1954	5085	2117
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.40	0.67	0.13	0.54

Intersection Summary

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	7	1667	148	174	1814	123	105	361	132	155	26
v/c Ratio	0.03	0.89	0.22	0.66	0.74	0.15	0.50	0.64	0.63	0.31	0.06
Control Delay	29.2	26.8	3.8	42.9	17.2	5.3	38.1	19.5	44.6	22.0	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	26.8	3.8	42.9	17.2	5.3	38.1	19.5	44.6	22.0	8.8
Queue Length 50th (ft)	1	220	0	35	186	7	21	74	26	51	0
Queue Length 95th (ft)	7	#313	31	#74	#349	39	43	#171	#61	97	16
Internal Link Dist (ft)		578			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	211	1878	678	264	2457	808	211	560	211	505	447
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.89	0.22	0.66	0.74	0.15	0.50	0.64	0.63	0.31	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	317	1725	18	122	1557	160	177	260	199	349	363	362
v/c Ratio	0.87	0.83	0.03	0.67	0.92	0.18	0.64	0.32	0.43	0.85	0.38	0.69
Control Delay	58.1	25.1	8.6	54.2	34.5	2.4	45.4	25.5	13.0	53.0	23.9	23.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.1	25.1	8.6	54.2	34.5	2.4	45.4	25.5	13.0	53.0	23.9	23.4
Queue Length 50th (ft)	76	265	1	29	251	0	42	53	26	83	72	93
Queue Length 95th (ft)	#144	#332	13	#67	#346	26	#80	85	81	#152	110	187
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	366	2075	654	183	1695	881	275	802	459	412	944	521
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.83	0.03	0.67	0.92	0.18	0.64	0.32	0.43	0.85	0.38	0.69

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

11: Herndon Ave & N. Bylthe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBR
Lane Group Flow (vph)	18	2264	1	2	1828	54	1	54	11
v/c Ratio	0.08	0.73	0.00	0.01	0.62	0.06	0.00	0.35	0.02
Control Delay	39.9	15.1	7.0	39.5	14.4	5.3	29.0	48.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.9	15.1	7.0	39.5	14.4	5.3	29.0	48.4	0.1
Queue Length 50th (ft)	5	285	0	0	200	3	0	15	0
Queue Length 95th (ft)	15	460	2	4	334	22	2	34	0
Internal Link Dist (ft)		2270			2660		994		
Turn Bay Length (ft)	220		140	220		140		120	120
Base Capacity (vph)	227	3081	960	213	2954	935	1101	153	549
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.73	0.00	0.01	0.62	0.06	0.00	0.35	0.02

Intersection Summary

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	100	2171	274	374	1676	26	166	110	445	91	118	78
v/c Ratio	0.56	1.04	0.37	1.01	0.61	0.03	0.97	0.30	0.80	0.66	0.37	0.23
Control Delay	54.8	61.3	10.7	88.9	17.9	7.9	109.2	38.1	25.4	70.9	40.7	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.8	61.3	10.7	88.9	17.9	7.9	109.2	38.1	25.4	70.9	40.7	10.4
Queue Length 50th (ft)	61	~551	51	~242	272	3	55	62	87	29	67	0
Queue Length 95th (ft)	113	#647	112	#431	331	17	#122	114	#258	#67	122	40
Internal Link Dist (ft)		2660			4430			2164			665	
Turn Bay Length (ft)	290		150	310		100	105		75	80		80
Base Capacity (vph)	212	2085	736	372	2746	862	172	365	554	137	317	334
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	1.04	0.37	1.01	0.61	0.03	0.97	0.30	0.80	0.66	0.37	0.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	153	2340	408	220	1817	222	164	226	247	164	226	178
v/c Ratio	0.74	0.94	0.49	0.82	0.79	0.30	0.86	0.32	0.57	0.86	0.32	0.31
Control Delay	60.8	31.2	13.2	40.5	42.5	26.7	80.6	32.2	18.8	80.6	32.2	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.8	31.2	13.2	40.5	42.5	26.7	80.6	32.2	18.8	80.6	32.2	21.7
Queue Length 50th (ft)	85	441	105	61	414	114	48	58	47	48	58	69
Queue Length 95th (ft)	#174	#576	183	m69	465	m134	#105	92	124	#105	92	121
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		50	245		125	160		160
Base Capacity (vph)	216	2486	831	267	2288	752	191	708	437	191	708	584
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.94	0.49	0.82	0.79	0.30	0.86	0.32	0.57	0.86	0.32	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	65	2526	225	76	2127	203	97	192	296	234	245	50
v/c Ratio	0.42	1.03	0.26	0.50	0.86	0.24	0.51	0.29	0.79	1.08	0.17	0.11
Control Delay	36.5	53.3	11.9	40.4	38.1	17.0	51.0	32.7	40.3	125.0	26.0	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	53.3	11.9	40.4	38.1	17.0	51.0	32.7	40.3	125.0	26.0	8.5
Queue Length 50th (ft)	17	~610	70	23	452	52	28	50	111	~150	39	0
Queue Length 95th (ft)	m20	m#688	m77	m25	m447	m59	53	81	#241	#294	61	27
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	153	2463	851	153	2463	834	191	668	375	216	1402	473
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	1.03	0.26	0.50	0.86	0.24	0.51	0.29	0.79	1.08	0.17	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	688	2243	124	230	1576	358	163	1250	82	152	1243	634
v/c Ratio	1.00	1.02	0.17	1.00	1.03	0.65	0.85	0.88	0.16	0.99	0.92	0.78
Control Delay	47.5	47.6	15.1	104.9	64.1	25.2	79.7	40.1	6.9	117.0	44.0	26.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	47.6	15.1	104.9	64.1	25.2	79.7	40.1	6.9	117.0	44.0	26.3
Queue Length 50th (ft)	~215	~449	29	~69	~356	122	48	248	0	45	251	278
Queue Length 95th (ft)	m#216	m#434	m29	#144	#449	221	#105	#328	33	#108	#337	431
Internal Link Dist (ft)		5199			5182			5342			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	687	2204	738	229	1526	551	191	1413	499	153	1356	811
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	1.02	0.17	1.00	1.03	0.65	0.85	0.88	0.16	0.99	0.92	0.78

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	229	1839	164	168	1910	439	23	410	58	209	777	286
v/c Ratio	0.83	0.87	0.22	0.73	0.94	0.56	0.13	0.34	0.14	0.91	0.48	0.45
Control Delay	60.8	26.3	4.3	54.9	32.6	10.7	35.5	24.5	7.9	78.6	22.7	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.8	26.3	4.3	54.9	32.6	10.7	35.5	24.5	7.9	78.6	22.7	9.7
Queue Length 50th (ft)	55	278	5	40	303	61	5	57	0	51	97	25
Queue Length 95th (ft)	#113	344	38	#86	#415	146	16	84	27	#113	155	96
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	275	2102	741	229	2034	778	183	1220	424	229	1614	642
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.87	0.22	0.73	0.94	0.56	0.13	0.34	0.14	0.91	0.48	0.45

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBL	NBR
Lane Group Flow (vph)	510	98	165	205
v/c Ratio	0.62	0.13	0.18	0.36
Control Delay	9.7	2.0	9.3	4.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.7	2.0	9.3	4.0
Queue Length 50th (ft)	43	0	9	0
Queue Length 95th (ft)	114	12	23	25
Internal Link Dist (ft)	586		2735	
Turn Bay Length (ft)				
Base Capacity (vph)	949	855	1507	810
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.54	0.11	0.11	0.25

Intersection Summary

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	41	217	2	323	378	74	54	147	5	33	387
v/c Ratio	0.27	0.20	0.00	0.77	0.19	0.08	0.22	0.34	0.04	0.12	0.68
Control Delay	31.9	16.8	13.5	37.1	9.3	4.2	29.1	8.3	29.6	21.2	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	16.8	13.5	37.1	9.3	4.2	29.1	8.3	29.6	21.2	9.5
Queue Length 50th (ft)	13	28	0	100	25	0	8	6	2	10	0
Queue Length 95th (ft)	43	62	5	#265	84	22	26	47	11	29	60
Internal Link Dist (ft)		700			578			214		213	
Turn Bay Length (ft)	150		150	150		150	150		150		150
Base Capacity (vph)	150	1071	481	431	1969	913	242	543	119	489	700
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.20	0.00	0.75	0.19	0.08	0.22	0.27	0.04	0.07	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Group Flow (vph)	172	330	170	970	1048	252
v/c Ratio	0.44	0.56	0.76	0.31	0.48	0.31
Control Delay	18.1	6.9	44.7	5.3	12.0	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	6.9	44.7	5.3	12.0	3.4
Queue Length 50th (ft)	37	5	41	34	72	0
Queue Length 95th (ft)	76	50	#133	74	128	38
Internal Link Dist (ft)	405			1398	1849	
Turn Bay Length (ft)			150			
Base Capacity (vph)	549	703	225	3081	2177	822
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.47	0.76	0.31	0.48	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	66	283	627	510	330	120	867	1158	1058	196	1185	251
v/c Ratio	0.47	0.48	1.00	1.11	0.34	0.23	0.92	0.44	1.13	1.14	0.80	0.43
Control Delay	67.4	48.4	52.8	124.3	36.8	7.2	57.9	18.8	94.2	161.5	44.2	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.4	48.4	52.8	124.3	36.8	7.2	57.9	18.8	94.2	161.5	44.2	14.3
Queue Length 50th (ft)	26	105	~184	~233	110	0	332	198	~853	~91	314	48
Queue Length 95th (ft)	50	151	#438	#343	154	47	#442	235	#1112	#169	372	124
Internal Link Dist (ft)		436			70			1507			1398	
Turn Bay Length (ft)	150		150	150		150	15		15	150		150
Base Capacity (vph)	141	590	625	458	967	520	964	2627	938	172	1487	583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.48	1.00	1.11	0.34	0.23	0.90	0.44	1.13	1.14	0.80	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	150	688	697	325	482	18	220	35	91	121	174	265
v/c Ratio	0.61	0.74	0.92	0.87	0.37	0.03	0.74	0.08	0.21	0.57	0.61	0.57
Control Delay	45.2	34.0	29.4	57.3	23.0	10.6	49.1	27.9	7.9	47.0	42.9	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	34.0	29.4	57.3	23.0	10.6	49.1	27.9	7.9	47.0	42.9	9.6
Queue Length 50th (ft)	77	178	127	172	105	0	112	15	0	62	89	0
Queue Length 95th (ft)	139	255	#381	#341	165	16	#215	40	37	121	154	64
Internal Link Dist (ft)		110			220			259			485	
Turn Bay Length (ft)	150		150	150		150				150		150
Base Capacity (vph)	310	1000	784	398	1296	591	347	483	478	253	378	532
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.69	0.89	0.82	0.37	0.03	0.63	0.07	0.19	0.48	0.46	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	52	348	21	323	110	172	137	112	30	191
v/c Ratio	0.15	0.52	0.06	0.49	0.17	0.27	0.16	0.19	0.03	0.23
Control Delay	7.7	8.6	6.9	9.9	2.8	9.1	7.2	8.7	7.3	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.7	8.6	6.9	9.9	2.8	9.1	7.2	8.7	7.3	2.6
Queue Length 50th (ft)	4	23	2	28	0	16	10	10	2	0
Queue Length 95th (ft)	21	82	11	90	18	56	40	39	14	25
Internal Link Dist (ft)		2293		4207			2050		2531	
Turn Bay Length (ft)										
Base Capacity (vph)	454	869	429	872	800	775	1037	702	1050	975
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.40	0.05	0.37	0.14	0.22	0.13	0.16	0.03	0.20

Intersection Summary

Lane Group	NBL	NBT	NBR	SBL	SBT	SEL	SET	NWL	NWT
Lane Group Flow (vph)	310	2783	516	193	2420	112	214	226	300
v/c Ratio	0.95	1.07	0.53	1.08	0.89	0.71	0.68	1.07	1.05
Control Delay	87.6	68.6	8.2	141.3	36.3	76.9	21.4	130.7	100.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.6	68.6	8.2	141.3	36.3	76.9	21.4	130.7	100.7
Queue Length 50th (ft)	240	~880	75	~168	494	89	16	~205	~189
Queue Length 95th (ft)	#419	#968	169	#318	548	#172	101	#373	#378
Internal Link Dist (ft)		1313			1507		858		751
Turn Bay Length (ft)	380		250	320		310		300	
Base Capacity (vph)	327	2604	977	178	2727	168	316	212	285
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	1.07	0.53	1.08	0.89	0.67	0.68	1.07	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBT	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	2347	2326	110	257	1128
v/c Ratio	0.97	0.76	0.07	0.19	1.01
Control Delay	30.1	16.0	0.1	13.1	51.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	16.0	0.1	13.1	51.7
Queue Length 50th (ft)	310	206	0	32	~251
Queue Length 95th (ft)	#445	251	0	54	#402
Internal Link Dist (ft)	222	1313			
Turn Bay Length (ft)			380		
Base Capacity (vph)	2425	3056	1583	1373	1116
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.97	0.76	0.07	0.19	1.01

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBT	NBR	SBT	SEL	SER
Lane Group Flow (vph)	2636	425	1561	38	123
v/c Ratio	0.68	0.27	0.40	0.15	0.49
Control Delay	6.3	0.4	3.9	19.7	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	0.4	3.9	19.7	21.7
Queue Length 50th (ft)	149	0	61	12	29
Queue Length 95th (ft)	265	0	109	30	64
Internal Link Dist (ft)	987		279		
Turn Bay Length (ft)		400			
Base Capacity (vph)	3863	1583	3863	389	373
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.68	0.27	0.40	0.10	0.33

Intersection Summary

28: W. Bullard Ave. & N. Carnegie Ave.

Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Group Flow (vph)	466	221	587	779	321	525
v/c Ratio	0.70	0.31	0.93	0.55	0.60	0.76
Control Delay	33.7	4.7	51.3	6.8	40.1	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	4.7	51.3	6.8	40.1	11.3
Queue Length 50th (ft)	242	0	301	161	87	0
Queue Length 95th (ft)	#397	49	#503	250	127	97
Internal Link Dist (ft)	1488			945	941	
Turn Bay Length (ft)						
Base Capacity (vph)	663	705	672	1408	610	713
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.31	0.87	0.55	0.53	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SET	NWT	NWR	NET	SWL	SWT
Lane Group Flow (vph)	1311	476	318	69	365	429
v/c Ratio	1.05dl	0.47	0.29	0.40	0.95	0.58
Control Delay	32.2	5.3	0.6	31.0	67.1	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.2	5.3	0.6	31.0	67.1	6.6
Queue Length 50th (ft)	282	43	0	27	180	6
Queue Length 95th (ft)	#474	52	0	67	#348	76
Internal Link Dist (ft)	2208	2920		303		941
Turn Bay Length (ft)			65			
Base Capacity (vph)	1373	1028	1098	174	383	742
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.46	0.29	0.40	0.95	0.58

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

30: W. Bullard Ave. & N. Dante Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	18	985	39	27	1168	45	180	12	20	114	17	51
v/c Ratio	0.10	0.57	0.05	0.14	0.68	0.06	0.47	0.01	0.04	0.29	0.03	0.11
Control Delay	7.7	8.5	2.8	8.2	9.8	2.7	15.8	9.9	5.7	13.0	10.2	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.7	8.5	2.8	8.2	9.8	2.7	15.8	9.9	5.7	13.0	10.2	6.2
Queue Length 50th (ft)	2	59	0	2	76	0	31	1	0	19	3	2
Queue Length 95th (ft)	11	131	10	15	167	11	72	4	9	48	12	18
Internal Link Dist (ft)		1442			3543			564			4207	
Turn Bay Length (ft)												
Base Capacity (vph)	191	1911	873	213	1911	875	542	1380	630	544	727	640
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.52	0.04	0.13	0.61	0.05	0.33	0.01	0.03	0.21	0.02	0.08

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	223	974	73	142	843	65	712	51	48	841	149
v/c Ratio	0.65	0.77	0.12	0.75	0.76	0.59	0.63	0.09	0.44	0.81	0.26
Control Delay	42.1	26.7	5.6	58.4	24.8	56.5	22.6	6.5	46.5	28.9	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.1	26.7	5.6	58.4	24.8	56.5	22.6	6.5	46.5	28.9	5.2
Queue Length 50th (ft)	49	206	0	61	163	28	140	0	21	173	0
Queue Length 95th (ft)	#100	#314	26	#153	226	#86	196	22	#61	#240	37
Internal Link Dist (ft)		2564			1707		4355			5342	
Turn Bay Length (ft)											
Base Capacity (vph)	341	1272	616	191	1239	111	1231	584	109	1150	615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.77	0.12	0.74	0.68	0.59	0.58	0.09	0.44	0.73	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	270	35	9	17	1029	10	1763	472	1023	189
v/c Ratio	0.50	0.10	0.03	0.11	1.60	0.10	0.77	0.76	0.30	0.13
Control Delay	29.5	21.7	11.6	34.6	301.0	37.6	19.9	37.4	6.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	21.7	11.6	34.6	301.0	37.6	19.9	37.4	6.5	0.6
Queue Length 50th (ft)	50	12	0	6	~343	4	194	90	40	0
Queue Length 95th (ft)	97	32	10	27	#484	21	#418	#213	155	15
Internal Link Dist (ft)		920		425			1285		987	
Turn Bay Length (ft)	150		150		150	150		150		150
Base Capacity (vph)	763	636	546	352	643	97	2297	621	3423	1502
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.06	0.02	0.05	1.60	0.10	0.77	0.76	0.30	0.13

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

33: W. Barstow Ave. & N. Grantland Ave.

Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	324	113	56	4	17	4
v/c Ratio	0.49	0.17	0.10	0.01	0.03	0.01
Control Delay	7.7	5.2	7.9	5.5	7.5	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.7	5.2	7.9	5.5	7.5	5.5
Queue Length 50th (ft)	21	7	4	0	1	0
Queue Length 95th (ft)	50	19	18	3	8	3
Internal Link Dist (ft)	925	1278	2578		2526	
Turn Bay Length (ft)						
Base Capacity (vph)	897	909	872	780	909	780
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.12	0.06	0.01	0.02	0.01

Intersection Summary

34: Shaw Ave & SR 99 SB Ramps

Lane Group	EBT	EBR	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	697	53	790	4	247	41
v/c Ratio	0.53	0.03	0.61	0.00	0.32	0.06
Control Delay	11.1	0.0	13.2	0.0	10.2	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	0.0	13.2	0.0	10.2	4.0
Queue Length 50th (ft)	60	0	111	0	34	0
Queue Length 95th (ft)	82	0	m92	m0	81	13
Internal Link Dist (ft)	8376		500			
Turn Bay Length (ft)		150				
Base Capacity (vph)	1465	1583	1465	1583	788	728
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.03	0.54	0.00	0.31	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

35: Shaw Ave & SR 99 NB Ramps

Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	627	29	1004	525	636	136
v/c Ratio	0.44	0.02	0.71	0.33	0.89	0.19
Control Delay	8.1	0.0	19.8	0.6	31.4	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.1	0.0	19.8	0.6	31.4	2.9
Queue Length 50th (ft)	31	0	217	0	124	0
Queue Length 95th (ft)	85	m0	281	0	#287	21
Internal Link Dist (ft)	500		2498			
Turn Bay Length (ft)				150		
Base Capacity (vph)	1439	1583	1439	1583	723	727
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.02	0.70	0.33	0.88	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	12	659	38	387	913	396	634	460	3	18	435	566
v/c Ratio	0.13	0.87	0.10	0.72	0.64	0.45	0.90	0.30	0.00	0.19	0.55	0.82
Control Delay	39.2	36.4	9.2	40.6	22.6	4.0	39.5	16.4	11.3	41.2	30.4	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	36.4	9.2	40.6	22.6	4.0	39.5	16.4	11.3	41.2	30.4	31.2
Queue Length 50th (ft)	6	137	0	95	179	0	153	71	0	9	101	231
Queue Length 95th (ft)	m16	#257	m3	141	287	59	m164	m88	m0	30	147	#414
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	89	761	370	558	1417	871	702	1555	698	96	796	701
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.87	0.10	0.69	0.64	0.45	0.90	0.30	0.00	0.19	0.55	0.81

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

37: Shaw Ave & Brawley Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	100	1390	145	121	1367	73	212	283	100	22	824	141
v/c Ratio	0.44	0.88	0.25	0.53	0.87	0.14	0.69	0.19	0.14	0.09	0.79	0.25
Control Delay	33.2	28.8	4.7	36.0	27.7	5.6	41.0	12.5	4.3	27.2	27.0	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.2	28.8	4.7	36.0	27.7	5.6	41.0	12.5	4.3	27.2	27.0	4.9
Queue Length 50th (ft)	18	175	0	22	171	0	39	31	0	4	145	0
Queue Length 95th (ft)	38	#261	33	#46	#254	24	#86	67	28	13	#233	34
Internal Link Dist (ft)		3260			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	229	1573	590	229	1573	539	308	1501	729	246	1042	566
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.88	0.25	0.53	0.87	0.14	0.69	0.19	0.14	0.09	0.79	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	142	1900	112	153	1282	42	208	517	201	243	468	614
v/c Ratio	0.24	0.90	0.16	0.67	0.83	0.08	0.76	0.64	0.43	0.88	0.58	0.85
Control Delay	26.8	28.3	5.8	50.0	30.8	7.6	53.0	30.6	11.2	68.0	29.3	30.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	28.3	5.8	50.0	30.8	7.6	53.0	30.6	11.2	68.0	29.3	30.4
Queue Length 50th (ft)	28	293	8	36	209	0	50	115	20	59	102	226
Queue Length 95th (ft)	52	#379	36	#76	#292	22	#100	165	74	#123	150	#417
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	687	2102	704	229	1551	512	275	802	472	275	802	765
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.90	0.16	0.67	0.83	0.08	0.76	0.64	0.43	0.88	0.58	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	170	1747	148	110	1513	60	200	592	225	173	560	29
v/c Ratio	0.64	0.88	0.21	0.52	0.85	0.10	0.72	0.68	0.45	0.62	0.64	0.07
Control Delay	42.0	26.2	3.9	38.9	25.4	5.6	46.5	26.8	11.4	40.6	25.9	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	26.2	3.9	38.9	25.4	5.6	46.5	26.8	11.4	40.6	25.9	8.5
Queue Length 50th (ft)	34	236	1	22	197	1	41	111	25	35	104	0
Queue Length 95th (ft)	#72	#339	32	#45	253	22	#89	163	78	#73	153	18
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	264	1983	707	211	1799	596	278	871	500	278	871	412
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.88	0.21	0.52	0.84	0.10	0.72	0.68	0.45	0.62	0.64	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1509	34	130	689	257	239	220	512
v/c Ratio	1.02	0.05	1.02	0.36	0.74	0.69	0.33	0.75
Control Delay	53.5	11.6	128.4	12.3	25.2	21.5	31.7	38.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.5	11.6	128.4	12.3	25.2	21.5	31.7	38.8
Queue Length 50th (ft)	~414	6	~71	100	40	30	51	125
Queue Length 95th (ft)	#650	26	#197	163	122	106	91	#215
Internal Link Dist (ft)	14973			1158	1272			429
Turn Bay Length (ft)		100	575					
Base Capacity (vph)	1486	673	127	1910	434	429	659	683
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.05	1.02	0.36	0.59	0.56	0.33	0.75

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	390	1216	667	278	226	261	268	215	255
v/c Ratio	0.85	0.86	0.89	0.55	0.59	0.65	0.61	0.48	0.47
Control Delay	51.0	28.6	44.9	12.1	33.2	27.2	20.7	29.9	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	28.6	44.9	12.1	33.2	27.2	20.7	29.9	7.0
Queue Length 50th (ft)	92	264	159	25	98	85	61	45	0
Queue Length 95th (ft)	#165	#366	#253	92	172	171	143	77	56
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	459	1416	755	505	382	403	437	451	539
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.86	0.88	0.55	0.59	0.65	0.61	0.48	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: N. Parkway Dr. & Herndon Ave

Lane Group	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	127	15	271	1658	160
v/c Ratio	0.43	0.04	0.51	0.78	0.15
Control Delay	23.4	17.5	6.8	10.0	1.3
Queue Delay	0.1	0.0	0.0	0.0	0.0
Total Delay	23.5	17.5	6.8	10.0	1.3
Queue Length 50th (ft)	35	4	0	134	0
Queue Length 95th (ft)	78	16	49	270	16
Internal Link Dist (ft)	297	586		195	
Turn Bay Length (ft)					
Base Capacity (vph)	452	566	670	2309	1117
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	28	0	0	30	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.30	0.03	0.40	0.73	0.14

Intersection Summary

Lane Group	NWL	NWR	NET	SWT
Lane Group Flow (vph)	49	1351	359	1849
v/c Ratio	0.16	1.00	0.25	1.31
Control Delay	43.7	35.8	4.9	163.3
Queue Delay	0.0	0.0	0.0	1.7
Total Delay	43.7	35.8	4.9	165.0
Queue Length 50th (ft)	33	167	71	~1842
Queue Length 95th (ft)	69	#360	103	#2104
Internal Link Dist (ft)	499		416	193
Turn Bay Length (ft)				
Base Capacity (vph)	310	1352	1413	1413
Starvation Cap Reductn	0	0	0	4
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.16	1.00	0.25	1.31

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	472	261	118	464	752	72	1227	376	424	1255	420
v/c Ratio	0.95	0.44	0.34	0.94	0.90	0.44	0.93	0.68	0.95	0.73	0.43
Control Delay	69.7	36.0	12.0	66.7	33.3	50.6	46.5	21.9	67.6	22.6	3.0
Queue Delay	0.0	0.0	1.0	200.5	0.0	0.0	0.0	0.0	0.0	48.4	0.0
Total Delay	69.7	36.0	13.0	267.3	33.3	50.6	46.5	21.9	67.6	71.0	3.0
Queue Length 50th (ft)	139	70	8	136	114	21	251	93	240	305	0
Queue Length 95th (ft)	#234	107	54	#228	#215	43	#342	197	#428	391	50
Internal Link Dist (ft)		665			800		120			1105	
Turn Bay Length (ft)	200		250	200		200		80	200		
Base Capacity (vph)	496	629	365	496	869	164	1318	550	446	1713	983
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	103	178	0	0	0	0	0	571	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.41	0.45	1.46	0.87	0.44	0.93	0.68	0.95	1.10	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	365	527	265	54	365	149	579	284	134	185	385	599
v/c Ratio	0.69	0.37	0.26	0.31	0.52	0.43	0.63	0.39	0.19	0.47	0.87	0.81
Control Delay	39.2	23.9	4.4	41.7	34.2	9.6	30.3	20.8	4.5	37.0	51.6	27.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	23.9	4.4	41.7	34.2	9.6	30.3	20.8	4.5	37.0	51.6	27.9
Queue Length 50th (ft)	89	80	25	13	63	0	131	101	0	44	185	222
Queue Length 95th (ft)	132	105	60	31	87	48	196	179	36	76	#339	#412
Internal Link Dist (ft)		770			2700			870			524	
Turn Bay Length (ft)	165		165	165		165	65			65		65
Base Capacity (vph)	558	1612	1014	172	1017	436	923	729	701	403	442	748
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.33	0.26	0.31	0.36	0.34	0.63	0.39	0.19	0.46	0.87	0.80

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	657	118	148	543	8	37	434	13	291
v/c Ratio	0.31	0.58	0.27	0.65	0.39	0.02	0.13	0.46	0.05	0.32
Control Delay	33.8	22.7	5.9	42.6	18.4	10.3	27.1	13.8	26.4	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	22.7	5.9	42.6	18.4	10.3	27.1	13.8	26.4	13.6
Queue Length 50th (ft)	13	78	0	27	50	0	6	88	2	55
Queue Length 95th (ft)	37	103	32	#63	85	9	19	#228	9	142
Internal Link Dist (ft)		2700			1876			1081		369
Turn Bay Length (ft)	350		250	250		125	140		100	
Base Capacity (vph)	118	1356	509	229	1515	477	287	936	285	897
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.48	0.23	0.65	0.36	0.02	0.13	0.46	0.05	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NER
Lane Group Flow (vph)	1377	1468	666	1152
v/c Ratio	0.81	0.85	0.13	0.63
Control Delay	19.8	17.5	0.1	11.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	19.8	17.5	0.1	11.0
Queue Length 50th (ft)	129	174	0	96
Queue Length 95th (ft)	176	#311	0	141
Internal Link Dist (ft)	870		578	
Turn Bay Length (ft)				
Base Capacity (vph)	1729	1731	5085	1824
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.80	0.85	0.13	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	9	2249	272	300	1883	143	216	753	196	587	36
v/c Ratio	0.08	1.18	0.39	1.17	0.79	0.18	0.94	1.14	1.14	0.90	0.06
Control Delay	57.8	121.2	11.5	157.2	30.2	12.7	102.4	113.5	161.5	55.6	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.8	121.2	11.5	157.2	30.2	12.7	102.4	113.5	161.5	55.6	14.8
Queue Length 50th (ft)	3	~764	50	~142	426	37	87	~668	~91	429	8
Queue Length 95th (ft)	12	#858	120	#233	557	87	#164	#909	#169	#643	31
Internal Link Dist (ft)		578			3032			2531		525	
Turn Bay Length (ft)	225			250		100	140		200		160
Base Capacity (vph)	114	1907	702	257	2390	773	229	663	172	652	568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	1.18	0.39	1.17	0.79	0.18	0.94	1.14	1.14	0.90	0.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	528	2047	139	146	1805	257	97	322	123	187	380	427
v/c Ratio	0.88	0.83	0.17	0.64	0.95	0.31	0.58	0.47	0.30	0.69	0.44	0.72
Control Delay	53.5	23.8	5.5	40.4	55.0	21.3	57.1	35.1	8.4	54.7	31.5	20.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.5	23.8	5.5	40.4	55.0	21.3	57.1	35.1	8.4	54.7	31.5	20.5
Queue Length 50th (ft)	152	348	13	42	401	88	28	86	0	54	99	82
Queue Length 95th (ft)	#237	415	44	m54	#485	m195	#63	128	45	#100	144	#227
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	610	2486	821	229	1921	827	167	681	404	272	867	589
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.82	0.17	0.64	0.94	0.31	0.58	0.47	0.30	0.69	0.44	0.72

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

11: Herndon Ave & N. Bylthe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	2	2351	1	4	2210	65	2	4	65	1	17
v/c Ratio	0.01	0.77	0.00	0.02	0.72	0.07	0.01	0.01	0.34	0.00	0.06
Control Delay	27.5	28.7	11.0	39.8	15.3	5.2	39.5	0.0	46.0	30.0	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.5	28.7	11.0	39.8	15.3	5.2	39.5	0.0	46.0	30.0	14.3
Queue Length 50th (ft)	0	531	0	1	273	5	0	0	18	1	0
Queue Length 95th (ft)	m0	#596	m0	6	461	28	4	0	39	5	18
Internal Link Dist (ft)		2270			2660			994		634	
Turn Bay Length (ft)	220		140	220		140	235		120		120
Base Capacity (vph)	213	3052	950	215	3054	966	610	985	191	339	302
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.77	0.00	0.02	0.72	0.07	0.00	0.00	0.34	0.00	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	120	2102	409	330	2120	80	399	161	318	35	147	112
v/c Ratio	0.77	1.03	0.54	1.02	0.84	0.10	0.98	0.33	0.50	0.28	0.51	0.33
Control Delay	79.6	62.2	15.1	101.8	28.3	9.8	89.7	35.9	8.6	57.4	49.7	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.6	62.2	15.1	101.8	28.3	9.8	89.7	35.9	8.6	57.4	49.7	10.7
Queue Length 50th (ft)	84	~585	105	~249	463	17	146	95	14	12	96	0
Queue Length 95th (ft)	#178	#681	200	#427	533	43	#246	158	91	29	163	50
Internal Link Dist (ft)		2660			4430			2164			665	
Turn Bay Length (ft)	290		150	310		100	105		75	80		80
Base Capacity (vph)	161	2034	755	322	2510	798	406	494	636	125	288	339
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	1.03	0.54	1.02	0.84	0.10	0.98	0.33	0.50	0.28	0.51	0.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	399	2047	205	287	2072	363	239	305	277	221	301	573
v/c Ratio	1.03	0.80	0.25	0.77	1.04	0.54	1.00	0.54	0.67	0.92	0.53	0.86
Control Delay	92.2	23.9	10.8	58.3	63.9	21.3	80.2	27.7	20.8	88.3	42.4	41.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.2	23.9	10.8	58.3	63.9	21.3	80.2	27.7	20.8	88.3	42.4	41.2
Queue Length 50th (ft)	~273	383	49	93	~527	133	72	101	118	73	93	323
Queue Length 95th (ft)	#455	450	93	#151	#624	224	m#111	m120	m150	#144	137	#528
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		50	245		125	160		160
Base Capacity (vph)	389	2552	824	378	1983	669	240	566	415	240	566	666
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.80	0.25	0.76	1.04	0.54	1.00	0.54	0.67	0.92	0.53	0.86

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	99	2174	108	259	2592	203	90	336	110	174	324	161
v/c Ratio	0.65	0.89	0.13	0.76	0.93	0.22	0.47	0.50	0.29	0.91	0.44	0.40
Control Delay	62.7	27.6	4.2	54.6	26.4	5.3	49.7	35.7	9.3	89.8	34.0	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.7	27.6	4.2	54.6	26.4	5.3	49.7	35.7	9.3	89.8	34.0	17.6
Queue Length 50th (ft)	29	396	4	75	484	22	26	91	2	52	87	32
Queue Length 95th (ft)	#65	471	30	#130	#636	56	50	134	45	#113	129	90
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	153	2430	805	343	2802	927	191	668	385	191	739	406
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.89	0.13	0.76	0.93	0.22	0.47	0.50	0.29	0.91	0.44	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1010	1509	112	90	2058	174	271	1245	41	277	1422	886
v/c Ratio	1.31	0.60	0.13	0.46	1.25	0.31	1.18	1.01	0.10	1.08	1.12	1.10
Control Delay	186.0	23.2	4.1	62.7	151.1	19.5	165.9	74.2	11.1	130.3	106.2	92.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	186.0	23.2	4.1	62.7	151.1	19.5	165.9	74.2	11.1	130.3	106.2	92.4
Queue Length 50th (ft)	~518	300	3	35	~727	58	~129	~363	0	~123	~464	~781
Queue Length 95th (ft)	#647	349	33	63	#822	118	#218	#467	29	#211	#561	#1032
Internal Link Dist (ft)		5199			5182			5342			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	772	2507	833	200	1653	562	229	1229	414	257	1271	805
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.31	0.60	0.13	0.45	1.25	0.31	1.18	1.01	0.10	1.08	1.12	1.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	176	1628	391	347	1717	362	145	911	161	229	995	387
v/c Ratio	0.64	0.92	0.58	0.84	0.87	0.49	0.63	0.75	0.32	0.83	0.77	0.72
Control Delay	45.2	34.1	13.6	52.5	27.7	9.9	47.8	30.9	6.3	60.8	30.8	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	34.1	13.6	52.5	27.7	9.9	47.8	30.9	6.3	60.8	30.8	21.8
Queue Length 50th (ft)	41	261	67	82	264	49	34	143	0	55	157	82
Queue Length 95th (ft)	#79	#360	152	#151	#328	119	#71	188	44	#113	204	#190
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	275	1763	676	412	1966	737	229	1220	502	275	1288	540
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.92	0.58	0.84	0.87	0.49	0.63	0.75	0.32	0.83	0.77	0.72

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBL	NBR
Lane Group Flow (vph)	1148	588	313	173
v/c Ratio	0.95	0.48	0.71	0.36
Control Delay	29.9	1.8	39.0	12.5
Queue Delay	4.8	0.0	0.0	0.0
Total Delay	34.7	1.8	39.0	12.5
Queue Length 50th (ft)	416	0	148	23
Queue Length 95th (ft)	#783	29	#272	75
Internal Link Dist (ft)	586		2735	
Turn Bay Length (ft)				
Base Capacity (vph)	1258	1260	443	482
Starvation Cap Reductn	74	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.97	0.47	0.71	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	492	620	11	88	665	176	496	486	1	193	77
v/c Ratio	0.87	0.38	0.02	0.57	0.90	0.40	0.80	0.76	0.01	0.65	0.24
Control Delay	56.9	24.2	11.6	66.8	62.8	15.4	57.5	37.7	55.0	58.1	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	24.2	11.6	66.8	62.8	15.4	57.5	37.7	55.0	58.1	11.3
Queue Length 50th (ft)	354	170	0	66	269	28	191	280	1	142	0
Queue Length 95th (ft)	#612	244	13	121	#384	94	244	437	7	216	42
Internal Link Dist (ft)		700			578			177		213	
Turn Bay Length (ft)	150		150	150		150	150		150		150
Base Capacity (vph)	564	1621	731	180	740	435	715	643	236	342	353
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.38	0.02	0.49	0.90	0.40	0.69	0.76	0.00	0.56	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Group Flow (vph)	83	392	480	1070	1335	134
v/c Ratio	0.33	0.70	0.86	0.29	0.75	0.21
Control Delay	27.3	10.3	38.4	3.5	22.8	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	10.3	38.4	3.5	22.8	4.7
Queue Length 50th (ft)	29	0	161	35	162	0
Queue Length 95th (ft)	63	64	#366	81	#277	35
Internal Link Dist (ft)	405			1398	1849	
Turn Bay Length (ft)			150			
Base Capacity (vph)	405	664	580	3711	1779	641
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.59	0.83	0.29	0.75	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	240	416	830	1105	366	228	761	1624	873	85	1701	179
v/c Ratio	0.66	0.47	1.49	1.55	0.29	0.37	1.57	0.85	1.31	0.75	1.25	0.37
Control Delay	60.7	40.3	255.7	286.0	29.1	19.1	299.3	39.8	181.1	93.2	158.4	21.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	40.3	255.7	286.0	29.1	19.1	299.3	39.8	181.1	93.2	158.4	21.5
Queue Length 50th (ft)	92	144	~762	~621	108	76	~430	418	~819	34	~604	59
Queue Length 95th (ft)	136	195	#1010	#754	150	146	#553	484	#1068	#77	#701	125
Internal Link Dist (ft)		436			70			1507			1398	
Turn Bay Length (ft)	150		150	150		150	15		15	150		150
Base Capacity (vph)	396	885	557	715	1248	618	486	1907	664	114	1356	482
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.47	1.49	1.55	0.29	0.37	1.57	0.85	1.31	0.75	1.25	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	404	903	100	48	1039	28	250	146	63	93	65	359
v/c Ratio	0.95	0.50	0.12	0.33	0.93	0.05	0.84	0.41	0.18	0.53	0.34	0.74
Control Delay	70.3	17.9	5.9	46.9	46.6	14.3	63.4	37.7	10.0	51.5	42.9	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.3	17.9	5.9	46.9	46.6	14.3	63.4	37.7	10.0	51.5	42.9	14.3
Queue Length 50th (ft)	231	187	5	27	303	4	141	78	0	51	36	0
Queue Length 95th (ft)	#463	305	39	64	#496	25	#298	137	33	108	75	81
Internal Link Dist (ft)		110			220			259			485	
Turn Bay Length (ft)	150		150	150		150				150		150
Base Capacity (vph)	424	1824	855	272	1118	512	306	429	413	204	319	568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.50	0.12	0.18	0.93	0.05	0.82	0.34	0.15	0.46	0.20	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	155	732	7	365	129	173	125	179	128	163
v/c Ratio	0.32	0.78	0.03	0.38	0.15	0.51	0.25	0.52	0.25	0.30
Control Delay	8.2	14.4	5.7	7.4	1.8	20.7	14.2	21.1	15.2	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.2	14.4	5.7	7.4	1.8	20.7	14.2	21.1	15.2	4.9
Queue Length 50th (ft)	16	101	1	40	0	33	20	34	22	0
Queue Length 95th (ft)	52	256	5	100	17	96	62	99	67	34
Internal Link Dist (ft)		2293		4207			2050		2531	
Turn Bay Length (ft)										
Base Capacity (vph)	586	1138	268	1157	1032	458	675	459	679	680
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.64	0.03	0.32	0.13	0.38	0.19	0.39	0.19	0.24

Intersection Summary

Lane Group	NBL	NBT	NBR	SBL	SBT	SEL	SET	NWL	NWT
Lane Group Flow (vph)	607	3082	270	311	4230	424	885	367	526
v/c Ratio	1.79	1.23	0.32	1.62	1.63	1.89	1.48	2.18	1.18
Control Delay	397.3	137.7	8.5	336.1	313.8	447.6	245.9	578.3	122.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	397.3	137.7	8.5	336.1	313.8	447.6	245.9	578.3	122.3
Queue Length 50th (ft)	~705	~1081	47	~347	~1384	~529	~658	~480	~263
Queue Length 95th (ft)	#929	#1165	102	#527	#1433	#741	#923	#682	#493
Internal Link Dist (ft)		1313			1507		858		751
Turn Bay Length (ft)	380		250	320		310		300	
Base Capacity (vph)	339	2500	857	192	2591	224	596	168	444
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.79	1.23	0.32	1.62	1.63	1.89	1.48	2.18	1.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBT	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	2270	4442	204	297	1234
v/c Ratio	0.78	1.21	0.21	0.24	1.23
Control Delay	22.0	121.3	2.9	27.7	146.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.0	121.3	2.9	27.7	146.3
Queue Length 50th (ft)	469	~1218	7	82	~671
Queue Length 95th (ft)	532	#1263	40	117	#822
Internal Link Dist (ft)	222	1313			
Turn Bay Length (ft)			380		
Base Capacity (vph)	2924	3685	987	1230	1004
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.78	1.21	0.21	0.24	1.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBT	NBR	SBT	SEL	SER
Lane Group Flow (vph)	3009	120	2966	178	405
v/c Ratio	0.94	0.08	0.93	0.37	0.94
Control Delay	21.7	0.1	20.3	26.2	61.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	0.1	20.3	26.2	61.4
Queue Length 50th (ft)	450	0	434	71	196
Queue Length 95th (ft)	#589	0	#547	127	#369
Internal Link Dist (ft)	987		279		
Turn Bay Length (ft)		400			
Base Capacity (vph)	3193	1583	3193	487	436
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.94	0.08	0.93	0.37	0.93

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

28: W. Bullard Ave. & N. Carnegie Ave.

Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Group Flow (vph)	874	514	480	550	474	588
v/c Ratio	0.99	0.54	1.03	0.38	0.89	0.94
Control Delay	58.2	6.6	89.7	4.9	66.1	35.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.2	6.6	89.7	4.9	66.1	35.9
Queue Length 50th (ft)	595	44	~363	103	171	102
Queue Length 95th (ft)	#879	127	#565	146	#262	#332
Internal Link Dist (ft)	1488			945	941	
Turn Bay Length (ft)						
Base Capacity (vph)	881	960	467	1440	531	626
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.54	1.03	0.38	0.89	0.94

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SET	NWT	NWR	NET	SWL	SWT
Lane Group Flow (vph)	1270	1026	795	327	568	427
v/c Ratio	3.70dl	1.15	0.82	1.59	1.25	0.64
Control Delay	146.5	103.3	25.7	314.4	163.8	28.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	146.5	103.3	25.7	314.4	163.8	28.0
Queue Length 50th (ft)	~646	~902	377	~360	~550	205
Queue Length 95th (ft)	#785	m#836	m349	#547	#770	321
Internal Link Dist (ft)	2208	2920		303		941
Turn Bay Length (ft)			65			
Base Capacity (vph)	1017	891	967	206	454	666
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.25	1.15	0.82	1.59	1.25	0.64

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

30: W. Bullard Ave. & N. Dante Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	110	1203	61	61	949	96	61	7	10	229	15	29
v/c Ratio	0.47	0.67	0.07	0.40	0.52	0.11	0.16	0.01	0.02	0.58	0.03	0.06
Control Delay	15.3	9.8	2.3	16.5	8.1	2.0	14.2	12.8	8.2	21.1	13.1	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	9.8	2.3	16.5	8.1	2.0	14.2	12.8	8.2	21.1	13.1	6.6
Queue Length 50th (ft)	14	93	0	7	66	0	11	0	0	46	3	0
Queue Length 95th (ft)	59	181	12	40	130	15	37	4	8	119	14	14
Internal Link Dist (ft)		1442			3543			564			4207	
Turn Bay Length (ft)												
Base Capacity (vph)	276	2138	981	179	2138	994	519	1319	596	523	695	608
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.56	0.06	0.34	0.44	0.10	0.12	0.01	0.02	0.44	0.02	0.05

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	470	595	139	40	1529	45	907	452	103	1232	279
v/c Ratio	1.16	0.36	0.17	0.41	1.10	0.76	0.90	0.68	0.87	1.05	0.42
Control Delay	143.0	21.4	3.7	67.3	91.1	120.8	53.7	18.5	107.8	78.5	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	143.0	21.4	3.7	67.3	91.1	120.8	53.7	18.5	107.8	78.5	11.9
Queue Length 50th (ft)	~224	156	0	30	~713	35	352	105	81	~557	46
Queue Length 95th (ft)	#331	203	36	68	#855	#106	#461	230	#187	#693	120
Internal Link Dist (ft)		2564			1707		4355			5342	
Turn Bay Length (ft)											
Base Capacity (vph)	405	1676	823	102	1390	59	1032	669	119	1177	657
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.36	0.17	0.39	1.10	0.76	0.88	0.68	0.87	1.05	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	202	91	40	3	79	1000	47	1926	1001	2017	354
v/c Ratio	0.54	0.24	0.11	0.05	0.47	0.88	0.40	0.99	1.01	0.63	0.27
Control Delay	51.8	37.2	11.6	57.3	57.5	38.3	61.4	52.9	70.4	16.3	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.8	37.2	11.6	57.3	57.5	38.3	61.4	52.9	70.4	16.3	1.2
Queue Length 50th (ft)	70	52	0	2	54	337	32	~505	~390	337	3
Queue Length 95th (ft)	112	105	29	13	106	464	75	#703	#579	469	30
Internal Link Dist (ft)		923			436			1285		987	
Turn Bay Length (ft)	150		150	150		150	150		150		150
Base Capacity (vph)	492	465	425	62	257	1140	128	1944	992	3177	1316
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.20	0.09	0.05	0.31	0.88	0.37	0.99	1.01	0.63	0.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

33: W. Barstow Ave. & N. Grantland Ave.

Lane Group	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	132	145	294	243	28
v/c Ratio	0.32	0.34	0.28	0.21	0.03
Control Delay	8.6	9.8	5.6	5.0	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	9.8	5.6	5.0	2.7
Queue Length 50th (ft)	9	12	23	18	0
Queue Length 95th (ft)	36	42	63	49	6
Internal Link Dist (ft)	925	1278	2578	2526	
Turn Bay Length (ft)					
Base Capacity (vph)	666	687	1106	1264	1110
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.20	0.21	0.27	0.19	0.03

Intersection Summary

34: Shaw Ave & SR 99 SB Ramps

Lane Group	EBT	EBR	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	912	4	1148	70	282	60
v/c Ratio	0.58	0.00	0.73	0.04	0.45	0.10
Control Delay	10.2	0.0	13.5	0.0	13.0	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	0.0	13.5	0.0	13.0	7.0
Queue Length 50th (ft)	58	0	81	0	54	6
Queue Length 95th (ft)	126	0	#211	0	85	19
Internal Link Dist (ft)	8376		500			
Turn Bay Length (ft)		150				
Base Capacity (vph)	1605	1583	1605	1583	727	662
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.00	0.72	0.04	0.39	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	717	59	1323	984	735	265
v/c Ratio	0.50	0.04	0.92	0.62	0.87	0.33
Control Delay	16.8	0.0	31.6	1.8	30.0	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.8	0.0	31.6	1.8	30.0	7.8
Queue Length 50th (ft)	115	0	270	0	271	37
Queue Length 95th (ft)	161	0	#407	0	#489	82
Internal Link Dist (ft)	500		2498			
Turn Bay Length (ft)				150		
Base Capacity (vph)	1470	1583	1470	1583	849	817
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.04	0.90	0.62	0.87	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	10	1105	84	529	1732	933	652	846	9	64	978	892
v/c Ratio	0.17	1.17	0.18	0.77	1.01	0.95	1.20	0.69	0.02	0.53	1.14	1.18
Control Delay	63.0	127.7	17.7	53.9	54.1	37.1	133.8	34.1	16.9	69.8	119.9	126.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	127.7	17.7	53.9	54.1	37.1	133.8	34.1	16.9	69.8	119.9	126.0
Queue Length 50th (ft)	8	~536	21	201	670	442	~318	294	1	48	~466	~833
Queue Length 95th (ft)	27	#672	62	264	#957	#828	m207	m218	m0	96	#599	#1084
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	59	944	457	687	1723	978	544	1232	556	133	855	754
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	1.17	0.18	0.77	1.01	0.95	1.20	0.69	0.02	0.48	1.14	1.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	284	1760	201	239	2086	237	460	670	157	515	498	162
v/c Ratio	1.03	0.87	0.29	0.77	1.00	0.33	0.86	0.95	0.40	1.00	0.73	0.38
Control Delay	109.3	33.2	9.9	44.9	46.1	20.2	57.8	63.4	17.2	83.3	45.0	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	109.3	33.2	9.9	44.9	46.1	20.2	57.8	63.4	17.2	83.3	45.0	10.9
Queue Length 50th (ft)	~101	369	34	80	~473	71	148	223	30	~171	158	10
Queue Length 95th (ft)	#184	437	83	m77	m449	m66	#227	#336	89	#280	216	65
Internal Link Dist (ft)		3260			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	275	2034	703	309	2085	714	549	708	397	515	685	422
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.87	0.29	0.77	1.00	0.33	0.84	0.95	0.40	1.00	0.73	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	814	1595	328	490	1537	171	435	616	477	214	488	783
v/c Ratio	0.91	0.82	0.45	0.86	1.04	0.32	0.98	0.79	0.79	0.89	0.86	1.07
Control Delay	57.5	29.3	12.3	56.9	70.7	12.5	81.4	45.4	22.8	73.3	52.4	87.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.5	29.3	12.3	56.9	70.7	12.5	81.4	45.4	22.8	73.3	52.4	87.9
Queue Length 50th (ft)	287	221	48	157	~390	28	144	196	90	61	168	~567
Queue Length 95th (ft)	m#340	m272	m86	#237	#486	81	#243	261	#257	m#127	m#251	#800
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	893	1954	737	584	1475	538	446	779	601	240	566	730
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.82	0.45	0.84	1.04	0.32	0.98	0.79	0.79	0.89	0.86	1.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	361	1301	243	425	1107	216	252	391	246	291	512	418
v/c Ratio	0.75	0.90	0.39	0.87	0.76	0.35	0.73	0.46	0.43	0.85	0.60	0.68
Control Delay	39.9	33.9	5.1	49.7	26.7	5.0	45.1	24.6	6.0	55.5	26.8	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.9	33.9	5.1	49.7	26.7	5.0	45.1	24.6	6.0	55.5	26.8	13.5
Queue Length 50th (ft)	77	195	0	93	158	0	55	75	0	64	102	40
Queue Length 95th (ft)	#133	#278	47	#168	205	45	#105	114	51	#128	150	130
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	490	1453	626	490	1463	610	343	859	571	343	859	615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.90	0.39	0.87	0.76	0.35	0.73	0.46	0.43	0.85	0.60	0.68

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	915	212	625	833	221	582	447	359
v/c Ratio	1.03	0.46	1.03	0.38	0.92	0.89	0.97	0.68
Control Delay	82.7	25.4	83.9	11.6	88.4	23.9	87.9	43.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.7	25.4	83.9	11.6	88.4	23.9	87.9	43.1
Queue Length 50th (ft)	~401	79	~520	155	169	46	180	103
Queue Length 95th (ft)	#531	156	#746	194	#328	#272	#286	156
Internal Link Dist (ft)	14973			1158	1272			429
Turn Bay Length (ft)		100	575					
Base Capacity (vph)	887	463	606	2217	244	659	459	529
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.46	1.03	0.38	0.91	0.88	0.97	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	396	1311	1573	362	210	331	298	380	476
v/c Ratio	1.06	0.67	1.09	0.51	0.71	1.07	0.98	1.10	1.02
Control Delay	115.6	21.5	86.2	21.9	61.3	110.8	89.6	125.6	71.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	115.6	21.5	86.2	21.9	61.3	110.8	89.6	125.6	71.7
Queue Length 50th (ft)	~174	365	~721	149	163	~275	209	~172	~232
Queue Length 95th (ft)	#275	443	#860	242	#271	#483	#405	#272	#445
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	372	1946	1445	704	294	310	303	344	468
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.67	1.09	0.51	0.71	1.07	0.98	1.10	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2025 BUILDOUT PLUS PROJECT PHASES 1-5 TRAFFIC CONDITION

1: N. Parkway Dr. & Herndon Ave

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	100	33	13	180	479	148
v/c Ratio	0.14	0.02	0.01	0.20	0.50	0.27
Control Delay	7.0	6.2	12.8	8.9	13.3	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	6.2	12.8	8.9	13.3	3.6
Queue Length 50th (ft)	10	1	0	0	45	0
Queue Length 95th (ft)	34	7	8	73	61	22
Internal Link Dist (ft)		297	586		195	
Turn Bay Length (ft)						
Base Capacity (vph)	725	1840	1840	909	1373	722
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.02	0.01	0.20	0.35	0.20

Intersection Summary

Lane Group	NWL	NWR	NET	SWT
Lane Group Flow (vph)	28	1157	283	702
v/c Ratio	0.04	0.66	0.35	0.88
Control Delay	12.5	5.1	11.7	27.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.5	5.1	11.7	27.9
Queue Length 50th (ft)	6	25	62	210
Queue Length 95th (ft)	21	82	94	301
Internal Link Dist (ft)	499		416	193
Turn Bay Length (ft)				
Base Capacity (vph)	772	1752	963	963
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.04	0.66	0.29	0.73

Intersection Summary

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	653	205	153	62	265	26	1052	340	143	521	542
v/c Ratio	0.95	0.19	0.26	0.29	0.51	0.08	0.68	0.51	0.33	0.35	0.55
Control Delay	52.4	17.4	4.7	33.0	17.3	27.2	23.8	8.2	27.9	15.3	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	17.4	4.7	33.0	17.3	27.2	23.8	8.2	27.9	15.3	4.5
Queue Length 50th (ft)	132	33	0	12	27	5	132	19	26	60	0
Queue Length 95th (ft)	#229	54	36	29	56	14	#210	87	50	135	66
Internal Link Dist (ft)		665			800		120			1105	
Turn Bay Length (ft)	200		250	200		200		80	200		
Base Capacity (vph)	687	1361	703	211	904	316	1549	672	428	1506	985
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.15	0.22	0.29	0.29	0.08	0.68	0.51	0.33	0.35	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	290	450	388	112	840	207	330	122	188	197	158	279
v/c Ratio	0.99	0.34	0.37	0.46	0.75	0.40	0.41	0.10	0.28	0.52	0.20	0.44
Control Delay	85.0	22.3	2.4	37.6	30.0	6.4	24.7	15.9	4.1	34.5	22.6	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.0	22.3	2.4	37.6	30.0	6.4	24.7	15.9	4.1	34.5	22.6	14.5
Queue Length 50th (ft)	65	58	3	24	122	0	62	18	0	41	28	62
Queue Length 95th (ft)	#139	86	39	47	164	48	97	35	38	72	52	124
Internal Link Dist (ft)		770			2700			870			524	
Turn Bay Length (ft)	165		165	165		165	65			65		65
Base Capacity (vph)	294	1331	1044	245	1162	522	808	1249	680	392	809	634
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.34	0.37	0.46	0.72	0.40	0.41	0.10	0.28	0.50	0.20	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	683	25	198	885	51	428	54	352
v/c Ratio	0.24	0.58	0.06	0.69	0.58	0.19	0.58	0.20	0.47
Control Delay	29.2	22.2	8.0	41.6	19.7	28.3	18.5	28.4	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	22.2	8.0	41.6	19.7	28.3	18.5	28.4	17.9
Queue Length 50th (ft)	9	76	0	36	100	9	119	9	106
Queue Length 95th (ft)	24	107	15	#78	138	23	#241	24	181
Internal Link Dist (ft)		2700			1876		1081		369
Turn Bay Length (ft)	350		250	250		140		100	
Base Capacity (vph)	229	1356	440	286	1537	264	742	264	753
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.50	0.06	0.69	0.58	0.19	0.58	0.20	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NER
Lane Group Flow (vph)	757	1392	1089	1496
v/c Ratio	0.54	0.72	0.21	0.72
Control Delay	16.9	11.1	0.1	10.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.9	11.1	0.1	10.2
Queue Length 50th (ft)	70	124	0	103
Queue Length 95th (ft)	91	222	0	189
Internal Link Dist (ft)	870		578	
Turn Bay Length (ft)				
Base Capacity (vph)	1627	1940	5085	2086
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.47	0.72	0.21	0.72

Intersection Summary

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	7	2164	82	313	2371	199	86	111	441	171	147	26
v/c Ratio	0.05	0.98	0.11	0.91	0.83	0.21	0.45	0.26	0.96	0.90	0.16	0.06
Control Delay	41.8	41.4	4.3	72.5	20.5	6.5	49.0	30.0	61.5	86.8	27.8	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.8	41.4	4.3	72.5	20.5	6.5	49.0	30.0	61.5	86.8	27.8	11.1
Queue Length 50th (ft)	2	431	1	92	362	26	24	52	192	51	35	0
Queue Length 95th (ft)	9	#560	26	#169	#589	72	48	98	#385	#111	61	20
Internal Link Dist (ft)		578			3032			2531			525	
Turn Bay Length (ft)	225			250		100	140			200		160
Base Capacity (vph)	153	2204	731	343	2848	926	191	435	457	191	897	420
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.98	0.11	0.91	0.83	0.21	0.45	0.26	0.96	0.90	0.16	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	462	2168	164	110	2076	70	292	249	157	277	338	498
v/c Ratio	1.04	0.89	0.20	0.64	1.02	0.08	0.94	0.37	0.41	0.67	0.43	1.03
Control Delay	95.7	29.3	7.5	46.0	69.4	11.4	85.5	37.6	17.2	50.5	35.7	76.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.7	29.3	7.5	46.0	69.4	11.4	85.5	37.6	17.2	50.5	35.7	76.4
Queue Length 50th (ft)	~164	442	24	36	~489	8	96	74	28	87	98	~250
Queue Length 95th (ft)	#263	517	61	m47	#638	m37	#179	113	88	129	141	#451
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	446	2441	808	172	2034	924	309	671	385	446	779	482
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.89	0.20	0.64	1.02	0.08	0.94	0.37	0.41	0.62	0.43	1.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

11: Herndon Ave & N. Bylthe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBR
Lane Group Flow (vph)	21	2591	1	2	2237	54	1	54	20
v/c Ratio	0.10	0.80	0.00	0.01	0.71	0.05	0.00	0.35	0.04
Control Delay	29.8	33.4	14.0	44.5	15.6	5.5	34.0	53.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.8	33.4	14.0	44.5	15.6	5.5	34.0	53.2	0.2
Queue Length 50th (ft)	6	604	0	0	279	5	0	17	0
Queue Length 95th (ft)	m7	661	m1	4	458	24	2	38	0
Internal Link Dist (ft)		2270			2660		994		
Turn Bay Length (ft)	220		140	220		140		120	120
Base Capacity (vph)	211	3252	1012	192	3132	986	991	153	491
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.80	0.00	0.01	0.71	0.05	0.00	0.35	0.04

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	120	2357	476	270	1983	29	300	142	257	102	153	101
v/c Ratio	0.63	0.99	0.53	0.89	0.78	0.04	0.98	0.17	0.55	0.67	0.24	0.28
Control Delay	57.1	41.7	8.6	59.1	21.6	12.2	90.6	28.6	22.4	64.3	33.0	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.1	41.7	8.6	59.1	21.6	12.2	90.6	28.6	22.4	64.3	33.0	9.1
Queue Length 50th (ft)	35	469	62	82	245	3	89	34	71	29	40	0
Queue Length 95th (ft)	#71	#608	147	m#118	m308	m7	#172	60	152	#67	67	42
Internal Link Dist (ft)		2660			4430			2164			665	
Turn Bay Length (ft)	290		150	310		100	105		75	80		80
Base Capacity (vph)	191	2373	893	305	2543	800	305	849	465	153	629	364
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.99	0.53	0.89	0.78	0.04	0.98	0.17	0.55	0.67	0.24	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	162	2493	245	215	1943	241	185	272	228	170	264	202
v/c Ratio	0.55	0.98	0.30	0.94	0.80	0.30	0.97	0.38	0.55	0.89	0.37	0.38
Control Delay	56.9	15.8	2.0	62.6	40.3	24.2	102.4	33.1	20.5	85.9	32.9	25.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	15.8	2.0	62.6	40.3	24.2	102.4	33.1	20.5	85.9	32.9	25.0
Queue Length 50th (ft)	51	80	2	62	443	118	55	71	51	50	68	84
Queue Length 95th (ft)	m58	m#90	m6	m#87	494	m148	#122	108	124	#110	105	145
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		50	245		125	160		160
Base Capacity (vph)	305	2543	824	229	2441	800	191	708	416	191	708	531
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.98	0.30	0.94	0.80	0.30	0.97	0.38	0.55	0.89	0.37	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	60	2630	201	20	2278	196	104	247	145	182	287	50
v/c Ratio	0.39	0.91	0.21	0.13	0.84	0.22	0.61	0.35	0.38	0.81	0.26	0.13
Control Delay	37.0	33.0	8.8	43.3	21.5	4.6	59.1	33.2	18.8	71.1	30.8	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	33.0	8.8	43.3	21.5	4.6	59.1	33.2	18.8	71.1	30.8	10.0
Queue Length 50th (ft)	15	595	38	5	378	16	30	65	32	54	50	0
Queue Length 95th (ft)	m18	m617	m54	17	450	49	#69	101	86	#120	76	30
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	153	2893	970	153	2712	906	170	700	378	224	1087	378
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.91	0.21	0.13	0.84	0.22	0.61	0.35	0.38	0.81	0.26	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	780	1989	239	146	1605	347	160	1235	210	163	1337	663
v/c Ratio	1.03	0.83	0.29	0.71	1.02	0.61	0.93	0.93	0.42	0.95	1.01	0.80
Control Delay	80.7	27.0	6.9	65.6	62.3	24.4	101.3	50.1	15.6	105.1	65.1	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.7	27.0	6.9	65.6	62.3	24.4	101.3	50.1	15.6	105.1	65.1	29.0
Queue Length 50th (ft)	~276	390	29	47	~385	124	53	282	42	54	~318	331
Queue Length 95th (ft)	#393	458	75	#93	#494	221	#117	#372	108	#119	#423	#501
Internal Link Dist (ft)		5199			5182			5342			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	755	2390	826	206	1576	570	172	1322	504	172	1322	825
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.83	0.29	0.71	1.02	0.61	0.93	0.93	0.42	0.95	1.01	0.80

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	360	1673	130	191	1911	373	80	608	168	270	711	118
v/c Ratio	0.93	0.77	0.17	0.74	0.97	0.51	0.37	0.56	0.36	0.90	0.54	0.24
Control Delay	69.0	22.8	3.9	55.3	39.5	11.2	41.2	30.5	7.8	70.2	27.9	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.0	22.8	3.9	55.3	39.5	11.2	41.2	30.5	7.8	70.2	27.9	6.6
Queue Length 50th (ft)	93	253	2	49	335	60	20	100	3	70	115	0
Queue Length 95th (ft)	#173	312	32	#98	#452	136	41	136	51	#139	154	39
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	386	2161	744	257	1970	733	215	1081	463	300	1322	499
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.77	0.17	0.74	0.97	0.51	0.37	0.56	0.36	0.90	0.54	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	NBL	NBR
Lane Group Flow (vph)	622	102	239	305
v/c Ratio	0.62	0.20	0.13	0.34
Control Delay	22.8	10.7	5.7	4.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	22.8	10.7	5.7	4.7
Queue Length 50th (ft)	82	0	12	18
Queue Length 95th (ft)	94	m21	26	51
Internal Link Dist (ft)	586		2735	
Turn Bay Length (ft)				
Base Capacity (vph)	1416	694	1775	887
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.44	0.15	0.13	0.34

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	41	182	2	323	341	74	115	147	4	33	387
v/c Ratio	0.24	0.31	0.01	0.68	0.21	0.10	0.40	0.28	0.03	0.10	0.65
Control Delay	27.3	20.5	15.0	27.9	11.0	4.7	27.7	6.7	26.0	18.0	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	20.5	15.0	27.9	11.0	4.7	27.7	6.7	26.0	18.0	8.4
Queue Length 50th (ft)	11	23	0	77	22	0	15	5	1	8	0
Queue Length 95th (ft)	39	54	5	#232	76	24	42	43	9	26	56
Internal Link Dist (ft)		700			578			177		213	
Turn Bay Length (ft)	150		150	150		150	150		150		150
Base Capacity (vph)	171	1045	469	496	1756	822	287	615	135	552	742
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.17	0.00	0.65	0.19	0.09	0.40	0.24	0.03	0.06	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SER	NEL	NET	SWT
Lane Group Flow (vph)	22	396	349	1496	1392
v/c Ratio	0.08	0.68	0.81	0.43	0.74
Control Delay	18.4	9.2	37.4	4.5	18.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.4	9.2	37.4	4.5	18.6
Queue Length 50th (ft)	6	0	93	43	121
Queue Length 95th (ft)	20	57	#260	125	#247
Internal Link Dist (ft)	405			1398	1849
Turn Bay Length (ft)			150		
Base Capacity (vph)	472	713	439	3513	1879
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.05	0.56	0.79	0.43	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	88	157	429	290	203	63	528	1995	479	125	1795	211
v/c Ratio	0.46	0.27	0.93	0.94	0.26	0.16	0.91	0.77	0.57	0.64	0.89	0.30
Control Delay	49.5	33.4	45.7	79.5	30.4	9.1	58.4	20.6	15.7	57.9	32.6	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	33.4	45.7	79.5	30.4	9.1	58.4	20.6	15.7	57.9	32.6	7.7
Queue Length 50th (ft)	25	41	110	86	51	0	154	325	149	36	345	23
Queue Length 95th (ft)	49	68	#289	#164	82	32	#248	389	244	#74	#427	69
Internal Link Dist (ft)		436			70			1507			1398	
Turn Bay Length (ft)	150		150	150		150	15		15	150		150
Base Capacity (vph)	190	629	477	310	780	398	581	2582	845	194	2008	714
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.25	0.90	0.94	0.26	0.16	0.91	0.77	0.57	0.64	0.89	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	85	410	679	65	265	10	88	14	17	54	73	193
v/c Ratio	0.18	0.26	0.63	0.08	0.17	0.01	0.19	0.03	0.04	0.15	0.15	0.35
Control Delay	5.5	5.2	3.5	4.6	4.8	2.7	11.7	11.0	6.9	11.8	11.4	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.5	5.2	3.5	4.6	4.8	2.7	11.7	11.0	6.9	11.8	11.4	4.8
Queue Length 50th (ft)	6	14	0	4	8	0	8	1	0	5	7	0
Queue Length 95th (ft)	22	37	31	17	25	4	45	12	11	32	38	36
Internal Link Dist (ft)		110			220			259			485	
Turn Bay Length (ft)	150		150	150		150				150		150
Base Capacity (vph)	690	2231	1249	1116	2231	1001	782	823	709	616	823	807
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.18	0.54	0.06	0.12	0.01	0.11	0.02	0.02	0.09	0.09	0.24

Intersection Summary

23: W. Sierra Ave. & N. Polk Ave.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	92	281	20	232	111	134	210	18	104	87	202
v/c Ratio	0.26	0.46	0.06	0.39	0.19	0.22	0.24	0.02	0.19	0.10	0.24
Control Delay	8.4	7.1	6.6	8.7	2.8	8.0	7.6	3.9	7.9	6.8	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	7.1	6.6	8.7	2.8	8.0	7.6	3.9	7.9	6.8	2.4
Queue Length 50th (ft)	7	14	1	18	0	10	17	0	8	6	0
Queue Length 95th (ft)	28	53	9	57	16	40	54	7	33	26	22
Internal Link Dist (ft)		2293		4207			2050			2531	
Turn Bay Length (ft)						150					
Base Capacity (vph)	526	858	489	857	788	762	1087	931	681	1087	1008
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.33	0.04	0.27	0.14	0.18	0.19	0.02	0.15	0.08	0.20

Intersection Summary

Lane Group	NBL	NBT	NBR	SBL	SBT	SEL	SET	NWL	NWT
Lane Group Flow (vph)	29	2150	460	80	2337	1	17	170	166
v/c Ratio	0.29	0.84	0.45	0.76	0.64	0.01	0.05	0.41	0.40
Control Delay	47.6	22.2	2.9	81.7	14.4	42.0	0.2	33.4	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	22.2	2.9	81.7	14.4	42.0	0.2	33.4	29.9
Queue Length 50th (ft)	15	322	0	41	185	1	0	73	63
Queue Length 95th (ft)	44	474	50	#128	361	6	0	#216	#194
Internal Link Dist (ft)		1313			1507		858		751
Turn Bay Length (ft)	380		250	320		310		300	
Base Capacity (vph)	99	2570	1027	105	3656	75	360	416	419
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.84	0.45	0.76	0.64	0.01	0.05	0.41	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

25: Bullard & N. Grantland Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	154	12	9	1	20	196	8	90	61	44
v/c Ratio	0.39	0.02	0.02	0.00	0.04	0.34	0.01	0.04	0.08	0.04
Control Delay	8.7	5.0	3.4	5.0	5.1	2.8	6.4	5.7	6.5	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.7	5.0	3.4	5.0	5.1	2.8	6.4	5.7	6.5	5.2
Queue Length 50th (ft)	10	1	0	0	1	0	1	3	4	2
Queue Length 95th (ft)	29	4	3	1	6	15	4	10	17	11
Internal Link Dist (ft)		1175			1887			2526		2735
Turn Bay Length (ft)										
Base Capacity (vph)	590	793	679	595	793	787	937	2445	895	1229
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.02	0.01	0.00	0.03	0.25	0.01	0.04	0.07	0.04

Intersection Summary

Lane Group	NBT	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	2560	2549	141	283	1105
v/c Ratio	0.98	0.78	0.09	0.21	1.02
Control Delay	34.2	17.9	0.1	16.9	59.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	34.2	17.9	0.1	16.9	59.3
Queue Length 50th (ft)	433	282	0	47	~323
Queue Length 95th (ft)	#581	330	0	74	#474
Internal Link Dist (ft)	222	1313			
Turn Bay Length (ft)			380		
Base Capacity (vph)	2606	3284	1583	1330	1081
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.98	0.78	0.09	0.21	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBT	NBR	SBT	SEL	SER
Lane Group Flow (vph)	2757	395	1562	189	103
v/c Ratio	0.76	0.25	0.43	0.57	0.32
Control Delay	9.5	0.4	5.2	26.7	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.5	0.4	5.2	26.7	15.8
Queue Length 50th (ft)	200	0	74	56	20
Queue Length 95th (ft)	#367	0	133	106	53
Internal Link Dist (ft)	987		279		
Turn Bay Length (ft)		400			
Base Capacity (vph)	3639	1583	3639	430	409
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.76	0.25	0.43	0.44	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

28: W. Bullard Ave. & N. Carnegie Ave.

Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Group Flow (vph)	272	288	754	559	554	800
v/c Ratio	0.51	0.60	0.92	0.24	0.71	0.82
Control Delay	35.9	10.0	38.4	5.5	35.3	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	10.0	38.4	5.5	35.3	10.7
Queue Length 50th (ft)	72	0	344	53	139	0
Queue Length 95th (ft)	110	67	#637	73	208	#148
Internal Link Dist (ft)	1488			945	941	
Turn Bay Length (ft)						
Base Capacity (vph)	734	557	882	2502	867	998
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.52	0.85	0.22	0.64	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SET	NWL	NWT	NWR	NET	SWL	SWT	SWR
Lane Group Flow (vph)	743	386	53	325	621	92	303	320	408
v/c Ratio	1.05	0.22	0.45	0.61	0.99	0.54	0.81	0.84	0.61
Control Delay	83.2	14.9	65.7	53.3	46.8	61.0	62.4	66.0	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.2	14.9	65.7	53.3	46.8	61.0	62.4	66.0	8.3
Queue Length 50th (ft)	~627	73	40	125	144	66	235	251	0
Queue Length 95th (ft)	#864	106	83	175	#397	117	#437	#467	92
Internal Link Dist (ft)		2208		2920		303		941	
Turn Bay Length (ft)					65				
Base Capacity (vph)	708	1726	133	531	629	240	376	379	671
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.22	0.40	0.61	0.99	0.38	0.81	0.84	0.61

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

30: W. Bullard Ave. & N. Dante Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	20	951	39	27	967	35	180	12	20	110	14	51
v/c Ratio	0.10	0.62	0.05	0.13	0.63	0.05	0.43	0.01	0.04	0.26	0.03	0.10
Control Delay	7.6	9.3	3.1	8.1	9.4	3.1	12.8	8.0	4.6	10.5	8.2	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.6	9.3	3.1	8.1	9.4	3.1	12.8	8.0	4.6	10.5	8.2	4.6
Queue Length 50th (ft)	2	54	0	2	55	0	26	1	0	15	2	1
Queue Length 95th (ft)	11	119	10	14	122	9	58	4	8	37	8	14
Internal Link Dist (ft)		1442			3543			564			4207	
Turn Bay Length (ft)												
Base Capacity (vph)	224	1700	781	224	1700	779	596	1513	688	596	796	701
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.56	0.05	0.12	0.57	0.04	0.30	0.01	0.03	0.18	0.02	0.07

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	303	1386	91	292	826	75	749	251	74	645	264
v/c Ratio	0.66	1.01	0.14	0.99	0.56	0.95	0.95	0.46	0.94	0.82	0.47
Control Delay	44.4	54.7	4.7	89.7	21.3	134.9	58.3	7.0	131.7	43.4	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	54.7	4.7	89.7	21.3	134.9	58.3	7.0	131.7	43.4	7.1
Queue Length 50th (ft)	84	~413	0	168	182	44	222	0	43	184	0
Queue Length 95th (ft)	126	#571	29	#329	241	#131	#338	59	#129	#267	61
Internal Link Dist (ft)		2564			1707		4355			5342	
Turn Bay Length (ft)											
Base Capacity (vph)	491	1376	671	295	1483	79	786	547	79	786	557
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	1.01	0.14	0.99	0.56	0.95	0.95	0.46	0.94	0.82	0.47

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	334	129	11	59	126	911	14	1907	108	368	1088	209
v/c Ratio	0.76	0.37	0.04	0.48	0.62	0.93	0.23	0.90	0.15	0.53	0.34	0.16
Control Delay	60.3	45.5	19.8	66.0	62.6	51.9	66.2	38.3	7.4	44.7	11.2	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.3	45.5	19.8	66.0	62.6	51.9	66.2	38.3	7.4	44.7	11.2	0.9
Queue Length 50th (ft)	126	88	0	43	92	372	11	482	10	130	124	0
Queue Length 95th (ft)	181	148	17	90	156	#510	34	578	46	185	193	18
Internal Link Dist (ft)		920			480			1285			987	
Turn Bay Length (ft)												
Base Capacity (vph)	480	373	326	137	255	981	60	2166	724	699	3201	1302
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.35	0.03	0.43	0.49	0.93	0.23	0.88	0.15	0.53	0.34	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

33: W. Barstow Ave. & N. Grantland Ave.

Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	326	109	100	4	18	9
v/c Ratio	0.49	0.16	0.16	0.01	0.03	0.02
Control Delay	8.2	5.5	8.2	5.5	7.4	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.2	5.5	8.2	5.5	7.4	5.0
Queue Length 50th (ft)	23	7	8	0	1	0
Queue Length 95th (ft)	57	21	29	3	9	5
Internal Link Dist (ft)	925	1278	2578		2526	
Turn Bay Length (ft)						
Base Capacity (vph)	886	891	873	775	893	778
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.12	0.11	0.01	0.02	0.01

Intersection Summary

34: Shaw Ave & SR 99 SB Ramps

Lane Group	EBT	EBR	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	1920	559	1650	7	455	280
v/c Ratio	0.78	0.35	0.67	0.00	0.72	0.49
Control Delay	14.1	0.6	11.7	0.0	21.4	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	0.6	11.7	0.0	21.4	15.4
Queue Length 50th (ft)	158	0	172	0	110	59
Queue Length 95th (ft)	221	0	m171	m0	#193	111
Internal Link Dist (ft)	8376		500			
Turn Bay Length (ft)		150				
Base Capacity (vph)	2447	1583	2447	1583	673	607
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.35	0.67	0.00	0.68	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	1762	118	1867	504	1004	151
v/c Ratio	0.96	0.07	1.02	0.32	1.01	0.17
Control Delay	36.8	0.1	58.6	0.5	55.3	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	0.1	58.6	0.5	55.3	11.3
Queue Length 50th (ft)	293	0	~449	0	~631	44
Queue Length 95th (ft)	#495	m0	#561	0	#920	76
Internal Link Dist (ft)	500		2498			
Turn Bay Length (ft)				150		
Base Capacity (vph)	1831	1583	1831	1583	991	887
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.07	1.02	0.32	1.01	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	39	1686	73	350	1343	425	357	551	4	20	551	655
v/c Ratio	0.31	1.01	0.13	1.02	0.63	0.52	1.04	0.36	0.01	0.16	0.48	1.05
Control Delay	58.4	62.5	12.4	103.3	27.3	10.8	108.1	22.3	13.0	54.3	31.2	79.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.4	62.5	12.4	103.3	27.3	10.8	108.1	22.3	13.0	54.3	31.2	79.5
Queue Length 50th (ft)	13	~445	13	~132	283	71	~140	126	0	7	162	~429
Queue Length 95th (ft)	32	#557	46	#228	336	166	#235	192	7	20	215	#655
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	125	1664	550	343	2136	825	343	1538	690	125	1158	622
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	1.01	0.13	1.02	0.63	0.52	1.04	0.36	0.01	0.16	0.48	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	104	1753	208	104	1684	39	228	224	66	136	696	151
v/c Ratio	0.49	0.92	0.30	0.49	0.88	0.06	0.84	0.22	0.13	0.50	0.75	0.29
Control Delay	37.9	29.9	5.4	37.9	26.9	7.2	58.7	19.2	6.5	35.6	28.2	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.9	29.9	5.4	37.9	26.9	7.2	58.7	19.2	6.5	35.6	28.2	6.4
Queue Length 50th (ft)	21	245	9	21	230	2	47	36	0	27	133	3
Queue Length 95th (ft)	43	#353	49	43	#331	19	#105	62	26	52	190	42
Internal Link Dist (ft)		3260			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	211	1913	703	211	1913	615	271	1032	508	271	926	517
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.92	0.30	0.49	0.88	0.06	0.84	0.22	0.13	0.50	0.75	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	390	1870	92	176	1407	39	216	559	179	271	525	560
v/c Ratio	0.74	0.92	0.14	0.77	0.89	0.07	0.68	0.70	0.38	0.85	0.65	0.81
Control Delay	39.4	30.4	6.3	58.0	33.2	7.4	44.7	32.0	9.4	58.8	30.8	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	30.4	6.3	58.0	33.2	7.4	44.7	32.0	9.4	58.8	30.8	29.0
Queue Length 50th (ft)	89	293	6	42	227	0	51	126	11	65	117	211
Queue Length 95th (ft)	#136	#401	33	#91	#315	20	#93	179	60	#128	167	#387
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	549	2034	675	229	1588	521	320	802	473	320	802	704
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.92	0.14	0.77	0.89	0.07	0.68	0.70	0.38	0.85	0.65	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	96	1678	99	199	1532	121	214	616	204	180	454	109
v/c Ratio	0.45	0.98	0.16	0.94	0.83	0.19	0.81	0.63	0.37	0.68	0.46	0.21
Control Delay	36.7	39.5	4.8	83.9	24.9	5.3	55.3	24.0	8.6	44.3	21.4	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	39.5	4.8	83.9	24.9	5.3	55.3	24.0	8.6	44.3	21.4	5.6
Queue Length 50th (ft)	19	235	1	41	206	3	44	111	16	36	77	0
Queue Length 95th (ft)	40	#341	28	#100	#294	34	#96	162	62	#77	117	32
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	211	1721	600	211	1846	643	264	980	546	264	980	517
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.98	0.17	0.94	0.83	0.19	0.81	0.63	0.37	0.68	0.46	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

40: Ashlan Ave & SR-99 SB Ramps

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1628	37	98	616	60	499	263	228
v/c Ratio	0.92	0.07	0.73	0.27	0.41	0.84	0.74	0.18
Control Delay	36.1	11.2	67.4	14.1	43.7	32.3	50.6	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	11.2	67.4	14.1	43.7	32.3	50.6	8.5
Queue Length 50th (ft)	286	5	49	65	29	158	68	15
Queue Length 95th (ft)	#390	25	#126	89	66	#333	#135	41
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1761	562	135	2352	155	608	354	1280
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.07	0.73	0.26	0.39	0.82	0.74	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	372	1245	650	298	250	263	476	259	299
v/c Ratio	1.27	0.70	0.62	0.53	0.59	0.59	0.56	0.53	0.52
Control Delay	174.7	22.0	28.0	7.1	30.7	30.4	16.5	28.4	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	174.7	22.0	28.0	7.1	30.7	30.4	16.5	28.4	7.9
Queue Length 50th (ft)	~106	160	91	0	102	108	58	50	8
Queue Length 95th (ft)	#185	204	125	57	#185	#190	109	85	67
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	294	1889	1162	592	424	444	849	486	575
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.27	0.66	0.56	0.50	0.59	0.59	0.56	0.53	0.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: N. Parkway Dr. & Herndon Ave

Lane Group	SEL	SET	NWT	NWR	SWL	SWR
Lane Group Flow (vph)	91	37	15	263	1962	249
v/c Ratio	0.42	0.07	0.03	0.56	0.81	0.21
Control Delay	28.1	20.6	20.0	8.4	7.8	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.1	20.6	20.0	8.4	7.8	0.8
Queue Length 50th (ft)	30	6	2	0	464	7
Queue Length 95th (ft)	64	16	8	51	m157	m0
Internal Link Dist (ft)		297	586		195	
Turn Bay Length (ft)						
Base Capacity (vph)	371	944	944	615	2434	1195
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.04	0.02	0.43	0.81	0.21

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	NWL	NWR	NET	SWT
Lane Group Flow (vph)	14	1512	352	2277
v/c Ratio	0.04	1.09	0.26	1.67
Control Delay	39.2	67.2	3.9	323.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	39.2	67.2	3.9	323.5
Queue Length 50th (ft)	9	~357	55	~2569
Queue Length 95th (ft)	28	#510	49	#2825
Internal Link Dist (ft)	499		416	193
Turn Bay Length (ft)				
Base Capacity (vph)	354	1388	1366	1366
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.04	1.09	0.26	1.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

4: Golden State & Herndon Ave

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	576	232	139	620	672	43	1260	526	426	1508	446
v/c Ratio	0.99	0.50	0.51	1.00	0.83	0.29	0.94	0.89	0.90	0.82	0.44
Control Delay	76.5	43.8	24.7	79.0	25.2	52.0	51.3	39.5	60.3	26.2	3.8
Queue Delay	0.0	0.0	7.8	301.5	0.0	0.0	0.0	0.0	0.0	237.1	0.0
Total Delay	76.5	43.8	32.5	380.5	25.2	52.0	51.3	39.5	60.3	263.4	3.8
Queue Length 50th (ft)	190	72	34	~206	81	13	289	193	265	442	11
Queue Length 95th (ft)	#302	108	91	#323	146	31	#384	#396	#473	#623	67
Internal Link Dist (ft)		665			800		120			1105	
Turn Bay Length (ft)	200		250	200		200		80	200		
Base Capacity (vph)	584	566	320	618	888	147	1335	588	473	1847	1023
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	139	255	0	0	0	0	0	859	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.41	0.77	1.71	0.76	0.29	0.94	0.89	0.90	1.53	0.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

6: Herndon Ave & N. Bryan Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	421	640	262	60	478	149	572	286	137	185	446	326
v/c Ratio	0.84	0.41	0.26	0.33	0.56	0.38	0.64	0.23	0.21	0.48	0.59	0.48
Control Delay	47.6	22.0	5.2	39.2	30.9	8.0	29.8	18.2	4.7	35.4	30.3	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	22.0	5.2	39.2	30.9	8.0	29.8	18.2	4.7	35.4	30.3	16.7
Queue Length 50th (ft)	99	91	32	14	75	0	122	48	0	41	98	92
Queue Length 95th (ft)	#172	116	66	32	101	44	#201	80	36	73	144	162
Internal Link Dist (ft)		770			2700			870			524	
Turn Bay Length (ft)	165		165	165		165	65			65		65
Base Capacity (vph)	504	1616	1015	183	1085	455	888	1269	656	400	755	680
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.40	0.26	0.33	0.44	0.33	0.64	0.23	0.21	0.46	0.59	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

7: Herndon Ave & Hayes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	714	45	128	638	61	488	54	387
v/c Ratio	0.24	0.61	0.11	0.56	0.49	0.21	0.60	0.19	0.47
Control Delay	29.2	22.8	7.0	37.5	20.3	28.1	19.9	27.8	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	22.8	7.0	37.5	20.3	28.1	19.9	27.8	17.0
Queue Length 50th (ft)	9	84	0	23	74	10	150	9	115
Queue Length 95th (ft)	24	112	20	#52	100	27	#295	24	196
Internal Link Dist (ft)		2700			1876		1081		369
Turn Bay Length (ft)	350		250	250		140		100	
Base Capacity (vph)	229	1356	455	229	1436	287	814	287	827
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.53	0.10	0.56	0.44	0.21	0.60	0.19	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NER
Lane Group Flow (vph)	1016	2001	543	1602
v/c Ratio	0.82	0.92	0.11	0.70
Control Delay	30.0	19.7	0.0	9.9
Queue Delay	3.7	0.0	0.0	0.7
Total Delay	33.8	19.7	0.0	10.6
Queue Length 50th (ft)	138	309	0	156
Queue Length 95th (ft)	#187	#529	0	214
Internal Link Dist (ft)	870		578	
Turn Bay Length (ft)				
Base Capacity (vph)	1252	2175	5085	2290
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	159	0	0	340
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.93	0.92	0.11	0.82

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

9: Herndon Ave & N. Polk Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	9	2474	136	500	2399	247	111	436	512	328	541	35
v/c Ratio	0.08	1.14	0.19	1.17	0.83	0.26	0.50	1.00	1.02	1.15	0.61	0.08
Control Delay	57.8	104.1	9.4	111.7	28.8	10.5	62.3	90.1	76.5	147.5	43.1	11.6
Queue Delay	0.0	10.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.8	114.9	9.4	111.7	28.8	10.5	62.3	90.1	76.5	147.5	43.1	11.6
Queue Length 50th (ft)	3	~822	23	~231	693	88	43	~342	~312	~153	196	0
Queue Length 95th (ft)	12	#914	63	m#195	m648	m101	74	#556	#528	#248	256	26
Internal Link Dist (ft)		578			3032			2531			525	
Turn Bay Length (ft)	225			250		100	140			200		160
Base Capacity (vph)	114	2161	722	429	2898	940	229	435	501	286	893	425
Starvation Cap Reductn	0	45	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	1.17	0.19	1.17	0.83	0.26	0.48	1.00	1.02	1.15	0.61	0.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

10: Herndon Ave & N. Milburn Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	737	2199	386	125	2321	284	272	353	108	204	339	557
v/c Ratio	1.07	0.78	0.40	0.56	1.10	0.33	1.06	0.64	0.32	0.64	0.55	1.10
Control Delay	71.2	23.9	9.4	64.5	85.1	14.8	125.1	53.5	12.7	61.9	49.0	94.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.2	23.9	9.4	64.5	85.1	14.8	125.1	53.5	12.7	61.9	49.0	94.1
Queue Length 50th (ft)	~319	605	146	49	~745	104	~119	137	4	79	127	~301
Queue Length 95th (ft)	m236	m528	m111	81	#838	161	#207	190	56	120	177	#524
Internal Link Dist (ft)		3032			2270			3746			288	
Turn Bay Length (ft)	230		135	230		140	225		100	230		100
Base Capacity (vph)	687	2805	965	229	2119	882	257	555	334	343	619	506
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.07	0.78	0.40	0.55	1.10	0.32	1.06	0.64	0.32	0.59	0.55	1.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

11: Herndon Ave & N. Bylthe Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	5	2503	1	4	2730	65	2	4	65	1	18
v/c Ratio	0.03	0.73	0.00	0.02	0.80	0.06	0.01	0.01	0.42	0.00	0.07
Control Delay	49.8	14.1	8.0	49.8	16.0	4.8	49.5	0.0	59.4	39.0	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	14.1	8.0	49.8	16.0	4.8	49.5	0.0	59.4	39.0	17.5
Queue Length 50th (ft)	1	345	0	1	412	7	0	0	23	1	0
Queue Length 95th (ft)	8	569	3	7	680	28	5	0	46	5	21
Internal Link Dist (ft)		2270			2660			994		634	
Turn Bay Length (ft)	220		140	220		140	235		120		120
Base Capacity (vph)	177	3417	1064	177	3417	1074	499	798	156	279	253
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.73	0.00	0.02	0.80	0.06	0.00	0.01	0.42	0.00	0.07

Intersection Summary

12: Herndon Ave & N. Brawley Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	145	2260	424	308	2453	88	504	215	297	36	184	138
v/c Ratio	0.84	1.01	0.51	1.00	1.00	0.11	1.05	0.20	0.52	0.26	0.31	0.40
Control Delay	85.4	50.2	11.2	79.8	26.6	6.1	96.8	27.6	20.6	51.5	37.9	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.4	50.2	11.2	79.8	26.6	6.1	96.8	27.6	20.6	51.5	37.9	17.6
Queue Length 50th (ft)	48	~527	79	106	~339	7	~181	56	90	11	54	24
Queue Length 95th (ft)	#104	#653	165	m#111	m315	m6	#284	87	177	28	87	80
Internal Link Dist (ft)		2660			4430			2164			665	
Turn Bay Length (ft)	290		150	310		100	105		75	80		80
Base Capacity (vph)	172	2237	825	309	2441	778	481	1069	568	137	602	347
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	1.01	0.51	1.00	1.00	0.11	1.05	0.20	0.52	0.26	0.31	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	298	2076	380	221	2525	373	165	378	196	252	309	474
v/c Ratio	0.74	0.80	0.44	0.72	1.03	0.46	0.69	0.67	0.51	0.92	0.51	0.91
Control Delay	66.7	5.7	1.6	58.5	52.2	15.3	61.0	46.0	15.1	83.4	41.2	55.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.7	5.7	1.6	58.5	52.2	15.3	61.0	46.0	15.1	83.4	41.2	55.5
Queue Length 50th (ft)	105	65	4	71	~637	116	54	120	21	83	95	282
Queue Length 95th (ft)	m112	m70	m7	#121	#732	195	#98	171	88	#158	139	#476
Internal Link Dist (ft)		4430			6065			1748			747	
Turn Bay Length (ft)	145		50	280		50	245		125	160		160
Base Capacity (vph)	412	2596	862	309	2457	809	240	566	386	275	602	526
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.80	0.44	0.72	1.03	0.46	0.69	0.67	0.51	0.92	0.51	0.90

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	88	2315	104	197	2817	211	95	335	110	116	446	151
v/c Ratio	0.58	0.87	0.12	0.74	0.97	0.22	0.62	0.53	0.31	0.76	0.45	0.40
Control Delay	57.7	23.6	3.5	58.3	30.3	5.0	60.0	24.9	8.8	73.3	34.2	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	23.6	3.5	58.3	30.3	5.0	60.0	24.9	8.8	73.3	34.2	19.1
Queue Length 50th (ft)	25	400	3	57	547	23	29	71	7	34	84	33
Queue Length 95th (ft)	#55	476	27	#108	#709	56	m47	m94	m32	#79	117	89
Internal Link Dist (ft)		6065			5199			10976			1443	
Turn Bay Length (ft)	260		200	275		140	175		65	185		350
Base Capacity (vph)	153	2656	871	267	2915	959	153	629	350	153	994	378
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.87	0.12	0.74	0.97	0.22	0.62	0.53	0.31	0.76	0.45	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	887	1590	183	98	2078	173	233	1405	50	276	1428	1205
v/c Ratio	1.05	0.64	0.21	0.46	1.32	0.32	1.25	1.17	0.12	1.27	1.14	1.44
Control Delay	86.3	22.1	3.3	57.0	182.2	18.3	190.6	123.4	10.2	193.2	113.2	231.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.3	22.1	3.3	57.0	182.2	18.3	190.6	123.4	10.2	193.2	113.2	231.4
Queue Length 50th (ft)	~353	294	3	35	~697	52	~105	~433	0	~126	~433	~1160
Queue Length 95th (ft)	#477	345	39	62	#793	110	#186	#529	31	#212	#529	#1416
Internal Link Dist (ft)		5199			5182			5342			774	
Turn Bay Length (ft)	245		190	210		145	145		280	250		230
Base Capacity (vph)	843	2503	868	218	1572	540	187	1202	412	218	1248	835
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.64	0.21	0.45	1.32	0.32	1.25	1.17	0.12	1.27	1.14	1.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

16: Herndon Ave & N Blackstone Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	218	1735	354	442	1716	366	147	982	259	290	1142	361
v/c Ratio	0.73	0.97	0.54	0.94	0.84	0.50	0.85	0.86	0.51	0.97	0.86	0.64
Control Delay	51.0	43.0	14.9	64.4	26.6	12.4	79.3	38.9	11.5	83.3	35.9	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	43.0	14.9	64.4	26.6	12.4	79.3	38.9	11.5	83.3	35.9	17.3
Queue Length 50th (ft)	55	308	74	114	276	69	38	173	25	76	198	66
Queue Length 95th (ft)	#105	#420	155	#202	339	145	#91	#241	90	#152	#258	159
Internal Link Dist (ft)		5182			3059			5156			777	
Turn Bay Length (ft)	250		160	250		100	250		110	240		90
Base Capacity (vph)	300	1780	655	472	2034	730	172	1144	510	300	1335	563
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.97	0.54	0.94	0.84	0.50	0.85	0.86	0.51	0.97	0.86	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

17: N. Parkway Dr. & N. Grantland Ave.

Lane Group	EBT	EBR	NBL	NBR
Lane Group Flow (vph)	1467	573	307	193
v/c Ratio	0.74	0.50	0.37	0.48
Control Delay	10.6	2.5	14.9	16.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.6	2.5	14.9	16.7
Queue Length 50th (ft)	108	0	34	37
Queue Length 95th (ft)	242	36	58	80
Internal Link Dist (ft)	586		2735	
Turn Bay Length (ft)				
Base Capacity (vph)	2076	1165	1155	549
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.71	0.49	0.27	0.35

Intersection Summary

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	492	609	11	88	741	176	496	486	1	193	77
v/c Ratio	0.97	0.39	0.02	0.51	0.92	0.36	0.97	0.79	0.01	0.68	0.25
Control Delay	66.0	19.0	9.2	48.3	52.0	8.6	71.6	33.0	43.0	47.5	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.0	19.0	9.2	48.3	52.0	8.6	71.6	33.0	43.0	47.5	10.3
Queue Length 50th (ft)	271	126	0	47	213	6	143	192	1	102	0
Queue Length 95th (ft)	#484	178	10	95	#332	58	#251	#414	6	172	37
Internal Link Dist (ft)		700			578			177		213	
Turn Bay Length (ft)	150		150	150		150	150		150		150
Base Capacity (vph)	508	1553	701	196	811	488	513	617	76	332	346
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.39	0.02	0.45	0.91	0.36	0.97	0.79	0.01	0.58	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Group Flow (vph)	83	510	554	1520	1867	134
v/c Ratio	0.40	0.82	0.86	0.38	0.95	0.19
Control Delay	41.1	16.1	42.9	3.4	40.2	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.1	16.1	42.9	3.4	40.2	4.3
Queue Length 50th (ft)	45	9	277	63	375	0
Queue Length 95th (ft)	83	110	#530	120	#492	35
Internal Link Dist (ft)	405			1398	1849	
Turn Bay Length (ft)			150			
Base Capacity (vph)	315	687	646	4037	1955	691
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.74	0.86	0.38	0.95	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	247	443	883	711	380	233	774	2173	395	97	2360	191
v/c Ratio	0.67	0.47	1.52	1.55	0.37	0.45	1.59	0.99	0.56	0.85	1.43	0.34
Control Delay	61.0	38.9	269.3	294.5	35.1	25.7	310.6	50.0	26.1	109.1	228.5	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.0	38.9	269.3	294.5	35.1	25.7	310.6	50.0	26.1	109.1	228.5	21.2
Queue Length 50th (ft)	95	151	~833	~400	124	96	~441	598	200	39	~905	69
Queue Length 95th (ft)	139	203	#1084	#521	170	175	#564	#727	301	#91	#998	133
Internal Link Dist (ft)		436			70			1507			1398	
Turn Bay Length (ft)	150		150	150		150	15		15	150		150
Base Capacity (vph)	397	944	580	458	1038	521	486	2204	710	114	1653	561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.47	1.52	1.55	0.37	0.45	1.59	0.99	0.56	0.85	1.43	0.34

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Flow (vph)	337	543	100	48	680	55	250	146	63	105	65	341
v/c Ratio	0.85	0.27	0.11	0.05	0.34	0.06	0.58	0.32	0.14	0.35	0.14	0.60
Control Delay	32.6	5.5	1.7	4.8	5.9	1.9	24.0	19.5	6.5	21.2	17.6	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	5.5	1.7	4.8	5.9	1.9	24.0	19.5	6.5	21.2	17.6	11.1
Queue Length 50th (ft)	69	35	0	5	46	0	76	41	0	30	18	27
Queue Length 95th (ft)	#238	63	14	16	81	10	139	83	24	68	43	93
Internal Link Dist (ft)		110			220			259			485	
Turn Bay Length (ft)	150		150	150		150				150		150
Base Capacity (vph)	448	2288	1059	1145	2288	1043	565	594	548	395	594	670
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.24	0.09	0.04	0.30	0.05	0.44	0.25	0.11	0.27	0.11	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

23: W. Sierra Ave. & N. Polk Ave.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	270	763	11	321	120	162	214	151	248	152
v/c Ratio	0.52	0.81	0.06	0.33	0.14	0.59	0.41	0.50	0.48	0.28
Control Delay	11.6	16.6	6.7	7.4	2.0	25.0	16.3	21.3	17.7	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	16.6	6.7	7.4	2.0	25.0	16.3	21.3	17.7	4.7
Queue Length 50th (ft)	37	123	1	39	0	37	44	33	55	0
Queue Length 95th (ft)	104	#309	8	91	17	95	100	86	117	32
Internal Link Dist (ft)		2293		4207			2050		2531	
Turn Bay Length (ft)						150				
Base Capacity (vph)	605	1100	220	1122	1001	365	684	400	687	679
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.69	0.05	0.29	0.12	0.44	0.31	0.38	0.36	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBL	NBT	NBR	SBL	SBT	SEL	SET	NWL	NWT
Lane Group Flow (vph)	662	3129	407	137	4425	305	1016	368	453
v/c Ratio	1.87	1.09	0.40	1.54	1.67	1.82	1.81	1.88	1.83
Control Delay	430.8	71.8	5.7	328.6	330.3	420.7	388.5	443.6	413.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	430.8	71.8	5.7	328.6	330.3	420.7	388.5	443.6	413.4
Queue Length 50th (ft)	~782	~996	48	~150	~1464	~374	~900	~457	~507
Queue Length 95th (ft)	#1012	#1079	108	#280	#1510	#563	#1170	#660	#728
Internal Link Dist (ft)		1313			1507		858		751
Turn Bay Length (ft)	380		250	320		310		300	
Base Capacity (vph)	354	2882	1014	89	2649	168	562	196	248
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.87	1.09	0.40	1.54	1.67	1.82	1.81	1.88	1.83

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

25: Bullard & N. Grantland Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	15	3	2	42	74	22	209	107	433
v/c Ratio	0.29	0.04	0.01	0.01	0.12	0.21	0.04	0.09	0.14	0.34
Control Delay	11.7	8.6	6.7	8.5	9.2	4.4	4.9	3.7	4.7	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.7	8.6	6.7	8.5	9.2	4.4	4.9	3.7	4.7	5.2
Queue Length 50th (ft)	9	2	0	0	5	0	1	7	7	33
Queue Length 95th (ft)	28	9	3	3	17	15	8	18	24	84
Internal Link Dist (ft)		1175			1887			2526		2735
Turn Bay Length (ft)										
Base Capacity (vph)	440	603	514	451	603	562	516	2476	810	1289
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.02	0.01	0.00	0.07	0.13	0.04	0.08	0.13	0.34

Intersection Summary

Lane Group	NBT	SBT	SBR	NWL	NWR
Lane Group Flow (vph)	2434	4860	235	273	1459
v/c Ratio	0.86	1.37	0.15	0.21	1.40
Control Delay	25.1	192.1	0.2	24.1	216.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	192.1	0.2	24.1	216.3
Queue Length 50th (ft)	510	~1320	0	67	~790
Queue Length 95th (ft)	586	#1364	0	97	#941
Internal Link Dist (ft)	222	1313			
Turn Bay Length (ft)			380		
Base Capacity (vph)	2820	3554	1583	1280	1041
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.86	1.37	0.15	0.21	1.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	NBT	NBR	SBT	SEL	SER
Lane Group Flow (vph)	2755	159	3264	96	196
v/c Ratio	0.75	0.10	0.89	0.31	0.71
Control Delay	8.8	0.1	13.7	28.0	41.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	0.1	13.7	28.0	41.7
Queue Length 50th (ft)	246	0	373	37	82
Queue Length 95th (ft)	341	0	#561	77	147
Internal Link Dist (ft)	987		279		
Turn Bay Length (ft)		400			
Base Capacity (vph)	3661	1583	3661	360	322
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.75	0.10	0.89	0.27	0.61

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

28: W. Bullard Ave. & N. Carnegie Ave.

Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Group Flow (vph)	505	774	892	264	803	1052
v/c Ratio	0.66	1.11	1.19	0.11	0.91	1.10
Control Delay	47.7	86.2	129.4	7.0	58.0	73.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	86.2	129.4	7.0	58.0	73.7
Queue Length 50th (ft)	189	~390	~832	34	311	~470
Queue Length 95th (ft)	249	#635	#1078	49	#422	#729
Internal Link Dist (ft)	1488			945	941	
Turn Bay Length (ft)						
Base Capacity (vph)	767	699	752	2389	887	957
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	1.11	1.19	0.11	0.91	1.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SEL	SET	NWL	NWT	NWR	NET	SWL	SWT	SWR
Lane Group Flow (vph)	607	705	27	632	1190	380	468	493	737
v/c Ratio	1.56	0.52	0.22	0.74	1.41	1.24	1.33	1.38	1.06
Control Delay	294.3	24.0	47.5	41.4	210.0	167.4	198.8	220.9	68.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	294.3	24.0	47.5	41.4	210.0	167.4	198.8	220.9	68.5
Queue Length 50th (ft)	~550	168	17	196	~713	~297	~409	~442	~272
Queue Length 95th (ft)	#761	232	43	261	#968	#481	#614	#649	#501
Internal Link Dist (ft)		2208		2920		303		941	
Turn Bay Length (ft)					65				
Base Capacity (vph)	389	1357	283	849	843	307	353	357	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.56	0.52	0.10	0.74	1.41	1.24	1.33	1.38	1.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

30: W. Bullard Ave. & N. Dante Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	110	1203	61	61	917	63	63	10	10	137	15	38
v/c Ratio	0.46	0.65	0.07	0.39	0.50	0.07	0.18	0.01	0.03	0.40	0.03	0.09
Control Delay	13.5	8.5	2.1	14.8	6.8	2.1	13.7	11.9	7.7	16.7	12.1	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	8.5	2.1	14.8	6.8	2.1	13.7	11.9	7.7	16.7	12.1	5.9
Queue Length 50th (ft)	11	72	0	6	48	0	10	1	0	24	2	0
Queue Length 95th (ft)	53	157	11	37	107	11	34	5	8	64	12	15
Internal Link Dist (ft)		1442			3543			564			4207	
Turn Bay Length (ft)												
Base Capacity (vph)	274	2104	966	177	2104	967	541	1374	621	544	723	638
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.57	0.06	0.34	0.44	0.07	0.12	0.01	0.02	0.25	0.02	0.06

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	58	1279	104	750	815	355	1276	107	67	712	774
v/c Ratio	0.41	1.45	0.23	1.75	0.50	1.71	1.06	0.18	1.14	0.78	1.38
Control Delay	65.1	241.1	16.0	377.6	23.3	374.0	80.4	10.1	210.6	48.2	207.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.1	241.1	16.0	377.6	23.3	374.0	80.4	10.1	210.6	48.2	207.5
Queue Length 50th (ft)	23	~710	22	~864	225	~406	~569	14	~60	270	~673
Queue Length 95th (ft)	45	#847	68	#1101	284	#596	#706	54	#157	343	#918
Internal Link Dist (ft)		2564			1707		4355			5342	
Turn Bay Length (ft)											
Base Capacity (vph)	141	885	447	428	1617	207	1209	594	59	914	562
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	1.45	0.23	1.75	0.50	1.71	1.06	0.18	1.14	0.78	1.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	239	258	24	121	285	880	51	1796	103	875	2203	382
v/c Ratio	0.58	0.76	0.08	0.76	1.01	0.71	0.63	1.05	0.18	1.05	0.79	0.33
Control Delay	50.2	56.9	14.4	77.4	103.5	27.7	84.0	72.2	14.7	85.6	22.8	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.2	56.9	14.4	77.4	103.5	27.7	84.0	72.2	14.7	85.6	22.8	5.0
Queue Length 50th (ft)	81	171	0	83	~203	263	35	~502	24	~343	444	59
Queue Length 95th (ft)	121	261	23	#181	#390	359	#97	#617	65	#479	535	100
Internal Link Dist (ft)		922			493			1285			987	
Turn Bay Length (ft)	250		150	200		110	150		150	500		200
Base Capacity (vph)	498	374	337	165	281	1233	81	1708	567	833	2793	1166
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.69	0.07	0.73	1.01	0.71	0.63	1.05	0.18	1.05	0.79	0.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

33: W. Barstow Ave. & N. Grantland Ave.

Lane Group	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	171	241	280	242	15
v/c Ratio	0.34	0.45	0.40	0.26	0.02
Control Delay	8.9	11.0	8.9	7.1	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	11.0	8.9	7.1	3.6
Queue Length 50th (ft)	14	24	26	21	0
Queue Length 95th (ft)	48	70	81	62	6
Internal Link Dist (ft)	925	1278	2578	2526	
Turn Bay Length (ft)					
Base Capacity (vph)	716	757	784	1048	923
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.24	0.32	0.36	0.23	0.02

Intersection Summary

34: Shaw Ave & SR 99 SB Ramps

Lane Group	EBT	EBR	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	2126	510	2508	76	597	589
v/c Ratio	0.82	0.32	0.97	0.05	0.87	0.96
Control Delay	19.1	0.5	31.5	0.1	37.6	53.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	0.5	31.5	0.1	37.6	53.3
Queue Length 50th (ft)	288	0	390	0	251	260
Queue Length 95th (ft)	354	0	#535	0	#440	#471
Internal Link Dist (ft)	8376		500			
Turn Bay Length (ft)		150				
Base Capacity (vph)	2579	1583	2579	1583	684	613
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.32	0.97	0.05	0.87	0.96

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

35: Shaw Ave & SR 99 NB Ramps

Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	1552	438	2688	928	1103	397
v/c Ratio	0.71	0.28	1.24	0.59	1.25	0.50
Control Delay	28.3	0.4	140.7	1.6	147.6	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	0.4	140.7	1.6	147.6	20.7
Queue Length 50th (ft)	323	0	~864	0	~973	177
Queue Length 95th (ft)	380	0	#956	0	#1225	265
Internal Link Dist (ft)	500		2498			
Turn Bay Length (ft)				150		
Base Capacity (vph)	2173	1583	2173	1583	885	795
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.28	1.24	0.59	1.25	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	77	1764	83	648	2455	727	675	673	112	54	1007	964
v/c Ratio	0.68	1.30	0.18	1.41	1.32	0.97	1.39	0.43	0.15	0.38	0.88	1.44
Control Delay	85.3	177.6	19.2	231.3	169.9	33.2	226.1	24.8	4.5	63.8	48.1	231.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.3	177.6	19.2	231.3	169.9	33.2	226.1	24.8	4.5	63.8	48.1	231.5
Queue Length 50th (ft)	30	~641	23	~344	~901	400	~358	191	1	21	385	~893
Queue Length 95th (ft)	#68	#738	65	m#366	m#883	m#427	#477	244	35	43	#484	#1148
Internal Link Dist (ft)		2498			1070			310			350	
Turn Bay Length (ft)	180		180	190		190	165		165	140		140
Base Capacity (vph)	114	1356	454	458	1865	750	486	1557	758	143	1150	670
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	1.30	0.18	1.41	1.32	0.97	1.39	0.43	0.15	0.38	0.88	1.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	307	2015	368	188	2308	162	439	770	120	485	536	189
v/c Ratio	1.07	0.91	0.47	0.73	1.07	0.23	0.87	0.97	0.30	1.06	0.72	0.43
Control Delay	105.3	20.0	4.3	66.5	54.3	9.8	68.9	71.2	23.1	108.2	50.2	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.3	20.0	4.3	66.5	54.3	9.8	68.9	71.2	23.1	108.2	50.2	16.7
Queue Length 50th (ft)	~140	441	27	79	~701	19	173	313	40	~212	205	35
Queue Length 95th (ft)	m96	m154	m7	m73	m213	m14	#255	#441	94	#320	269	105
Internal Link Dist (ft)		3260			5232			4218			2290	
Turn Bay Length (ft)	220		130	200		120	260		100	220		130
Base Capacity (vph)	286	2205	779	257	2161	706	515	796	400	458	749	441
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.07	0.91	0.47	0.73	1.07	0.23	0.85	0.97	0.30	1.06	0.72	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	573	2092	313	72	2095	157	510	802	163	202	934	324
v/c Ratio	1.18	0.87	0.38	0.63	1.18	0.26	1.19	0.76	0.31	0.79	1.06	0.48
Control Delay	148.6	20.9	5.6	81.3	121.7	16.8	151.3	43.4	19.2	76.0	89.4	27.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	148.6	20.9	5.6	81.3	121.7	16.8	151.3	43.4	19.2	76.0	89.4	27.9
Queue Length 50th (ft)	~268	419	24	28	~711	47	~245	295	51	80	~416	178
Queue Length 95th (ft)	m#313	m434	m28	#62	#806	100	#355	370	110	#139	#547	263
Internal Link Dist (ft)		5232			5217			2158			9554	
Turn Bay Length (ft)	235		135	275		155	190		105	240		270
Base Capacity (vph)	486	2399	823	114	1780	598	429	1062	527	257	885	673
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.18	0.87	0.38	0.63	1.18	0.26	1.19	0.76	0.31	0.79	1.06	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	343	1675	100	22	1575	287	236	420	155	184	990	198
v/c Ratio	0.90	0.74	0.13	0.14	0.96	0.46	0.88	0.40	0.28	0.57	0.90	0.34
Control Delay	67.7	24.2	6.7	43.6	45.5	12.0	74.7	27.0	8.9	43.7	33.6	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.7	24.2	6.7	43.6	45.5	12.0	74.7	27.0	8.9	43.7	33.6	4.9
Queue Length 50th (ft)	101	260	7	6	319	46	70	101	14	38	304	25
Queue Length 95th (ft)	#179	375	39	18	#424	115	#137	144	60	m69	#405	m61
Internal Link Dist (ft)		5217			3441			2557			10976	
Turn Bay Length (ft)	240		155	210		125	240		75	185		115
Base Capacity (vph)	381	2249	743	153	1639	629	267	1040	552	343	1101	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.74	0.13	0.14	0.96	0.46	0.88	0.40	0.28	0.54	0.90	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	1115	88	616	926	60	596	442	431
v/c Ratio	1.01	0.23	1.01	0.30	0.46	0.80	1.01	0.48
Control Delay	71.6	20.9	75.2	11.1	60.3	13.8	94.2	25.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.6	20.9	75.2	11.1	60.3	13.8	94.2	25.5
Queue Length 50th (ft)	~292	25	~439	109	41	12	~165	89
Queue Length 95th (ft)	#394	68	#677	134	85	#144	#271	140
Internal Link Dist (ft)	14973			1158				429
Turn Bay Length (ft)		100	575		100			
Base Capacity (vph)	1109	381	611	3051	145	742	437	898
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.23	1.01	0.30	0.41	0.80	1.01	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	361	1284	1630	418	260	411	557	230	500
v/c Ratio	0.96	0.54	1.00	0.68	0.62	0.93	0.71	0.78	1.02
Control Delay	81.7	19.8	57.4	23.9	40.7	66.1	32.8	59.4	66.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.7	19.8	57.4	23.9	40.7	66.1	32.8	59.4	66.9
Queue Length 50th (ft)	120	205	~379	140	154	269	147	73	~178
Queue Length 95th (ft)	#209	248	#494	252	245	#462	214	#133	#381
Internal Link Dist (ft)		1158	1045			380			
Turn Bay Length (ft)	320			85	240			210	
Base Capacity (vph)	378	2390	1627	617	420	443	782	296	488
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.54	1.00	0.68	0.62	0.93	0.71	0.78	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

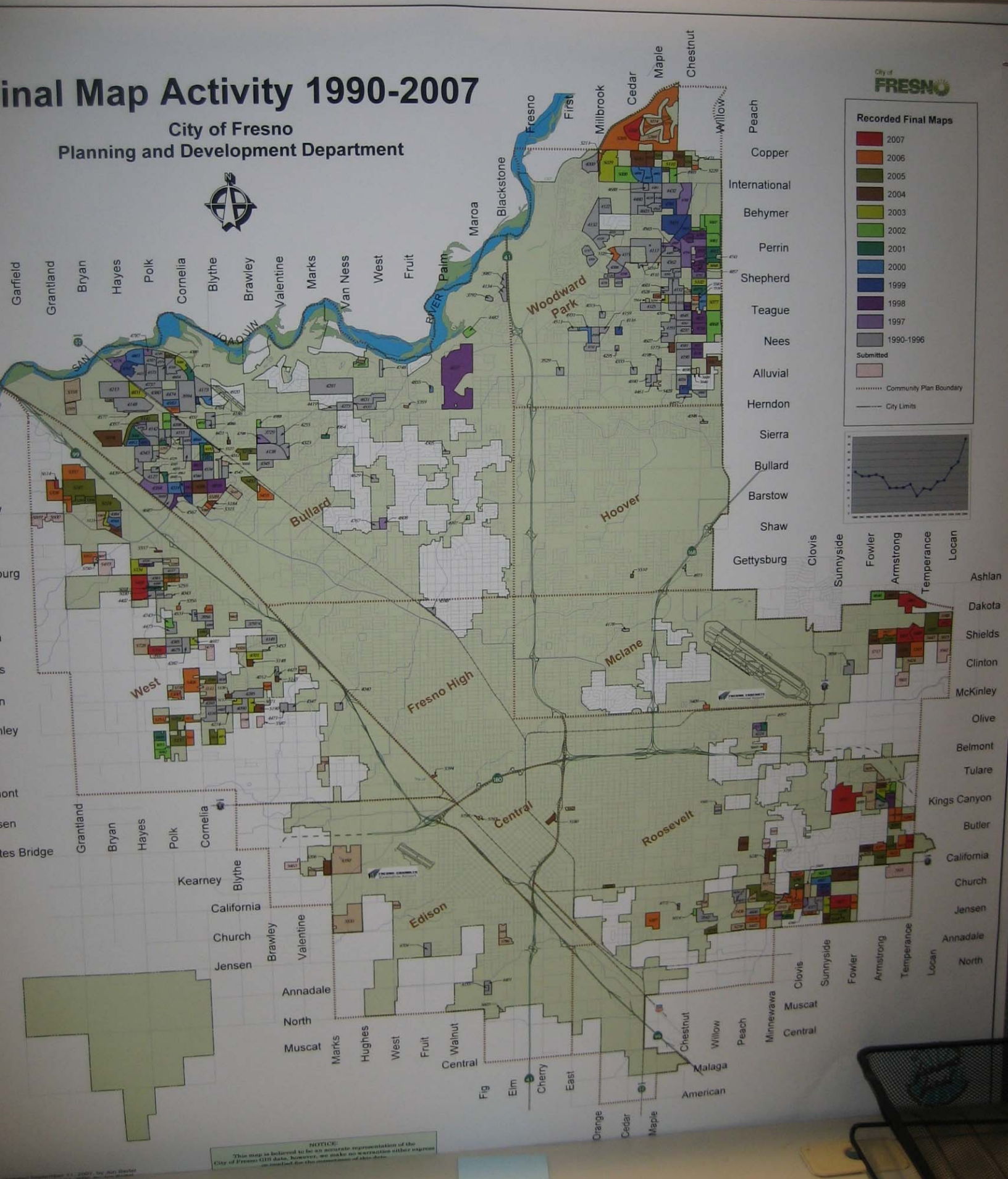
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX I

CUMULATIVE PROJECTS TRIP DATA

inal Map Activity 1990-2007

City of Fresno
Planning and Development Department



Neelam D. Sharma

From: Dennis Pascua
Sent: Wednesday, April 02, 2008 11:36 AM
To: Neelam D. Sharma
Subject: FW: Latest Version

Attachments: Missing Cumulative Projects Data.xls

Missing Cumulative Projects Da...

Dennis M. Pascua, PTP
DKS Associates
(949) 863-0041
Please consider the environment before printing this e-mail

-----Original Message-----
From: Mike Sanchez [mailto:Mike.Sanchez@fresno.gov]
Sent: Thursday, December 13, 2007 8:56 AM
To: Dennis Pascua; Sandy Sanchez
Cc: JoAnn Hadfield; JThomas@planningcenter.com
Subject: Fwd: Latest Version

Attached are the updated list for the data being requested.

Let me know if you need further assistance

Mike Sanchez
Planning Manager
Planning and Development Department
mike.sanchez@fresno.gov
559.621.8040 (Phone)
559.488.1020 (FAX)

>>> Rick Duncan 12/13/2007 8:05 AM >>>

Final Tract Maps

		DU	TYPE	Submittal Date	Record Date	Tentative Map #	Phase	Additional Phases	# of Lots
1	4422	7	SFR						
2	4764			2/19/1999	7/14/1999	4764	1	YES	2
3	5098	120	SFR						
4	5141	144	SFR						
5	5184	24	SFR						
6	5224	189	SFR						
7	5278	57	SFR						
8	5315	21	SFR						
9	5338	123	SFR						
10	5357	117	SFR						
11	5358	231	SFR						
		144	CONDO						
12	5363	105	SFR						
13	5369			no file					
14	5388	42	SFR						
15	5390			no file					
16	5395			11/8/2004	9/23/2005	5247	2	YES	52
17	5396			11/8/2004	6/29/2005	5247	3	YES	47
18	5433	170	SFR						
19	5455	203	SFR						
20	5527	12	SFR						
21	5555	35	SFR						
22	5595	75	SFR						
23	5600	283	SFR						
24	5614			11/14/2005	2/15/2007	5338	2	NO	14
25	5649	141	SFR						
26	5666	36	SFR						
27	5755	118	CONDO						
28	4799			no file					
29	4983	58	SFR						
30	5137	131	SFR						
31	5145	16	SFR						
32	5148	35	SFR						
33	5169	113	SFR						
34	5190			5/30/2003	3/9/2004	5071	2	NO	55
35	5251	90	SFR						
36	5284	179	SFR						
37	5300	150	SFR						
38	5316	252	SFR						
39	5321	86	SFR						
40	5326	68	SFR						
41	5356	9	SFR						
42	5379	20	SFR						
43	5400	231	SFR						
44	5406	257	SFR						
45	5453	7	SFR						
46	5487			no file					
47	5489	78	SFR						
48	5512	135	SFR						
49	5537	48	SFR						
50	5587			11/18/2005	3/15/2006	PC Res No 12436	R-05-57		
		Approved by CC: 4-18-06, approved by PC: 5-15-06							
		52-lot single family residential subdivision on approximately 12.87 acres of property							
51	5590	96	SFR						
52	5598	80	SFR						
53	5598	80	SFR						
54	5599	61	SFR						
55	5728			no file					
56	5770			no file					

Wal-Mart List

	TYPE	Application	Size (TSF/Emp/Ac)		Planners
1	SPR	S-03-205	Approved 12-31-03	C-M 16,640 sf Office	MSD
2	SPR	S-04-251	Approved 13-30-04, Appealed	M-1 tow truck and vehicle impound (transit storage yard) business	SAC
3	SPR	S-05-347			
4	LD09	C-06-194	Approved 2-09-06, put on hold 9-17-07- Applicant had been told to verify the Lot area after Caltrans and City of Fresno Dedications	C-6 1440 sf temp modular building on .64 acres	CP
5	SPR	S-07-012			
6	LD06	C-03-007			
7	LD06	C-04-062	Attached with R-04-024,	From R-P/UGM/cz to C-P/UGM/cz, 3.72 acre parcel, two 3-story senior citizen affordable housing; phase one consisting of 80 units and phase two with 68 units	DAS
8	SPR	S-07-038			
9	LD06	C-03-170			
10	SPR	S-06-275			
11	LD06	C-05-253	Approved 10-31-05	MODIFICATION TO THE REAR YARD SETBACK REQUIREMENT AND LOT COVERAGE FOR TENTATIVE TRACT NO. 5302/UGM	JVP
12	SPR	S-07-048			
13	LD06	C-07-135			
14	LD06	C-03-086	Approved 9-17-03	M-1/ugm 6400 sf auto body shop	Ed Paz- File Being Scanned
15	LD06	C-04-246			
16	LD06	C-04-316			
17	SP04	S-04-116			
18	SPR	S-04-547			
19	LD06	C-06-110			
20	LD06	C-06-090	Approved 9-06-06	M-1/BA-20/UGM/cz , 5 buildings = 44762 sf total & self storage yard, 15 acres	PB
21	LD06	C-07-157			
22	SPR	S-03-130			
23	LD06	C-03-067			
24	LD06	C-05-287			
25	SP04	S-05-581			
26	SPR	S-05-160			
27	SPR	S-05-205			
28	SP01	S-06-164	Approved 9-14-2006	R-1-c, 1896 sf & 1545 sf residences on .69 acres	JMZ
29	SPR	S-06-216			
30	LD06	C-07-096			
31	SPR	S-07-011			
32	SPR	S-03-377	Approved 2-12-04	M-1, 12000 sf storage & office building	Ed Paz- File Being Scanned
33	SPR	S-05-462			
34	SPR	S-05-307			
35	SPR	S-05-306			
36	SPR	S-06-237			
37	SPR	S-06-228			
38	PLA	A-07-020			

Projects missing information.

Appendix G: Final Cumulative Project List

TTM/Applic	Land Use	SIZE	
4422	Single Family Detached Housing	7	DU
4764	XXX	0	DU
5098	Single Family Detached Housing	120	DU
5184	Single Family Detached Housing	24	DU
5224	Single Family Detached Housing	189	DU
5278	Single Family Detached Housing	57	DU
5315	Single Family Detached Housing	21	DU
5338	Single Family Detached Housing	123	DU
5357	Single Family Detached Housing	117	DU
5358	Single Family Detached Housing	231	DU
5358	Residential Condominium	144	DU
5363	Single Family Detached Housing	105	DU
5388	Single Family Detached Housing	42	DU
5433	Single Family Detached Housing	170	DU
5455	Single Family Detached Housing	203	DU
5527	Single Family Detached Housing	12	DU
5555	Single Family Detached Housing	35	DU
5595	Single Family Detached Housing	75	DU
5600	Single Family Detached Housing	283	DU
5614	Single Family Detached Housing	14	DU
5649	Single Family Detached Housing	141	DU
5666	Single Family Detached Housing	36	DU
5755	Residential Condominium	118	DU
4983	Single Family Detached Housing	58	DU
5148	Single Family Detached Housing	35	DU
5316	Single Family Detached Housing	252	DU
5326	Single Family Detached Housing	68	DU
5356	Single Family Detached Housing	9	DU
5379	Single Family Detached Housing	20	DU
5400	Single Family Detached Housing	231	DU
5453	Single Family Detached Housing	7	DU
5489	Single Family Detached Housing	78	DU
5537	Single Family Detached Housing	48	DU
5599	Single Family Detached Housing	61	DU
S-03-205	General Office	16.640	TSF
S-04-251	General Light Industrial by Acres	12.340	ACRES
S-05-347	General Office	85.000	TSF
C-06-194	New Car Sales	1.440	TSF
S-07-012	Warehousing	24.060	TSF
C-03-007	Apartment	296	DU
C-04-062	Senior Adult Housing Attached	68	DU
S-07-038	General Light Industrial	14.822	TSF
C-03-170	Retail	96.000	TSF
S-06-275	General Office	44.900	TSF
S-07-048	General Office	40.500	TSF
C-07-135	Free Standing Discount Super Store	208.770	TSF
C-07-135	Fast-Food Restaurant with Drive Through Window	6.500	TSF
C-07-135	Fast-Food Restaurant without Drive Through Window	3.000	TSF
C-03-086	New Car Sales	6.400	TSF
C-04-246	Single Family Detached Housing	141	DU
C-04-316	Fast-Food Restaurant with Drive Through Window	9.500	TSF
C-06-090	General Light Industrial	44.762	TSF
C-07-157	Mini-Warehousing	117.419	TSF
C-03-067	Apartment	272	DU
S-05-581	Apartment	6	DU
S-05-160	Retail	24.000	TSF
S-05-205	General Office	15.600	TSF
S-06-164	Single Family Detached Housing	1	DU
S-06-216	Fast-Food Restaurant without Drive Through Window	2.780	TSF
S-06-216	Convience Market	2.100	TSF
C-07-096	Hotel	72	RMS
S-07-011	Retail	12.892	TSF
S-03-377	General Office	12.000	TSF
S-05-462	Warehousing	8.000	TSF
S-05-307	Apartment	3	DU
S-05-306	Apartment	3	DU
S-06-237	Warehousing	24.000	TSF
S-06-228	General Office	27.600	TSF
A-07-020	Apartment	243	DU
A-07-021	Retail	36.000	TSF
4764	Retail	198.111	TSF

APPENDIX J

FRESNO COG TRAVEL MODEL DATA

FULL SIZE MODEL VOLUME PLOTS(See plots at City Public Works Counter)

- Cumulative Project Group 1
- Cumulative Project Group 2
- Cumulative Project Group 3
- Cumulative Project Group 4
- Cumulative Project Group 5
- Cumulative Project Group 6
- Cumulative Project Group 7
- Cumulative Project Group 8
- Cumulative Project Group 9
- Cumulative Project Group 10
- Cumulative Project Group 11
- Cumulative Project Group 12
- Cumulative Project Group 13
- Cumulative Project Group 14
- Cumulative Project Group 15
- Cumulative Project Group 16
- Cumulative Project Group 17
- Cumulative Project Group 18
- Cumulative Project Group 19
- Cumulative Project Group 20
- Cumulative Project Group 21
- Cumulative Project Group 22
- Cumulative Project Group 23
- Cumulative Project Group 24
- Cumulative Project Group 25
- Cumulative Project Group 26
- 2017 Baseline Loaded Network
- 2019 Baseline Loaded Network
- 2025 Baseline Loaded Network
- 2017 Baseline plus Project Phases 1-4 Loaded Network
- 2019 Baseline plus Project Phases 1-5 Loaded Network
- 2025 Baseline plus Project Phases 1-5 Loaded Network

			Post Processed Turning Movement Volumes						Raw Model Turning Movement Volumes					
I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2010 Ambient Growth Volume AM	2010 Ambient Growth Volume PM	2010 No Project Volume AM	2010 No Project Volume PM	2007 Existing AM	2007 Existing PM	2010 Baseline Volumes AM	2010 Baseline Volumes PM	2010 W/Project Volumes AM	2010 W/Project Volumes PM
1	Parkway & Herndon	SBR	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	SBT	29	32	32	35	32	35	2	4	2	6	0	0
1	Parkway & Herndon	SBL	94	86	105	95	105	95	5	12	3	6	0	0
1	Parkway & Herndon	WBR	138	120	154	133	154	133	8	49	5	14	0	0
1	Parkway & Herndon	WBT	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	WBL	554	452	618	500	1,054	1,055	680	926	819	1,233	0	0
1	Parkway & Herndon	NBR	209	123	233	136	478	400	444	533	620	720	0	0
1	Parkway & Herndon	NBT	11	13	12	14	12	14	0	1	1	2	0	0
1	Parkway & Herndon	NBL	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	EBR	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	EBT	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	EBL	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	SBR	31	55	35	61	39	74	42	74	53	93	0	0
2	SR-99 SB Ramps & Herndon	SBT	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	SBL	16	36	18	40	26	45	172	153	272	208	0	0
2	SR-99 SB Ramps & Herndon	WBR	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	WBT	765	582	853	644	1,285	1,185	646	900	770	1,154	0	0
2	SR-99 SB Ramps & Herndon	WBL	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	NBR	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	NBT	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	NBL	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	EBR	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	EBT	304	207	339	229	585	493	448	545	623	726	0	0
2	SR-99 SB Ramps & Herndon	EBL	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	SBR	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	SBT	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	SBL	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	WBR	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	WBT	727	524	811	580	1,234	1,107	584	805	699	1,088	0	0
3	SR-99 NB Ramps & Herndon	WBL	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	NBR	337	533	376	590	654	891	227	417	287	451	0	0
3	SR-99 NB Ramps & Herndon	NBT	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	NBL	42	65	47	72	55	85	62	95	71	66	0	0
3	SR-99 NB Ramps & Herndon	EBR	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	EBT	317	251	354	278	604	545	620	698	895	934	0	0
3	SR-99 NB Ramps & Herndon	EBL	0	0	0	0	0	0	0	0	0	0	0	0
4	Golden State & Herndon	SBR	126	60	141	66	246	127	2	6	2	6	0	0
4	Golden State & Herndon	SBT	49	146	55	162	114	200	49	74	139	47	0	0
4	Golden State & Herndon	SBL	205	387	229	428	361	537	501	623	484	635	0	0
4	Golden State & Herndon	WBR	435	299	485	331	615	442	508	653	537	664	0	0
4	Golden State & Herndon	WBT	569	413	635	457	945	887	542	688	648	899	0	0
4	Golden State & Herndon	WBL	40	47	45	52	114	112	53	77	68	72	0	0
4	Golden State & Herndon	NBR	45	81	50	90	79	153	20	72	22	79	0	0
4	Golden State & Herndon	NBT	150	140	167	155	200	193	45	67	45	145	0	0
4	Golden State & Herndon	NBL	50	41	56	45	62	82	41	111	49	183	0	0
4	Golden State & Herndon	EBR	42	49	47	54	66	75	131	112	118	244	0	0
4	Golden State & Herndon	EBT	552	620	616	686	985	1,148	656	944	988	1,070	0	0
4	Golden State & Herndon	EBL	45	75	50	83	190	153	60	60	76	71	0	0
5	Weber & Herndon	SBR	0	0	0	0	0	5	32	91	40	106	0	0
5	Weber & Herndon	SBT	0	0	0	0	0	0	0	0	0	0	0	0
5	Weber & Herndon	SBL	0	0	0	0	0	0	0	0	0	0	0	0
5	Weber & Herndon	WBR	0	0	0	0	0	0	0	0	0	0	0	0
5	Weber & Herndon	WBT	1,068	753	1,191	833	1,714	1,439	1,059	1,312	1,196	1,513	0	0
5	Weber & Herndon	WBL	3	1	3	1	3	1	5	11	5	14	0	0
5	Weber & Herndon	NBR	2	2	2	2	2	2	7	10	10	11	0	0
5	Weber & Herndon	NBT	0	0	0	0	0	0	0	0	0	0	0	0
5	Weber & Herndon	NBL	1	1	1	1	1	1	13	15	16	16	0	0
5	Weber & Herndon	EBR	0	3	0	3	0	3	8	19	8	23	0	0
5	Weber & Herndon	EBT	787	1,089	878	1,205	1,403	1,838	1,104	1,552	1,403	1,687	0	0
5	Weber & Herndon	EBL	0	0	0	0	2	2	66	67	83	75	0	0
6	Bryan & Herndon	SBR	0	0	0	0	312	322	0	0	164	256	0	0
6	Bryan & Herndon	SBT	0	0	0	0	21	10	0	0	2	6	0	0
6	Bryan & Herndon	SBL	0	0	0	0	206	224	0	0	11	23	0	0
6	Bryan & Herndon	WBR	0	0	0	0	223	188	0	0	41	27	0	0
6	Bryan & Herndon	WBT	925	714	1,032	790	1,353	1,311	1,033	1,274	992	1,251	0	0
6	Bryan & Herndon	WBL	53	2	59	2	59	2	7	16	8	22	0	0
6	Bryan & Herndon	NBR	138	3	154	3	154	3	14	10	18	12	0	0
6	Bryan & Herndon	NBT	0	0	0	0	5	11	0	0	3	5	0	0
6	Bryan & Herndon	NBL	256	69	286	76	299	88	56	40	74	52	0	0
6	Bryan & Herndon	EBR	244	89	272	99	287	118	32	66	44	85	0	0
6	Bryan & Herndon	EBT	506	951	564	1,053	964	1,507	1,070	1,529	1,203	1,357	0	0
6	Bryan & Herndon	EBL	0	0	0	0	310	310	0	0	177	267	0	0
7	Hayes & Herndon	SBR	129	43	144	48	144	48	130	148	13	12	0	0
7	Hayes & Herndon	SBT	114	9	127	10	129	12	2	4	3	8	0	0
7	Hayes & Herndon	SBL	5	5	6	6	21	18	8	19	9	24	0	0
7	Hayes & Herndon	WBR	5	9	6	10	12	27	22	14	15	18	0	0
7	Hayes & Herndon	WBT	793	659	884	729	1,212	1,238	909	1,142	980	1239	0	0
7	Hayes & Herndon	WBL	145	71	162	79	162	81	34	59	45	84	0	0
7	Hayes & Herndon	NBR	101	47	113	52	114	52	48	48	68	65	0	0
7	Hayes & Herndon	NBT	28	10	31	11	32	13	2	3	3	6	0	0
7	Hayes & Herndon	NBL	37	13	41	14	54	27	0	0	49	50	0	0
7	Hayes & Herndon	EBR	7	22	8	24	9	34	0	0	41	76	0	0
7	Hayes & Herndon	EBT	563	829	628	918	1,026	1,375	980	1,349	1,185	1300	0	0
7	Hayes & Herndon	EBL	60	111	67	123	67	123	104	190	7	17	0	0
8	Veterans & Herndon	SBR	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	SBT	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	SBL	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	WBR	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	WBT	943	739	1,052	818	1,388	1,355	965	1,214	1,040	1340	0	0
8	Veterans & Herndon	WBL	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	NBR	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	NBT	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	NBL	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	EBR	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	EBT	722	881	805	975	1,224	1,448	1,036	1,416	1,263	1389	0	0
8	Veterans & Herndon	EBL	0	0	0	0	0	0	0	0	0	0	0	0
9	Polk & Herndon	SBR	24	24	27	27	27	27	0	0	0	0	0	0
9	Polk & Herndon	SBT	51	60	57	66	67	78	22	48	41	90	0	0
9	Polk & Herndon	SBL	117	138	130	153	171	210	172	209	190	303	0	0
9	Polk & Herndon	WBR	66	134	74	148	99	202	121	216	147	266	0	0
9	Polk & Herndon	WBT	792	648	883	717	1,205	1,198	924	1,170	1,023	1,303	0	0
9	Polk & Herndon	WBL	85	287	95	318	110	377	205	284	243	308	0	0
9	Polk & Herndon	NBR	261	196	291	217	308	262	217	232	213	250	0	0
9	Polk & Herndon	NBT	25	59	28	65	32	84	15	59	20	73	0	0

I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2010 Ambient Growth Volume AM	2010 Ambient Growth Volume PM	2010 No Project Volume AM	2010 No Project Volume PM	2007 Existing AM	2007 Existing PM	2010 Baseline Volumes AM	2010 Baseline Volumes PM	2010 W/Project Volumes AM	2010 W/Project Volumes PM
9	Polk & Herndon	NBL	108	64	120	71	134	136	41	44	17	38	0	0
9	Polk & Herndon	EBR	78	88	87	97	104	143	30	54	14	50	0	0
9	Polk & Herndon	EBT	638	777	712	860	1,113	1,286	1,006	1,361	1,248	1,338	0	0
9	Polk & Herndon	EBL	6	8	7	9	7	9	0	0	0	0	0	0
10	Milburn & Herndon	SBR	204	133	228	147	273	330	81	65	68	66	0	0
10	Milburn & Herndon	SBT	301	214	336	237	397	494	193	117	195	112	0	0
10	Milburn & Herndon	SBL	359	151	400	167	487	571	232	79	277	176	0	0
10	Milburn & Herndon	WBR	108	204	120	226	268	523	114	119	127	266	0	0
10	Milburn & Herndon	WBT	611	802	681	888	970	1,258	1,116	1,374	1,287	1,734	0	0
10	Milburn & Herndon	WBL	81	90	90	100	90	102	51	115	63	144	0	0
10	Milburn & Herndon	NBR	131	58	146	64	147	65	96	89	109	101	0	0
10	Milburn & Herndon	NBT	168	263	187	291	286	547	79	214	87	206	0	0
10	Milburn & Herndon	NBL	114	137	127	152	150	173	53	230	58	76	0	0
10	Milburn & Herndon	EBR	130	122	145	135	169	167	185	260	52	82	0	0
10	Milburn & Herndon	EBT	723	736	806	815	1,186	1,138	1,173	1,400	1,554	1,696	0	0
10	Milburn & Herndon	EBL	179	260	200	288	255	458	37	142	45	113	0	0
11	Blythe & Herndon	SBR	1	9	1	10	1	10	8	26	0	30	0	0
11	Blythe & Herndon	SBT	0	1	0	1	0	1	0	0	0	0	0	0
11	Blythe & Herndon	SBL	50	60	56	66	56	66	0	0	0	0	0	0
11	Blythe & Herndon	WBR	50	60	56	66	56	66	0	0	0	0	0	0
11	Blythe & Herndon	WBT	800	1,104	892	1,222	1,330	1,892	1,273	1,582	1,477	2,114	0	0
11	Blythe & Herndon	WBL	2	4	2	4	2	4	0	0	0	0	0	0
11	Blythe & Herndon	NBR	0	4	0	4	0	4	0	0	0	0	0	0
11	Blythe & Herndon	NBT	1	0	1	0	1	0	0	0	0	0	0	0
11	Blythe & Herndon	NBL	0	2	0	2	0	2	0	0	0	0	0	0
11	Blythe & Herndon	EBR	1	1	1	1	1	1	0	0	0	0	0	0
11	Blythe & Herndon	EBT	1,222	940	1,363	1,040	1,827	1,767	1,487	1,543	1,921	1,948	0	0
11	Blythe & Herndon	EBL	0	1	0	1	0	1	14	24	18	24	0	0
12	Brawley & Herndon	SBR	130	151	145	167	150	190	20	36	24	45	0	0
12	Brawley & Herndon	SBT	561	308	626	341	631	364	74	92	72	77	0	0
12	Brawley & Herndon	SBL	180	309	201	342	201	342	33	19	43	23	0	0
12	Brawley & Herndon	WBR	56	159	62	176	62	176	17	33	19	47	0	0
12	Brawley & Herndon	WBT	833	1,472	929	1,629	1,291	2,135	1,173	1,501	1,351	1,907	0	0
12	Brawley & Herndon	WBL	103	184	115	204	219	357	369	394	417	518	0	0
12	Brawley & Herndon	NBR	57	132	64	146	197	294	362	366	439	536	0	0
12	Brawley & Herndon	NBT	161	611	180	676	200	689	53	114	50	101	0	0
12	Brawley & Herndon	NBL	148	240	165	266	239	453	120	222	141	285	0	0
12	Brawley & Herndon	EBR	55	127	61	141	145	387	151	163	261	299	0	0
12	Brawley & Herndon	EBT	920	1,329	1,026	1,471	1,380	1,979	1,367	1,477	1,692	1,699	0	0
12	Brawley & Herndon	EBL	92	262	103	290	112	301	23	35	26	40	0	0
13	Marks & Herndon	SBR	124	288	138	319	150	342	50	54	58	80	0	0
13	Marks & Herndon	SBT	141	204	157	226	159	231	115	198	135	208	0	0
13	Marks & Herndon	SBL	199	251	222	278	222	278	144	187	125	174	0	0
13	Marks & Herndon	WBR	222	352	248	390	248	390	154	141	165	139	0	0
13	Marks & Herndon	WBT	815	1,341	909	1,484	1,338	2,002	1,562	1,963	1,775	2363	0	0
13	Marks & Herndon	WBL	204	300	228	332	228	332	11	111	0	31	0	0
13	Marks & Herndon	NBR	236	228	263	252	263	254	37	64	32	24	0	0
13	Marks & Herndon	NBT	119	219	133	242	137	246	138	215	143	213	0	0
13	Marks & Herndon	NBL	102	107	114	118	142	191	29	36	50	165	0	0
13	Marks & Herndon	EBR	49	74	55	82	90	124	19	35	123	144	0	0
13	Marks & Herndon	EBT	1,562	1,043	1,742	1,154	2,176	1,749	1,825	1,877	2,109	2146	0	0
13	Marks & Herndon	EBL	100	183	112	203	119	221	46	58	63	81	0	0
14	West & Herndon	SBR	42	143	47	158	48	161	33	42	36	36	0	0
14	West & Herndon	SBT	92	136	103	151	103	151	108	161	172	181	0	0
14	West & Herndon	SBL	224	193	250	214	250	214	164	141	165	163	0	0
14	West & Herndon	WBR	117	278	130	308	130	308	57	201	79	195	0	0
14	West & Herndon	WBT	1,330	1,995	1,483	2,208	1,890	2,684	2,012	2,535	2,186	2659	0	0
14	West & Herndon	WBL	296	266	330	294	335	305	364	240	253	303	0	0
14	West & Herndon	NBR	265	414	296	458	306	461	255	483	305	236	0	0
14	West & Herndon	NBT	69	129	77	143	77	143	50	234	56	275	0	0
14	West & Herndon	NBL	76	119	85	132	91	163	48	98	51	154	0	0
14	West & Herndon	EBR	133	129	148	143	176	175	56	103	187	82	0	0
14	West & Herndon	EBT	1,971	1,363	2,198	1,509	2,621	2,040	2,358	2,315	2,414	2461	0	0
14	West & Herndon	EBL	55	87	61	96	62	99	24	43	25	45	0	0
15	Palm & Herndon	SBR	652	853	727	944	783	1,044	582	716	601	850	0	0
15	Palm & Herndon	SBT	641	690	715	764	728	818	326	658	491	808	0	0
15	Palm & Herndon	SBL	155	279	173	309	173	309	159	104	147	120	0	0
15	Palm & Herndon	WBR	336	196	375	217	375	217	89	168	91	173	0	0
15	Palm & Herndon	WBT	857	1,582	956	1,751	1,284	2,104	1,981	2,566	2,052	2,482	0	0
15	Palm & Herndon	WBL	220	248	245	274	247	276	182	297	187	320	0	0
15	Palm & Herndon	NBR	196	162	219	179	219	180	249	249	187	294	0	0
15	Palm & Herndon	NBT	674	757	752	838	800	882	415	766	620	831	0	0
15	Palm & Herndon	NBL	132	140	147	155	153	172	47	76	38	82	0	0
15	Palm & Herndon	EBR	95	50	106	55	108	66	75	47	54	67	0	0
15	Palm & Herndon	EBT	1,616	1,136	1,802	1,257	2,148	1,669	2,232	2,522	2,522	2,303	0	0
15	Palm & Herndon	EBL	792	766	883	848	943	933	707	607	491	795	0	0
16	Blackstone & Herndon	SBR	158	368	176	407	223	475	567	825	548	737	0	0
16	Blackstone & Herndon	SBT	342	705	381	780	383	798	554	862	737	978	0	0
16	Blackstone & Herndon	SBL	196	259	219	287	219	287	321	650	318	612	0	0
16	Blackstone & Herndon	WBR	213	236	238	261	238	261	468	299	436	277	0	0
16	Blackstone & Herndon	WBT	1,232	1,194	1,374	1,321	1,583	1,563	1,664	2,026	1,717	2,124	0	0
16	Blackstone & Herndon	WBL	98	158	109	175	109	179	114	288	124	334	0	0
16	Blackstone & Herndon	NBR	108	87	120	96	123	97	215	374	215	305	0	0
16	Blackstone & Herndon	NBT	219	525	244	581	255	613	492	1,113	569	1,391	0	0
16	Blackstone & Herndon	NBL	92	196	103	217	126	219	137	119	143	99	0	0
16	Blackstone & Herndon	EBR	124	323	138	357	139	358	29	38	38	81	0	0
16	Blackstone & Herndon	EBT	1,560	1,299	1,740	1,438	1,953	1,733	2,131	2,179	2,177	2,031	0	0
16	Blackstone & Herndon	EBL	146	151	163	167	229	250	450	707	611	571	0	0
17	Grantland & Parkway/Ramp	SBR	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	SBT	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	SBL	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	WBR	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	WBT	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	WBL	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	NBR	116	29	129	32	183	62	126	120	135	131	0	0
17	Grantland & Parkway/Ramp	NBT	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	NBL	263	162	293	179	540	443	444	534	621	722	0	0
17	Grantland & Parkway/Ramp	EBR	174	231	194	256	365	571	400	635	514	882	0	0
17	Grantland & Parkway/Ramp	EBT	499	290	557	321	822	559	281	295	306	358	0	0
17	Grantland & Parkway/Ramp	EBL	0	0	0	0	0	0	0	0	0	0	0	0
18	Bryan & Palo Alto	SBR	0	0	0	0	0	0	0	0	0	0	0	0
18	Bryan & Palo Alto	SBT	10	21	11	23	11	23	5	22	8	30	0	0
18	Bryan & Palo Alto	SBL	296	59	330	65	330	65	0	0	0	0	0	0
18	Bryan & Palo Alto	WBR	356	70	397	77	397	77	0	0	0	0	0	0
18	Bryan & Palo Alto	WBT	0	0	0	0	0	0	0	0	0	0	0	0
18	Bryan & Palo Alto	WBL	2	2	2	2	2	2	3	11	4	16	0	0

I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2010 Ambient Growth Volume AM	2010 Ambient Growth Volume PM	2010 No Project Volume AM	2010 No Project Volume PM	2007 Existing AM	2007 Existing PM	2010 Baseline Volumes AM	2010 Baseline Volumes PM	2010 W/Project Volumes AM	2010 W/Project Volumes PM
18	Bryan & Palo Alto	NBR	1	2	1	2	1	2	9	5	13	7	0	0
18	Bryan & Palo Alto	NBT	45	8	50	9	50	9	21	8	29	11	0	0
18	Bryan & Palo Alto	NBL	0	0	0	0	0	0	0	0	0	0	0	0
18	Bryan & Palo Alto	EBR	0	0	0	0	0	0	0	0	0	0	0	0
18	Bryan & Palo Alto	EBT	0	0	0	0	0	0	0	0	0	0	0	0
18	Bryan & Palo Alto	EBL	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	SBR	256	80	286	89	286	89	3	11	4	15	0	0
19	Hayes & Palo Alto	SBT	7	34	8	38	11	49	0	0	43	83	0	0
19	Hayes & Palo Alto	SBL	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	WBR	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	WBT	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	WBL	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	NBR	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	NBT	25	12	28	13	41	27	0	0	51	54	0	0
19	Hayes & Palo Alto	NBL	167	41	186	45	186	45	0	0	0	1	0	0
19	Hayes & Palo Alto	EBR	127	50	142	55	142	55	0	0	1	1	0	0
19	Hayes & Palo Alto	EBT	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	EBL	157	81	175	90	175	90	9	5	13	7	0	0
20	Hayes & Veterans	SBR	0	0	0	0	0	0	0	0	0	0	0	0
20	Hayes & Veterans	SBT	0	0	0	0	3	11	0	0	44	83	0	0
20	Hayes & Veterans	SBL	0	0	0	0	0	0	0	0	0	0	0	0
20	Hayes & Veterans	WBR	0	0	0	0	0	0	0	0	0	0	0	0
20	Hayes & Veterans	WBT	0	0	0	0	0	0	0	0	0	0	0	0
20	Hayes & Veterans	WBL	0	0	0	0	0	0	0	0	0	0	0	0
20	Hayes & Veterans	NBR	0	0	0	0	0	0	0	0	0	0	0	0
20	Hayes & Veterans	NBT	0	0	0	0	13	14	0	0	52	55	0	0
20	Hayes & Veterans	NBL	0	0	0	0	0	0	0	0	0	0	0	0
20	Hayes & Veterans	EBR	0	0	0	0	0	0	0	0	0	0	0	0
20	Hayes & Veterans	EBT	0	0	0	0	0	0	0	0	0	0	0	0
20	Hayes & Veterans	EBL	0	0	0	0	0	0	0	0	0	0	0	0
21	Bryan & Veterans	SBR	0	0	0	0	0	0	0	0	0	0	0	0
21	Bryan & Veterans	SBT	0	0	0	0	0	0	0	0	0	0	0	0
21	Bryan & Veterans	SBL	0	0	0	0	0	0	0	0	0	0	0	0
21	Bryan & Veterans	WBR	0	0	0	0	0	0	0	0	0	0	0	0
21	Bryan & Veterans	WBT	0	0	0	0	0	0	0	0	0	0	0	0
21	Bryan & Veterans	WBL	0	0	0	0	0	0	0	0	0	0	0	0
21	Bryan & Veterans	NBR	0	0	0	0	0	0	0	0	0	0	0	0
21	Bryan & Veterans	NBT	0	0	0	0	0	0	0	0	0	0	0	0
21	Bryan & Veterans	NBL	0	0	0	0	0	0	0	0	0	0	0	0
21	Bryan & Veterans	EBR	0	0	0	0	0	0	0	0	0	0	0	0
21	Bryan & Veterans	EBT	0	0	0	0	0	0	0	0	0	0	0	0
21	Bryan & Veterans	EBL	0	0	0	0	0	0	0	0	0	0	0	0
22	Bryan & Sierra	SBR	0	0	0	0	0	0	0	0	0	0	0	0
22	Bryan & Sierra	SBT	0	0	0	0	0	0	0	0	0	0	0	0
22	Bryan & Sierra	SBL	0	0	0	0	0	0	0	0	0	0	0	0
22	Bryan & Sierra	WBR	0	0	0	0	0	0	0	0	0	0	0	0
22	Bryan & Sierra	WBT	0	0	0	0	0	0	0	0	0	0	0	0
22	Bryan & Sierra	WBL	0	0	0	0	0	0	0	0	0	0	0	0
22	Bryan & Sierra	NBR	0	0	0	0	0	0	0	0	0	0	0	0
22	Bryan & Sierra	NBT	0	0	0	0	0	0	0	0	0	0	0	0
22	Bryan & Sierra	NBL	0	0	0	0	0	0	0	0	0	0	0	0
22	Bryan & Sierra	EBR	0	0	0	0	0	0	0	0	0	0	0	0
22	Bryan & Sierra	EBT	0	0	0	0	0	0	0	0	0	0	0	0
22	Bryan & Sierra	EBL	0	0	0	0	0	0	0	0	0	0	0	0
23	Polk & Sierra	SBR	25	47	28	52	28	52	0	0	0	0	0	0
23	Polk & Sierra	SBT	155	219	173	242	189	294	208	283	224	298	0	0
23	Polk & Sierra	SBL	51	68	57	75	60	93	50	95	40	88	0	0
23	Polk & Sierra	WBR	60	56	67	62	71	78	55	105	39	74	0	0
23	Polk & Sierra	WBT	58	60	65	66	65	66	0	0	0	0	0	0
23	Polk & Sierra	WBL	36	11	40	12	40	12	23	12	20	11	0	0
23	Polk & Sierra	NBR	21	22	23	24	23	24	10	26	10	20	0	0
23	Polk & Sierra	NBT	199	207	222	229	238	276	202	244	176	246	0	0
23	Polk & Sierra	NBL	47	48	52	53	52	53	0	0	0	0	0	0
23	Polk & Sierra	EBR	63	11	70	12	70	12	0	0	0	0	0	0
23	Polk & Sierra	EBT	93	46	104	51	104	51	0	0	0	0	0	0
23	Polk & Sierra	EBL	48	32	54	35	54	35	0	0	0	0	0	0
25	Grantland & Bullard	SBR	10	10	11	11	20	41	18	48	29	62	0	0
25	Grantland & Bullard	SBT	134	163	149	180	221	391	266	406	358	652	0	0
25	Grantland & Bullard	SBL	56	61	62	68	62	68	0	9	0	0	0	0
25	Grantland & Bullard	WBR	170	65	190	72	190	72	0	19	0	0	0	0
25	Grantland & Bullard	WBT	4	4	4	4	4	5	0	2	0	1	0	0
25	Grantland & Bullard	WBL	2	3	2	3	10	14	7	15	8	20	0	0
25	Grantland & Bullard	NBR	0	1	0	1	5	28	12	21	14	37	0	0
25	Grantland & Bullard	NBT	244	106	272	117	449	293	349	413	504	603	0	0
25	Grantland & Bullard	NBL	7	6	8	7	8	7	10	15	11	26	0	0
25	Grantland & Bullard	EBR	6	2	7	2	7	3	5	11	7	13	0	0
25	Grantland & Bullard	EBT	3	1	3	1	4	3	0	1	1	1	0	0
25	Grantland & Bullard	EBL	15	13	17	14	67	44	90	45	110	58	0	0
26	SR-99 NB Ramps & Veterans	SBR	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	SBT	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	SBL	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	WBR	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	WBT	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	WBL	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	NBR	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	NBT	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	NBL	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	EBR	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	EBT	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	EBL	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	SBR	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	SBT	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	SBL	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	WBR	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	WBT	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	WBL	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	NBR	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	NBT	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	NBL	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	EBR	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	EBT	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	EBL	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	SBR	129	34	144	38	144	39	30	43	26	44	0	0
28	Bullard & Carnegie	SBT	39	11	43	12	44	13	9	29	13	28	0	0
28	Bullard & Carnegie	SBL	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	WBR	0	0	0	0	0	0	0	0	0	0	0	0

I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2010 Ambient Growth Volume AM	2010 Ambient Growth Volume PM	2010 No Project Volume AM	2010 No Project Volume PM	2007 Existing AM	2007 Existing PM	2010 Baseline Volumes AM	2010 Baseline Volumes PM	2010 W/Project Volumes AM	2010 W/Project Volumes PM
28	Bullard & Carnegie	WBT	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	WBL	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	NBR	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	NBT	107	22	119	24	120	25	7	27	7	24	0	0
28	Bullard & Carnegie	NBL	416	239	464	265	542	373	554	424	549	586	0	0
28	Bullard & Carnegie	EBR	159	573	177	634	209	747	226	712	247	771	0	0
28	Bullard & Carnegie	EBT	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	EBL	92	93	103	103	103	105	30	44	32	42	0	0
29	Golden State & Carnegie	SBR	2	3	2	3	8	14	28	23	33	33	0	0
29	Golden State & Carnegie	SBT	63	104	70	115	187	175	102	58	163	54	0	0
29	Golden State & Carnegie	SBL	35	101	39	112	67	154	50	164	62	247	0	0
29	Golden State & Carnegie	WBR	119	42	133	46	182	104	79	122	84	247	0	0
29	Golden State & Carnegie	WBT	0	0	0	0	6	13	108	94	118	100	0	0
29	Golden State & Carnegie	WBL	435	196	485	217	509	277	386	265	361	304	0	0
29	Golden State & Carnegie	NBR	188	529	210	585	229	640	191	424	206	391	0	0
29	Golden State & Carnegie	NBT	108	136	120	151	125	185	13	35	12	36	0	0
29	Golden State & Carnegie	NBL	0	0	0	0	4	8	145	102	155	108	0	0
29	Golden State & Carnegie	EBR	0	1	0	1	4	9	48	182	50	204	0	0
29	Golden State & Carnegie	EBT	0	0	0	0	1	19	34	157	39	162	0	0
29	Golden State & Carnegie	EBL	1	1	1	1	2	16	8	37	10	46	0	0
30	Dante & Bullard	SBR	47	27	52	30	52	30	0	0	0	0	0	0
30	Dante & Bullard	SBT	13	14	14	15	14	15	0	0	0	0	0	0
30	Dante & Bullard	SBL	90	23	100	25	103	34	113	105	109	102	0	0
30	Dante & Bullard	WBR	25	38	28	42	33	49	69	141	50	139	0	0
30	Dante & Bullard	WBT	241	190	269	210	289	296	148	415	152	603	0	0
30	Dante & Bullard	WBL	25	56	28	62	28	62	0	0	0	0	0	0
30	Dante & Bullard	NBR	18	9	20	10	20	10	0	0	0	0	0	0
30	Dante & Bullard	NBT	11	6	12	7	12	7	0	0	0	0	0	0
30	Dante & Bullard	NBL	166	56	185	62	185	62	0	0	0	0	0	0
30	Dante & Bullard	EBR	36	56	40	62	40	62	0	0	0	0	0	0
30	Dante & Bullard	EBT	136	385	152	426	177	498	264	351	335	453	0	0
30	Dante & Bullard	EBL	17	101	19	112	19	112	0	0	0	0	0	0
31	Palm & Bullard	SBR	52	90	58	100	69	124	172	270	256	282	0	0
31	Palm & Bullard	SBT	413	732	461	810	461	826	461	766	492	862	0	0
31	Palm & Bullard	SBL	77	75	86	83	86	83	130	128	118	118	0	0
31	Palm & Bullard	WBR	85	65	95	72	95	72	112	93	106	121	0	0
31	Palm & Bullard	WBT	432	703	482	778	545	903	657	929	699	1120	0	0
31	Palm & Bullard	WBL	93	142	104	157	104	165	109	302	160	202	0	0
31	Palm & Bullard	NBR	73	141	81	156	82	163	130	150	121	277	0	0
31	Palm & Bullard	NBT	382	757	426	838	432	839	423	763	441	866	0	0
31	Palm & Bullard	NBL	43	158	48	175	49	178	20	216	17	98	0	0
31	Palm & Bullard	EBR	69	68	77	75	81	80	55	29	65	39	0	0
31	Palm & Bullard	EBT	704	534	785	591	894	736	881	1,000	1,019	919	0	0
31	Palm & Bullard	EBL	137	148	153	164	170	193	213	306	215	423	0	0
32	Bryan & Veterans	SBR	0	0	0	0	0	0	0	0	0	0	0	0
32	Bryan & Veterans	SBT	0	0	0	0	0	0	0	0	0	0	0	0
32	Bryan & Veterans	SBL	0	0	0	0	0	0	0	0	0	0	0	0
32	Bryan & Veterans	WBR	0	0	0	0	0	0	0	0	0	0	0	0
32	Bryan & Veterans	WBT	0	0	0	0	0	0	0	0	0	0	0	0
32	Bryan & Veterans	WBL	0	0	0	0	0	0	0	0	0	0	0	0
32	Bryan & Veterans	NBR	0	0	0	0	0	0	0	0	0	0	0	0
32	Bryan & Veterans	NBT	0	0	0	0	0	0	0	0	0	0	0	0
32	Bryan & Veterans	NBL	0	0	0	0	0	0	0	0	0	0	0	0
32	Bryan & Veterans	EBR	0	0	0	0	0	0	0	0	0	0	0	0
32	Bryan & Veterans	EBT	0	0	0	0	0	0	0	0	0	0	0	0
32	Bryan & Veterans	EBL	0	0	0	0	0	0	0	0	0	0	0	0
33	Grantland & Barstow	SBR	8	6	9	7	25	55	11	26	14	34	0	0
33	Grantland & Barstow	SBT	122	86	136	95	163	197	192	290	239	452	0	0
33	Grantland & Barstow	SBL	6	6	7	7	38	68	56	90	94	143	0	0
33	Grantland & Barstow	WBR	9	6	10	7	58	82	72	128	97	209	0	0
33	Grantland & Barstow	WBT	4	10	4	11	18	60	23	81	21	92	0	0
33	Grantland & Barstow	WBL	4	4	4	4	4	4	1	5	1	4	0	0
33	Grantland & Barstow	NBR	5	2	6	2	6	2	1	6	1	2	0	0
33	Grantland & Barstow	NBT	206	80	230	89	307	178	249	288	361	393	0	0
33	Grantland & Barstow	NBL	5	2	6	2	8	12	2	9	4	19	0	0
33	Grantland & Barstow	EBR	7	2	8	2	11	6	4	4	7	5	0	0
33	Grantland & Barstow	EBT	5	4	6	4	29	25	56	20	49	23	0	0
33	Grantland & Barstow	EBL	14	6	16	7	59	37	22	16	28	21	0	0
34	SR-99 SB Ramps & Shaw	SBR	0	0	0	0	0	0	0	0	0	0	0	0
34	SR-99 SB Ramps & Shaw	SBT	0	0	0	0	0	0	0	0	0	0	0	0
34	SR-99 SB Ramps & Shaw	SBL	0	0	0	0	0	0	0	0	0	0	0	0
34	SR-99 SB Ramps & Shaw	WBR	0	0	0	0	0	0	0	0	0	0	0	0
34	SR-99 SB Ramps & Shaw	WBT	642	1,001	716	1,108	846	1,494	730	1,367	804	1451	0	0
34	SR-99 SB Ramps & Shaw	WBL	492	400	549	443	571	502	141	149	87	143	0	0
34	SR-99 SB Ramps & Shaw	NBR	227	259	253	287	267	292	148	181	109	176	0	0
34	SR-99 SB Ramps & Shaw	NBT	0	0	0	0	0	0	0	0	0	0	0	0
34	SR-99 SB Ramps & Shaw	NBL	38	55	42	61	65	96	59	101	66	111	0	0
34	SR-99 SB Ramps & Shaw	EBR	317	181	354	200	487	275	466	414	488	518	0	0
34	SR-99 SB Ramps & Shaw	EBT	586	560	654	620	896	808	758	728	872	797	0	0
34	SR-99 SB Ramps & Shaw	EBL	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	SBR	202	214	225	237	254	323	0	0	238	356	0	0
35	SR-99 NB Ramps & Shaw	SBT	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	SBL	109	237	122	262	145	328	0	0	56	189	0	0
35	SR-99 NB Ramps & Shaw	WBR	192	302	214	334	259	359	0	0	159	291	0	0
35	SR-99 NB Ramps & Shaw	WBT	925	1,159	1,032	1,283	1,157	1,644	819	1,429	654	1238	0	0
35	SR-99 NB Ramps & Shaw	WBL	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	NBR	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	NBT	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	NBL	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	EBR	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	EBT	702	818	783	905	1,033	1,084	910	1,111	930	907	0	0
35	SR-99 NB Ramps & Shaw	EBL	95	41	106	45	112	63	0	0	51	66	0	0
36	Golden State & Shaw	SBR	14	23	16	25	30	40	124	130	79	144	0	0
36	Golden State & Shaw	SBT	314	216	350	239	379	270	292	230	318	263	0	0
36	Golden State & Shaw	SBL	109	79	122	87	213	207	183	213	245	220	0	0
36	Golden State & Shaw	WBR	74	166	83	184	161	277	121	139	126	142	0	0
36	Golden State & Shaw	WBT	791	1,343	882	1,486	1,126	1,743	724	1,284	762	1365	0	0
36	Golden State & Shaw	WBL	276	321	308	355	370	434	418	351	360	302	0	0
36	Golden State & Shaw	NBR	405	686	452	759	526	892	304	416	354	503	0	0
36	Golden State & Shaw	NBT	236	502	263	556	301	583	242	303	250	314	0	0
36	Golden State & Shaw	NBL	15	40	17	44	17	46	3	7	3	9	0	0
36	Golden State & Shaw	EBR	33	47	37	52	38	52	5	7	4	7	0	0
36	Golden State & Shaw	EBT	705	936	786	1,036	1,004	1,312	856	962	921	983	0	0
36	Golden State & Shaw	EBL	26	20	29	22	36	45	52	180	59	148	0	0
37	Brawley & Shaw	SBR	130	151	145	167	145	170	5	6	6	7	0	0
37	Brawley & Shaw	SBT	561	308	626	341	684	438	353	238	383	282	0	0

I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2010 Ambient Growth Volume AM	2010 Ambient Growth Volume PM	2010 No Project Volume AM	2010 No Project Volume PM	2007 Existing AM	2007 Existing PM	2010 Baseline Volumes AM	2010 Baseline Volumes PM	2010 W/Project Volumes AM	2010 W/Project Volumes PM
37	Brawley & Shaw	SBL	180	309	201	342	235	427	359	247	366	288	0	0
37	Brawley & Shaw	WBR	56	159	62	176	94	245	202	389	212	383	0	0
37	Brawley & Shaw	WBT	833	1,472	929	1,629	1,127	1,816	699	1,103	756	1137	0	0
37	Brawley & Shaw	WBL	103	184	115	204	121	205	361	214	332	225	0	0
37	Brawley & Shaw	NBR	57	132	64	146	64	151	101	432	105	438	0	0
37	Brawley & Shaw	NBT	161	611	180	676	230	769	229	379	208	374	0	0
37	Brawley & Shaw	NBL	148	240	165	266	170	276	33	60	35	77	0	0
37	Brawley & Shaw	EBR	55	127	61	141	73	151	40	55	45	76	0	0
37	Brawley & Shaw	EBT	920	1,329	1,026	1,471	1,191	1,703	716	1,035	777	1054	0	0
37	Brawley & Shaw	EBL	92	262	103	290	103	290	3	6	3	5	0	0
38	Marks & Shaw	SBR	313	326	349	361	403	425	328	507	400	487	0	0
38	Marks & Shaw	SBT	384	320	428	354	509	441	581	696	581	671	0	0
38	Marks & Shaw	SBL	243	195	271	216	279	219	91	54	78	61	0	0
38	Marks & Shaw	WBR	52	150	58	166	59	171	44	86	34	83	0	0
38	Marks & Shaw	WBT	735	1,209	820	1,338	943	1,512	1,133	1,405	1,125	1450	0	0
38	Marks & Shaw	WBL	128	274	143	303	144	310	147	371	140	378	0	0
38	Marks & Shaw	NBR	340	162	379	179	384	189	337	251	228	367	0	0
38	Marks & Shaw	NBT	330	526	368	582	408	670	413	843	496	809	0	0
38	Marks & Shaw	NBL	158	386	176	427	181	432	45	108	55	119	0	0
38	Marks & Shaw	EBR	69	198	77	219	101	222	71	88	87	105	0	0
38	Marks & Shaw	EBT	1,118	1,180	1,247	1,306	1,432	1,472	959	1,421	994	1514	0	0
38	Marks & Shaw	EBL	165	450	184	498	247	573	419	573	364	571	0	0
39	West & Shaw	SBR	131	140	146	155	158	175	237	219	175	212	0	0
39	West & Shaw	SBT	371	438	414	485	419	489	523	581	490	705	0	0
39	West & Shaw	SBL	133	121	148	134	148	134	50	52	48	53	0	0
39	West & Shaw	WBR	60	103	67	114	67	116	38	82	36	111	0	0
39	West & Shaw	WBT	852	1,237	950	1,369	1,065	1,572	1,202	1,805	1,249	1837	0	0
39	West & Shaw	WBL	137	237	153	262	155	264	236	478	240	426	0	0
39	West & Shaw	NBR	231	117	258	129	266	130	260	345	397	379	0	0
39	West & Shaw	NBT	478	293	533	324	538	353	485	798	432	809	0	0
39	West & Shaw	NBL	174	197	194	218	200	232	152	244	150	215	0	0
39	West & Shaw	EBR	125	109	139	121	146	125	173	180	204	205	0	0
39	West & Shaw	EBT	1,224	1,137	1,365	1,258	1,578	1,414	1,570	1,604	1,482	1747	0	0
39	West & Shaw	EBL	105	182	117	201	122	224	79	253	92	287	0	0
40	SR-99 SB Ramps & Ashlan	SBR	65	68	72	75	73	90	26	37	26	39	0	0
40	SR-99 SB Ramps & Ashlan	SBT	21	66	23	73	27	103	39	90	46	105	0	0
40	SR-99 SB Ramps & Ashlan	SBL	116	121	129	134	161	153	160	217	153	225	0	0
40	SR-99 SB Ramps & Ashlan	WBR	0	0	0	0	0	0	0	0	0	0	0	0
40	SR-99 SB Ramps & Ashlan	WBT	374	947	417	1,048	501	1,202	922	1,684	1,051	1773	0	0
40	SR-99 SB Ramps & Ashlan	WBL	109	319	122	353	137	382	152	215	166	193	0	0
40	SR-99 SB Ramps & Ashlan	NBR	310	396	346	438	403	495	315	308	333	336	0	0
40	SR-99 SB Ramps & Ashlan	NBT	0	0	0	0	0	0	0	0	0	0	0	0
40	SR-99 SB Ramps & Ashlan	NBL	18	45	20	50	20	51	4	6	5	7	0	0
40	SR-99 SB Ramps & Ashlan	EBR	31	59	35	65	35	65	3	3	3	5	0	0
40	SR-99 SB Ramps & Ashlan	EBT	1,191	850	1,328	941	1,466	1,043	1,557	1,252	1,541	1312	0	0
40	SR-99 SB Ramps & Ashlan	EBL	0	0	0	0	0	0	0	0	0	0	0	0
41	SR-99 NB Ramps & Ashlan	SBR	168	315	187	349	210	374	69	99	184	108	0	0
41	SR-99 NB Ramps & Ashlan	SBT	0	0	0	0	0	0	0	0	0	0	0	0
41	SR-99 NB Ramps & Ashlan	SBL	155	164	173	182	179	201	64	195	59	182	0	0
41	SR-99 NB Ramps & Ashlan	WBR	226	564	252	624	295	698	267	454	311	537	0	0
41	SR-99 NB Ramps & Ashlan	WBT	359	725	400	802	537	930	972	1,271	1,039	1297	0	0
41	SR-99 NB Ramps & Ashlan	WBL	0	0	0	0	0	0	0	0	0	0	0	0
41	SR-99 NB Ramps & Ashlan	NBR	415	701	463	776	487	841	332	437	300	387	0	0
41	SR-99 NB Ramps & Ashlan	NBT	7	15	8	17	15	21	118	64	73	26	0	0
41	SR-99 NB Ramps & Ashlan	NBL	210	464	234	514	262	582	334	729	376	781	0	0
41	SR-99 NB Ramps & Ashlan	EBR	0	0	0	0	0	0	0	0	0	0	0	0
41	SR-99 NB Ramps & Ashlan	EBT	872	920	973	1,018	1,103	1,116	1,235	1,079	1,205	1137	0	0
41	SR-99 NB Ramps & Ashlan	EBL	280	192	312	213	344	240	125	103	139	119	0	0
241	Golden State NB Ramps & Vete	SBR	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vete	SBT	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vete	SBL	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vete	WBR	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vete	WBT	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vete	WBL	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vete	NBR	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vete	NBT	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vete	NBL	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vete	EBR	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vete	EBT	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vete	EBL	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vete	SBR	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vete	SBT	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vete	SBL	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vete	WBR	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vete	WBT	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vete	WBL	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vete	NBR	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vete	NBT	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vete	NBL	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vete	EBR	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vete	EBT	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vete	EBL	0	0	0	0	0	0	0	0	0	0	0	0

			Post Processed Turning Movement Volumes						Raw Model Turning Movement Volumes					
I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2012 Ambient Growth Volume AM	2012 Ambient Growth Volume PM	2012 No Project Volume AM	2012 No Project Volume PM	2007 Existing AM	2007 Existing PM	2012 Baseline Volumes AM	2012 Baseline Volumes PM	2012 W/Project Volumes AM	2012 W/Project Volumes PM
1	Parkway & Herndon	SBR	0	0	0	0	0	0	0	0	0	0		
1	Parkway & Herndon	SBT	29	32	34	37	34	37	2	4	2	6		
1	Parkway & Herndon	SBL	94	86	110	100	110	100	5	12	3	6		
1	Parkway & Herndon	WBR	138	120	161	139	161	139	8	49	5	15		
1	Parkway & Herndon	WBT	0	0	0	0	0	0	0	0	0	0		
1	Parkway & Herndon	WBL	554	452	647	525	1,030	1,094	680	926	848	1,366		
1	Parkway & Herndon	NBR	209	123	244	143	486	411	444	533	677	784		
1	Parkway & Herndon	NBT	11	13	13	15	13	15	0	1	1	2		
1	Parkway & Herndon	NBL	0	0	0	0	0	0	0	0	0	0		
1	Parkway & Herndon	EBR	0	0	0	0	0	0	0	0	0	0		
1	Parkway & Herndon	EBT	0	0	0	0	0	0	0	0	0	0		
1	Parkway & Herndon	EBL	0	0	0	0	0	0	0	0	0	0		
2	SR-99 SB Ramps & Herndon	SBR	31	55	36	64	41	77	42	74	61	102		
2	SR-99 SB Ramps & Herndon	SBT	0	0	0	0	0	0	0	0	0	0		
2	SR-99 SB Ramps & Herndon	SBL	16	36	19	42	26	42	172	153	275	102		
2	SR-99 SB Ramps & Herndon	WBR	0	0	0	0	0	0	0	0	0	0		
2	SR-99 SB Ramps & Herndon	WBT	765	582	893	675	1,325	1,229	646	900	792	1,279		
2	SR-99 SB Ramps & Herndon	WBL	0	0	0	0	0	0	0	0	0	0		
2	SR-99 SB Ramps & Herndon	NBR	0	0	0	0	0	0	0	0	0	0		
2	SR-99 SB Ramps & Herndon	NBT	0	0	0	0	0	0	0	0	0	0		
2	SR-99 SB Ramps & Herndon	NBL	0	0	0	0	0	0	0	0	0	0		
2	SR-99 SB Ramps & Herndon	EBR	0	0	0	0	0	0	0	0	0	0		
2	SR-99 SB Ramps & Herndon	EBT	304	207	355	240	597	509	448	545	679	790		
2	SR-99 SB Ramps & Herndon	EBL	0	0	0	0	0	0	0	0	0	0		
3	SR-99 NB Ramps & Herndon	SBR	0	0	0	0	0	0	0	0	0	0		
3	SR-99 NB Ramps & Herndon	SBT	0	0	0	0	0	0	0	0	0	0		
3	SR-99 NB Ramps & Herndon	SBL	0	0	0	0	0	0	0	0	0	0		
3	SR-99 NB Ramps & Herndon	WBR	0	0	0	0	0	0	0	0	0	0		
3	SR-99 NB Ramps & Herndon	WBT	727	524	848	608	1,270	1,155	584	805	716	1,231		
3	SR-99 NB Ramps & Herndon	WBL	0	0	0	0	0	0	0	0	0	0		
3	SR-99 NB Ramps & Herndon	NBR	337	533	393	619	681	901	227	417	319	413		
3	SR-99 NB Ramps & Herndon	NBT	0	0	0	0	0	0	0	0	0	0		
3	SR-99 NB Ramps & Herndon	NBL	42	65	49	75	59	82	62	95	76	48		
3	SR-99 NB Ramps & Herndon	EBR	0	0	0	0	0	0	0	0	0	0		
3	SR-99 NB Ramps & Herndon	EBT	317	251	370	291	621	564	620	698	954	892		
3	SR-99 NB Ramps & Herndon	EBL	0	0	0	0	0	0	0	0	0	0		
4	Golden State & Herndon	SBR	126	60	147	70	255	130	2	6	2	6		
4	Golden State & Herndon	SBT	49	146	57	169	120	208	49	74	161	50		
4	Golden State & Herndon	SBL	205	387	239	449	372	558	501	623	526	787		
4	Golden State & Herndon	WBR	435	299	508	347	641	462	508	653	548	678		
4	Golden State & Herndon	WBT	569	413	664	479	971	926	542	688	662	1,002		
4	Golden State & Herndon	WBL	40	47	47	55	112	93	53	77	56	50		
4	Golden State & Herndon	NBR	45	81	53	94	67	133	20	72	15	71		
4	Golden State & Herndon	NBT	150	140	175	162	207	201	45	67	44	158		
4	Golden State & Herndon	NBL	50	41	58	48	65	88	41	111	53	223		
4	Golden State & Herndon	EBR	42	49	49	57	69	77	131	112	133	223		
4	Golden State & Herndon	EBT	552	620	644	720	1,022	1,170	656	944	1,060	1,010		
4	Golden State & Herndon	EBL	45	75	53	87	192	157	60	60	80	72		
5	Weber & Herndon	SBR	0	0	0	0	0	6	32	91	44	108		
5	Weber & Herndon	SBT	0	0	0	0	0	0	0	0	0	0		
5	Weber & Herndon	SBL	0	0	0	0	0	0	0	0	0	0		
5	Weber & Herndon	WBR	0	0	0	0	0	0	0	0	0	0		
5	Weber & Herndon	WBT	1,068	753	1,246	874	1,750	1,470	1,059	1,312	1,204	1,607		
5	Weber & Herndon	WBL	3	1	4	1	4	2	5	11	6	16		
5	Weber & Herndon	NBR	2	2	2	2	2	2	7	10	12	13		
5	Weber & Herndon	NBT	0	0	0	0	0	0	0	0	0	0		
5	Weber & Herndon	NBL	1	1	1	1	1	1	13	15	18	16		
5	Weber & Herndon	EBR	0	3	0	3	0	3	8	19	9	25		
5	Weber & Herndon	EBT	787	1,089	918	1,264	1,438	1,868	1,104	1,552	1,501	1,764		
5	Weber & Herndon	EBL	0	0	0	0	1	2	66	67	91	79		
6	Bryan & Herndon	SBR	0	0	0	0	308	297	0	0	166	281		
6	Bryan & Herndon	SBT	0	0	0	0	39	84	0	0	10	34		
6	Bryan & Herndon	SBL	0	0	0	0	181	170	0	0	9	27		
6	Bryan & Herndon	WBR	0	0	0	0	190	137	0	0	45	24		
6	Bryan & Herndon	WBT	925	714	1,079	829	1,393	1,292	1,033	1,274	1,005	1,287		
6	Bryan & Herndon	WBL	53	2	62	2	62	2	7	16	6	8		
6	Bryan & Herndon	NBR	138	3	161	3	161	3	14	10	6	3		
6	Bryan & Herndon	NBT	0	0	0	0	30	69	0	0	10	23		
6	Bryan & Herndon	NBL	256	69	299	80	325	190	56	40	82	109		
6	Bryan & Herndon	EBR	244	89	285	103	316	219	32	66	56	191		
6	Bryan & Herndon	EBT	506	951	590	1,104	984	1,494	1,070	1,529	1,276	1,356		
6	Bryan & Herndon	EBL	0	0	0	0	288	296	0	0	196	282		
7	Hayes & Herndon	SBR	129	43	151	50	151	50	130	148	14	14		
7	Hayes & Herndon	SBT	114	9	133	10	144	19	2	4	14	25		
7	Hayes & Herndon	SBL	5	5	6	6	22	18	8	19	12	28		
7	Hayes & Herndon	WBR	5	9	6	10	12	28	22	14	18	21		
7	Hayes & Herndon	WBT	793	659	925	765	1,237	1,206	909	1,142	1,020	1248		
7	Hayes & Herndon	WBL	145	71	169	82	169	84	34	59	43	63		
7	Hayes & Herndon	NBR	101	47	118	55	119	55	48	48	55	48		
7	Hayes & Herndon	NBT	28	10	33	12	37	21	2	3	11	21		
7	Hayes & Herndon	NBL	37	13	43	15	56	29	0	0	22	57		
7	Hayes & Herndon	EBR	7	22	8	26	25	35	0	0	36	55		
7	Hayes & Herndon	EBT	563	829	657	962	1,048	1,341	980	1,349	1,247	1312		
7	Hayes & Herndon	EBL	60	111	70	129	70	129	104	190	8	19		
8	Veterans & Herndon	SBR	0	0	0	0	0	0	0	0	0	0		
8	Veterans & Herndon	SBT	0	0	0	0	0	0	0	0	0	0		
8	Veterans & Herndon	SBL	0	0	0	0	0	0	0	0	0	0		
8	Veterans & Herndon	WBR	0	0	0	0	0	0	0	0	0	0		
8	Veterans & Herndon	WBT	943	739	1,100	858	1,420	1,319	965	1,214	1,080	1333		
8	Veterans & Herndon	WBL	0	0	5	24	5	24	0	0	5	24		
8	Veterans & Herndon	NBR	0	0	26	13	26	13	0	0	26	13		
8	Veterans & Herndon	NBT	0	0	0	0	0	0	0	0	0	0		
8	Veterans & Herndon	NBL	0	0	0	0	0	0	0	0	0	0		
8	Veterans & Herndon	EBR	0	0	0	0	0	0	0	0	0	0		
8	Veterans & Herndon	EBT	722	881	843	1,022	1,251	1,415	1,036	1,416	1,313	1389		
8	Veterans & Herndon	EBL	0	0	0	0	0	0	0	0	0	0		
9	Polk & Herndon	SBR	24	24	28	28	28	28	0	0	0	0		
9	Polk & Herndon	SBT	51	60	60	70	68	81	22	48	43	78		
9	Polk & Herndon	SBL	117	138	137	160	177	220	172	209	202	307		
9	Polk & Herndon	WBR	66	134	77	156	100	209	121	216	159	259		
9	Polk & Herndon	WBT	792	648	924	752	1,231	1,201	924	1,170	1,071	1,345		
9	Polk & Herndon	WBL	85	287	99	333	121	403	205	284	263	376		
9	Polk & Herndon	NBR	261	196	305	227	320	282	217	232	229	287		
9	Polk & Herndon	NBT	25	59	29	68	32	87	15	59	18	91		
9	Polk & Herndon	NBL	108	64	126	74	139	86	41	44	14	12		
9	Polk & Herndon	EBR	78	88	91	102	91	112	30	54	6	13		
9	Polk & Herndon	EBT	638	777	745	902	1,154	1,295	1,006	1,361	1,333	1,390		
9	Polk & Herndon	EBL	6	8	7	9	7	9	0	0	0	0		
10	Milburn & Herndon	SBR	204	133	238	154	284	357	81	65	73	83		
10	Milburn & Herndon	SBT	301	214	351	248	414	529	193	117	199	107		
10	Milburn & Herndon	SBL	359	151	419	175	503	573	232	79	292	183		
10	Milburn & Herndon	WBR	108	204	126	237	271	542	114	119	136	264		
10	Milburn & Herndon	WBT	611	802	713	931	1,006	1,282	1,116	1,374	1,362	1,815		

I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2012 Ambient Growth Volume AM	2012 Ambient Growth Volume PM	2012 No Project Volume AM	2012 No Project Volume PM	2007 Existing AM	2007 Existing PM	2012 Baseline Volumes AM	2012 Baseline Volumes PM	2012 W/Project Volumes AM	2012 W/Project Volumes PM
10	Milburn & Herndon	WBL	81	90	95	104	95	107	51	115	67	156		
10	Milburn & Herndon	NBR	131	58	153	67	154	68	96	89	115	112		
10	Milburn & Herndon	NBT	168	263	196	305	284	601	79	214	81	224		
10	Milburn & Herndon	NBL	114	137	133	159	155	178	53	230	58	81		
10	Milburn & Herndon	EBR	130	122	152	142	174	162	185	260	52	88		
10	Milburn & Herndon	EBT	723	736	844	854	1,214	1,148	1,173	1,400	1,653	1,791		
10	Milburn & Herndon	EBL	179	260	209	302	278	483	37	142	59	105		
11	Blythe & Herndon	SBR	1	9	1	10	1	12	8	26	0	33		
11	Blythe & Herndon	SBT	0	1	0	1	0	1	0	0	0	0		
11	Blythe & Herndon	SBL	50	60	58	70	58	70	0	0	0	0		
11	Blythe & Herndon	WBR	50	60	58	70	58	70	0	0	0	0		
11	Blythe & Herndon	WBT	800	1,104	934	1,281	1,371	1,937	1,273	1,582	1,565	2,201		
11	Blythe & Herndon	WBL	2	4	2	5	2	5	0	0	0	0		
11	Blythe & Herndon	NBR	0	4	0	5	0	5	0	0	0	0		
11	Blythe & Herndon	NBT	1	0	1	0	1	0	0	0	0	0		
11	Blythe & Herndon	NBL	0	2	0	2	0	2	0	0	0	0		
11	Blythe & Herndon	EBR	1	1	1	1	1	1	0	0	0	0		
11	Blythe & Herndon	EBT	1,222	940	1,426	1,091	1,864	1,783	1,487	1,543	2,040	2,060		
11	Blythe & Herndon	EBL	0	1	0	1	0	2	14	24	20	27		
12	Brawley & Herndon	SBR	130	151	152	175	156	196	20	36	26	50		
12	Brawley & Herndon	SBT	561	308	655	357	661	379	74	92	70	83		
12	Brawley & Herndon	SBL	180	309	210	359	210	359	33	19	52	25		
12	Brawley & Herndon	WBR	56	159	65	185	65	185	17	33	20	48		
12	Brawley & Herndon	WBT	833	1,472	972	1,708	1,309	2,199	1,173	1,501	1,418	1,985		
12	Brawley & Herndon	WBL	103	184	120	214	218	356	369	394	432	509		
12	Brawley & Herndon	NBR	57	132	67	153	198	303	362	366	434	555		
12	Brawley & Herndon	NBT	161	611	188	709	209	722	53	114	55	111		
12	Brawley & Herndon	NBL	148	240	173	279	248	418	120	222	164	319		
12	Brawley & Herndon	EBR	55	127	64	147	168	322	151	163	346	315		
12	Brawley & Herndon	EBT	920	1,329	1,074	1,542	1,414	2,042	1,367	1,477	1,726	1,805		
12	Brawley & Herndon	EBL	92	262	107	304	118	314	23	35	29	44		
13	Marks & Herndon	SBR	124	288	145	334	155	356	50	54	62	83		
13	Marks & Herndon	SBT	141	204	165	237	166	242	115	198	147	240		
13	Marks & Herndon	SBL	199	251	232	291	232	291	144	187	111	175		
13	Marks & Herndon	WBR	222	352	259	409	259	409	154	141	174	139		
13	Marks & Herndon	WBT	815	1,341	951	1,556	1,359	2,079	1,562	1,963	1,792	2423		
13	Marks & Herndon	WBL	204	300	238	348	238	351	11	111	2	21		
13	Marks & Herndon	NBR	236	228	275	265	275	266	37	64	38	22		
13	Marks & Herndon	NBT	119	219	139	254	143	259	138	215	150	225		
13	Marks & Herndon	NBL	102	107	119	124	149	180	29	36	110	174		
13	Marks & Herndon	EBR	49	74	57	86	65	123	19	35	199	180		
13	Marks & Herndon	EBT	1,562	1,043	1,823	1,210	2,257	1,800	1,825	1,877	2,064	2237		
13	Marks & Herndon	EBL	100	183	117	212	124	229	46	58	68	86		
14	West & Herndon	SBR	42	143	49	166	50	168	33	42	36	38		
14	West & Herndon	SBT	92	136	107	158	107	159	108	161	180	193		
14	West & Herndon	SBL	224	193	261	224	261	224	164	141	138	161		
14	West & Herndon	WBR	117	278	137	323	137	323	57	201	77	163		
14	West & Herndon	WBT	1,330	1,995	1,552	2,315	1,951	2,799	2,012	2,535	2,196	2660		
14	West & Herndon	WBL	296	266	345	309	352	311	364	240	282	267		
14	West & Herndon	NBR	265	414	309	480	326	483	255	483	333	284		
14	West & Herndon	NBT	69	129	81	150	81	150	50	234	67	315		
14	West & Herndon	NBL	76	119	89	138	94	172	48	98	57	207		
14	West & Herndon	EBR	133	129	155	150	186	160	56	103	127	70		
14	West & Herndon	EBT	1,971	1,363	2,300	1,582	2,711	2,131	2,358	2,315	2,456	2593		
14	West & Herndon	EBL	55	87	64	101	65	104	24	43	25	41		
15	Palm & Herndon	SBR	652	853	761	990	808	1,079	582	716	448	770		
15	Palm & Herndon	SBT	641	690	748	801	763	856	326	658	580	943		
15	Palm & Herndon	SBL	155	279	181	324	181	324	159	104	145	118		
15	Palm & Herndon	WBR	336	196	392	227	392	227	89	168	93	135		
15	Palm & Herndon	WBT	857	1,582	1,000	1,836	1,327	2,210	1,981	2,566	2,239	2,578		
15	Palm & Herndon	WBL	220	248	257	288	257	288	182	297	185	225		
15	Palm & Herndon	NBR	196	162	229	188	229	192	249	249	159	293		
15	Palm & Herndon	NBT	674	757	787	879	834	914	415	766	641	824		
15	Palm & Herndon	NBL	132	140	154	162	160	176	47	76	47	105		
15	Palm & Herndon	EBR	95	50	111	58	113	67	75	47	58	75		
15	Palm & Herndon	EBT	1,616	1,136	1,886	1,318	2,174	1,750	2,232	2,522	2,497	2,547		
15	Palm & Herndon	EBL	792	766	924	889	987	974	707	607	569	690		
16	Blackstone & Herndon	SBR	158	368	184	427	233	504	567	825	613	703		
16	Blackstone & Herndon	SBT	342	705	399	818	400	839	554	862	799	1,044		
16	Blackstone & Herndon	SBL	196	259	229	301	229	301	321	650	292	556		
16	Blackstone & Herndon	WBR	213	236	249	274	249	274	468	299	462	382		
16	Blackstone & Herndon	WBT	1,232	1,194	1,438	1,386	1,643	1,628	1,664	2,026	1,818	2,250		
16	Blackstone & Herndon	WBL	98	158	114	183	114	189	114	288	132	310		
16	Blackstone & Herndon	NBR	108	87	126	101	126	107	215	374	137	435		
16	Blackstone & Herndon	NBT	219	525	256	609	267	638	492	1,113	589	1,148		
16	Blackstone & Herndon	NBL	92	196	107	227	116	230	137	119	149	84		
16	Blackstone & Herndon	EBR	124	323	145	375	145	376	29	38	38	58		
16	Blackstone & Herndon	EBT	1,560	1,299	1,821	1,508	2,036	1,821	2,131	2,179	2,202	2,140		
16	Blackstone & Herndon	EBL	146	151	170	175	229	257	450	707	514	869		
17	Grantland & Parkway/Ramp	SBR	0	0	0	0	0	0	0	0	0	0		
17	Grantland & Parkway/Ramp	SBT	0	0	0	0	0	0	0	0	0	0		
17	Grantland & Parkway/Ramp	SBL	0	0	0	0	0	0	0	0	0	0		
17	Grantland & Parkway/Ramp	WBR	0	0	0	0	0	0	0	0	0	0		
17	Grantland & Parkway/Ramp	WBT	0	0	0	0	0	0	0	0	0	0		
17	Grantland & Parkway/Ramp	WBL	0	0	0	0	0	0	0	0	0	0		
17	Grantland & Parkway/Ramp	NBR	116	29	135	34	184	63	126	120	139	136		
17	Grantland & Parkway/Ramp	NBT	0	0	0	0	0	0	0	0	0	0		
17	Grantland & Parkway/Ramp	NBL	263	162	307	188	550	456	444	534	677	786		
17	Grantland & Parkway/Ramp	EBR	174	231	203	268	378	581	400	635	565	946		
17	Grantland & Parkway/Ramp	EBT	499	290	582	337	844	591	281	295	285	426		
17	Grantland & Parkway/Ramp	EBL	0	0	0	0	0	0	0	0	0	0		
18	Bryan & Palo Alto	SBR	0	0	0	0	0	0	0	0	0	0		
18	Bryan & Palo Alto	SBT	10	21	12	24	12	24	5	22	0	0		
18	Bryan & Palo Alto	SBL	296	59	345	68	345	68	0	0	9	6		
18	Bryan & Palo Alto	WBR	356	70	415	81	415	81	0	0	0	7		
18	Bryan & Palo Alto	WBT	0	0	0	0	0	0	0	0	0	0		
18	Bryan & Palo Alto	WBL	2	2	2	2	2	2	3	11	0	0		
18	Bryan & Palo Alto	NBR	1	2	1	2	1	2	9	5	0	0		
18	Bryan & Palo Alto	NBT	45	8	53	9	53	9	21	8	0	0		
18	Bryan & Palo Alto	NBL	0	0	0	0	0	0	0	0	0	0		
18	Bryan & Palo Alto	EBR	0	0	0	0	0	0	0	0	0	0		
18	Bryan & Palo Alto	EBT	0	0	0	0	0	0	0	0	0	0		
18	Bryan & Palo Alto	EBL	0	0	0	0	0	0	0	0	0	0		
19	Hayes & Palo Alto	SBR	256	80	299	93	299	93	3	11	0	0		
19	Hayes & Palo Alto	SBT	7	34	8	39	36	57	0	0	66	99		
19	Hayes & Palo Alto	SBL	0	0	0	0	0	0	0	0	0	0		
19	Hayes & Palo Alto	WBR	0	0	0	0	0	0	0	0	0	0		
19	Hayes & Palo Alto	WBT	0	0	0	0	0	0	0	0	0	0		
19	Hayes & Palo Alto	WBL	0	0	0	0	0	0	0	0	0	0		
19	Hayes & Palo Alto	NBR	0	0	0	0	0	0	0	0	0	0		
19	Hayes & Palo Alto	NBT	25	12	29	14	46	38	0	0	40	99		
19	Hayes & Palo Alto	NBL	167	41	195	48	195	48	0	0	0	7		
19	Hayes & Palo Alto	EBR	127	50	148	58	148	58	0	0	9	6		
19	Hayes & Palo Alto	EBT	0	0	0	0	0	0	0	0	0	0		
19	Hayes & Palo Alto	EBL	157	81	183	94	183	94	9	5	0	0		

I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2012 Ambient Growth Volume AM	2012 Ambient Growth Volume PM	2012 No Project Volume AM	2012 No Project Volume PM	2007 Existing AM	2007 Existing PM	2012 Baseline Volumes AM	2012 Baseline Volumes PM	2012 W/Project Volumes AM	2012 W/Project Volumes PM
20	Hayes & Veterans	SBR	0	0	0	0	10	7	0	0	27	38		
20	Hayes & Veterans	SBT	0	0	0	0	18	11	0	0	40	61		
20	Hayes & Veterans	SBL	0	0	0	0	0	0	0	0	8	6		
20	Hayes & Veterans	WBR	0	0	0	0	0	0	0	0	0	7		
20	Hayes & Veterans	WBT	0	0	0	0	0	0	0	0	5	17		
20	Hayes & Veterans	WBL	0	0	0	0	0	0	0	0	0	0		
20	Hayes & Veterans	NBR	0	0	0	0	0	0	0	0	0	0		
20	Hayes & Veterans	NBT	0	0	0	0	14	16	0	0	26	62		
20	Hayes & Veterans	NBL	0	0	0	0	0	0	0	0	0	0		
20	Hayes & Veterans	EBR	0	0	0	0	0	0	0	0	0	0		
20	Hayes & Veterans	EBT	0	0	0	0	0	0	0	0	18	7		
20	Hayes & Veterans	EBL	0	0	0	0	3	8	0	0	15	37		
21	Bryan & Veterans	SBR	0	0	0	0	0	0	0	0	0	0		
21	Bryan & Veterans	SBT	0	0	0	0	31	97	0	0	33	141		
21	Bryan & Veterans	SBL	0	0	0	0	0	0	0	0	18	7		
21	Bryan & Veterans	WBR	0	0	0	0	0	0	0	0	5	18		
21	Bryan & Veterans	WBT	0	0	0	0	0	0	0	0	0	0		
21	Bryan & Veterans	WBL	0	0	0	0	10	7	0	0	27	38		
21	Bryan & Veterans	NBR	0	0	0	0	3	8	0	0	15	37		
21	Bryan & Veterans	NBT	0	0	0	0	26	99	0	0	20	92		
21	Bryan & Veterans	NBL	0	0	0	0	0	0	0	0	0	0		
21	Bryan & Veterans	EBR	0	0	0	0	0	0	0	0	0	0		
21	Bryan & Veterans	EBT	0	0	0	0	0	0	0	0	0	0		
21	Bryan & Veterans	EBL	0	0	0	0	0	0	0	0	0	0		
22	Bryan & Sierra	SBR	0	0	0	0	0	0	0	0	0	0		
22	Bryan & Sierra	SBT	0	0	0	0	41	89	0	0	57	139		
22	Bryan & Sierra	SBL	0	0	0	0	0	12	0	0	3	40		
22	Bryan & Sierra	WBR	0	0	0	0	0	12	0	0	1	13		
22	Bryan & Sierra	WBT	0	0	0	0	0	0	0	0	0	0		
22	Bryan & Sierra	WBL	0	0	0	0	4	2	0	0	103	83		
22	Bryan & Sierra	NBR	0	0	0	0	2	4	0	0	79	111		
22	Bryan & Sierra	NBT	0	0	0	0	17	96	0	0	33	116		
22	Bryan & Sierra	NBL	0	0	0	0	0	0	0	0	0	0		
22	Bryan & Sierra	EBR	0	0	0	0	0	0	0	0	0	0		
22	Bryan & Sierra	EBT	0	0	0	0	0	0	0	0	0	0		
22	Bryan & Sierra	EBL	0	0	0	0	0	0	0	0	0	0		
23	Polk & Sierra	SBR	25	47	29	55	29	55	0	0	0	0		
23	Polk & Sierra	SBT	155	219	181	254	195	296	208	283	162	250		
23	Polk & Sierra	SBL	51	68	60	79	62	88	50	95	55	88		
23	Polk & Sierra	WBR	60	56	70	65	74	70	55	105	41	90		
23	Polk & Sierra	WBT	58	60	68	70	68	70	0	0	1	6		
23	Polk & Sierra	WBL	36	11	42	13	42	13	23	12	19	11		
23	Polk & Sierra	NBR	21	22	25	26	25	26	10	26	11	24		
23	Polk & Sierra	NBT	199	207	232	240	244	270	202	244	122	179		
23	Polk & Sierra	NBL	47	48	55	56	55	56	0	0	1	7		
23	Polk & Sierra	EBR	63	11	74	13	74	22	0	0	1	17		
23	Polk & Sierra	EBT	93	46	109	53	109	65	0	0	1	23		
23	Polk & Sierra	EBL	48	32	56	37	56	37	0	0	0	0		
25	Grantland & Bullard	SBR	10	10	12	12	23	42	18	48	32	65		
25	Grantland & Bullard	SBT	134	163	156	189	245	408	266	406	400	723		
25	Grantland & Bullard	SBL	56	61	65	71	65	71	0	9	0	0		
25	Grantland & Bullard	WBR	170	65	198	75	198	75	0	19	0	0		
25	Grantland & Bullard	WBT	4	4	5	5	5	5	0	2	0	1		
25	Grantland & Bullard	WBL	2	3	2	3	11	15	7	15	9	23		
25	Grantland & Bullard	NBR	0	1	0	1	6	36	12	21	16	50		
25	Grantland & Bullard	NBT	244	106	285	123	458	317	349	413	551	664		
25	Grantland & Bullard	NBL	7	6	8	7	8	7	10	15	12	34		
25	Grantland & Bullard	EBR	6	2	7	2	7	3	5	11	7	14		
25	Grantland & Bullard	EBT	3	1	4	1	4	2	0	1	1	1		
25	Grantland & Bullard	EBL	15	13	18	15	62	44	90	45	115	61		
26	SR-99 NB Ramps & Veterans	SBR	0	0	0	0	0	0	0	0	0	0		
26	SR-99 NB Ramps & Veterans	SBT	0	0	0	0	0	0	0	0	0	0		
26	SR-99 NB Ramps & Veterans	SBL	0	0	0	0	0	0	0	0	0	0		
26	SR-99 NB Ramps & Veterans	WBR	0	0	0	0	0	0	0	0	0	0		
26	SR-99 NB Ramps & Veterans	WBT	0	0	0	0	0	0	0	0	0	0		
26	SR-99 NB Ramps & Veterans	WBL	0	0	0	0	0	0	0	0	0	0		
26	SR-99 NB Ramps & Veterans	NBR	0	0	0	0	0	0	0	0	0	0		
26	SR-99 NB Ramps & Veterans	NBT	0	0	0	0	0	0	0	0	0	0		
26	SR-99 NB Ramps & Veterans	NBL	0	0	0	0	0	0	0	0	0	0		
26	SR-99 NB Ramps & Veterans	EBR	0	0	0	0	0	0	0	0	0	0		
26	SR-99 NB Ramps & Veterans	EBT	0	0	0	0	0	0	0	0	0	0		
26	SR-99 NB Ramps & Veterans	EBL	0	0	0	0	0	0	0	0	0	0		
27	SR-99 SB Ramps & Veterans	SBR	0	0	0	0	0	0	0	0	0	0		
27	SR-99 SB Ramps & Veterans	SBT	0	0	0	0	0	0	0	0	0	0		
27	SR-99 SB Ramps & Veterans	SBL	0	0	0	0	0	0	0	0	0	0		
27	SR-99 SB Ramps & Veterans	WBR	0	0	0	0	0	0	0	0	0	0		
27	SR-99 SB Ramps & Veterans	WBT	0	0	0	0	0	0	0	0	0	0		
27	SR-99 SB Ramps & Veterans	WBL	0	0	0	0	0	0	0	0	0	0		
27	SR-99 SB Ramps & Veterans	NBR	0	0	0	0	0	0	0	0	0	0		
27	SR-99 SB Ramps & Veterans	NBT	0	0	0	0	0	0	0	0	0	0		
27	SR-99 SB Ramps & Veterans	NBL	0	0	0	0	0	0	0	0	0	0		
27	SR-99 SB Ramps & Veterans	EBR	0	0	0	0	0	0	0	0	0	0		
27	SR-99 SB Ramps & Veterans	EBT	0	0	0	0	0	0	0	0	0	0		
27	SR-99 SB Ramps & Veterans	EBL	0	0	0	0	0	0	0	0	0	0		
28	Bullard & Carnegie	SBR	129	34	151	39	163	50	30	43	150	141		
28	Bullard & Carnegie	SBT	39	11	46	13	63	90	9	29	42	130		
28	Bullard & Carnegie	SBL	0	0	0	0	0	0	0	0	0	0		
28	Bullard & Carnegie	WBR	0	0	0	0	0	0	0	0	0	0		
28	Bullard & Carnegie	WBT	0	0	0	0	0	0	0	0	0	0		
28	Bullard & Carnegie	WBL	0	0	0	0	0	0	0	0	0	0		
28	Bullard & Carnegie	NBR	0	0	0	0	0	0	0	0	0	0		
28	Bullard & Carnegie	NBT	107	22	125	26	140	104	7	27	25	103		
28	Bullard & Carnegie	NBL	416	239	485	277	523	380	554	424	476	549		
28	Bullard & Carnegie	EBR	159	573	186	665	222	758	226	712	231	690		
28	Bullard & Carnegie	EBT	0	0	0	0	0	0	0	0	0	0		
28	Bullard & Carnegie	EBL	92	93	107	108	113	122	30	44	122	167		
29	Golden State & Carnegie	SBR	2	3	2	3	6	13	28	23	33	29		
29	Golden State & Carnegie	SBT	63	104	74	121	186	159	102	58	155	40		
29	Golden State & Carnegie	SBL	35	101	41	117	57	147	50	164	87	218		
29	Golden State & Carnegie	WBR	119	42	139	49	175	100	79	122	79	276		
29	Golden State & Carnegie	WBT	0	0	0	0	8	12	108	94	127	112		
29	Golden State & Carnegie	WBL	435	196	508	227	543	286	386	265	403	322		
29	Golden State & Carnegie	NBR	188	529	219	614	244	672	191	424	251	442		
29	Golden State & Carnegie	NBT	108	136	126	158	130	180	13	35	12	33		
29	Golden State & Carnegie	NBL	0	0	0	0	4	8	145	102	161	113		
29	Golden State & Carnegie	EBR	0	1	0	1	3	9	48	182	49	201		
29	Golden State & Carnegie	EBT	0	0	0	0	2	18	34	157	46	178		
29	Golden State & Carnegie	EBL	1	1	1	1	1	15	8	37	10	54		
30	Dante & Bullard	SBR	47	27	55	31	55	31	0	0	0	0		
30	Dante & Bullard	SBT	13	14	15	16	15	16	0	0	0	0		
30	Dante & Bullard	SBL	90	23	105	27	108	34	113	105	122	107		
30	Dante & Bullard	WBR	25	38	29	44	33	50	69	141	51	146		
30	Dante & Bullard	WBT	241	190	281	220	321	382	148	415	165	687		
30	Dante & Bullard	WBL	25	56	29	65	29	65	0	0	0	0		
30	Dante & Bullard	NBR	18	9	21	10	21	10	0	0	0	0		

I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2012 Ambient Growth Volume AM	2012 Ambient Growth Volume PM	2012 No Project Volume AM	2012 No Project Volume PM	2007 Existing AM	2007 Existing PM	2012 Baseline Volumes AM	2012 Baseline Volumes PM	2012 W/Project Volumes AM	2012 W/Project Volumes PM
30	Dante & Bullard	NBT	11	6	13	7	13	7	0	0	0	0		
30	Dante & Bullard	NBL	166	56	194	65	194	65	0	0	0	0		
30	Dante & Bullard	EBR	36	56	42	65	42	65	0	0	0	0		
30	Dante & Bullard	EBT	136	385	159	447	205	580	264	351	404	539		
30	Dante & Bullard	EBL	17	101	20	117	20	117	0	0	0	0		
31	Palm & Bullard	SBR	52	90	61	104	72	132	172	270	271	354		
31	Palm & Bullard	SBT	413	732	482	849	482	878	461	766	500	921		
31	Palm & Bullard	SBL	77	75	90	87	90	87	130	128	121	126		
31	Palm & Bullard	WBR	85	65	99	75	99	76	112	93	111	120		
31	Palm & Bullard	WBT	432	703	504	816	571	915	657	929	722	1139		
31	Palm & Bullard	WBL	93	142	109	165	109	175	109	302	170	265		
31	Palm & Bullard	NBR	73	141	85	164	86	167	130	150	128	262		
31	Palm & Bullard	NBT	382	757	446	879	451	883	423	763	422	880		
31	Palm & Bullard	NBL	43	158	50	183	51	188	20	216	23	119		
31	Palm & Bullard	EBR	69	68	81	79	85	82	55	29	121	41		
31	Palm & Bullard	EBT	704	534	822	620	922	750	881	1,000	1,011	1065		
31	Palm & Bullard	EBL	137	148	160	172	181	190	213	306	213	389		
32	Bryan & Veterans	SBR	0	0	0	0	0	0	0	0	0	0		
32	Bryan & Veterans	SBT	0	0	0	0	0	0	0	0	0	0		
32	Bryan & Veterans	SBL	0	0	0	0	0	0	0	0	0	0		
32	Bryan & Veterans	WBR	0	0	0	0	0	0	0	0	0	0		
32	Bryan & Veterans	WBT	0	0	0	0	0	0	0	0	0	0		
32	Bryan & Veterans	WBL	0	0	0	0	0	0	0	0	0	0		
32	Bryan & Veterans	NBR	0	0	0	0	0	0	0	0	0	0		
32	Bryan & Veterans	NBT	0	0	0	0	0	0	0	0	0	0		
32	Bryan & Veterans	NBL	0	0	0	0	0	0	0	0	0	0		
32	Bryan & Veterans	EBR	0	0	0	0	0	0	0	0	0	0		
32	Bryan & Veterans	EBT	0	0	0	0	0	0	0	0	0	0		
32	Bryan & Veterans	EBL	0	0	0	0	0	0	0	0	0	0		
33	Grantland & Barstow	SBR	8	6	9	7	25	57	11	26	16	35		
33	Grantland & Barstow	SBT	122	86	142	100	177	208	192	290	265	500		
33	Grantland & Barstow	SBL	6	6	7	7	39	68	56	90	107	165		
33	Grantland & Barstow	WBR	9	6	11	7	60	83	72	128	108	235		
33	Grantland & Barstow	WBT	4	10	5	12	17	56	23	81	22	95		
33	Grantland & Barstow	WBL	4	4	5	5	5	5	1	5	1	2		
33	Grantland & Barstow	NBR	5	2	6	2	6	2	1	6	3	2		
33	Grantland & Barstow	NBT	206	80	240	93	318	203	249	288	392	442		
33	Grantland & Barstow	NBL	5	2	6	2	8	19	2	9	4	28		
33	Grantland & Barstow	EBR	7	2	8	2	15	7	4	4	10	6		
33	Grantland & Barstow	EBT	5	4	6	5	32	27	56	20	53	28		
33	Grantland & Barstow	EBL	14	6	16	7	60	38	22	16	30	23		
34	SR-99 SB Ramps & Shaw	SBR	0	0	0	0	0	0	0	0	0	0		
34	SR-99 SB Ramps & Shaw	SBT	0	0	0	0	0	0	0	0	0	0		
34	SR-99 SB Ramps & Shaw	SBL	0	0	0	0	0	0	0	0	0	0		
34	SR-99 SB Ramps & Shaw	WBR	0	0	0	0	0	0	0	0	0	0		
34	SR-99 SB Ramps & Shaw	WBT	642	1,001	749	1,162	878	1,517	730	1,367	828	1591		
34	SR-99 SB Ramps & Shaw	WBL	492	400	574	464	596	532	141	149	91	131		
34	SR-99 SB Ramps & Shaw	NBR	227	259	265	301	277	306	148	181	112	162		
34	SR-99 SB Ramps & Shaw	NBT	0	0	0	0	0	0	0	0	0	0		
34	SR-99 SB Ramps & Shaw	NBL	38	55	44	64	66	106	59	101	70	138		
34	SR-99 SB Ramps & Shaw	EBR	317	181	370	210	488	285	466	414	514	556		
34	SR-99 SB Ramps & Shaw	EBT	586	560	684	650	938	835	758	728	972	875		
34	SR-99 SB Ramps & Shaw	EBL	0	0	0	0	0	0	0	0	0	0		
35	SR-99 NB Ramps & Shaw	SBR	202	214	236	248	260	318	0	0	227	364		
35	SR-99 NB Ramps & Shaw	SBT	0	0	0	0	0	0	0	0	0	0		
35	SR-99 NB Ramps & Shaw	SBL	109	237	127	275	163	332	0	0	51	271		
35	SR-99 NB Ramps & Shaw	WBR	192	302	224	350	268	372	0	0	163	291		
35	SR-99 NB Ramps & Shaw	WBT	925	1,159	1,079	1,345	1,205	1,700	819	1,429	692	1358		
35	SR-99 NB Ramps & Shaw	WBL	0	0	0	0	0	0	0	0	0	0		
35	SR-99 NB Ramps & Shaw	NBR	0	0	0	0	0	0	0	0	0	0		
35	SR-99 NB Ramps & Shaw	NBT	0	0	0	0	0	0	0	0	0	0		
35	SR-99 NB Ramps & Shaw	NBL	0	0	0	0	0	0	0	0	0	0		
35	SR-99 NB Ramps & Shaw	EBR	0	0	0	0	0	0	0	0	0	0		
35	SR-99 NB Ramps & Shaw	EBT	702	818	819	949	1,067	1,122	910	1,111	1,017	956		
35	SR-99 NB Ramps & Shaw	EBL	95	41	111	48	132	65	0	0	67	81		
36	Golden State & Shaw	SBR	14	23	16	27	33	39	124	130	87	133		
36	Golden State & Shaw	SBT	314	216	366	251	394	278	292	230	336	282		
36	Golden State & Shaw	SBL	109	79	127	92	203	199	183	213	251	204		
36	Golden State & Shaw	WBR	74	166	86	193	162	274	121	139	138	152		
36	Golden State & Shaw	WBT	791	1,343	923	1,559	1,161	1,809	724	1,284	799	1485		
36	Golden State & Shaw	WBL	276	321	322	373	383	462	418	351	390	330		
36	Golden State & Shaw	NBR	405	686	473	796	532	882	304	416	342	413		
36	Golden State & Shaw	NBT	236	502	275	583	306	619	242	303	271	282		
36	Golden State & Shaw	NBL	15	40	18	46	18	47	3	7	3	9		
36	Golden State & Shaw	EBR	33	47	39	55	39	55	5	7	3	8		
36	Golden State & Shaw	EBT	705	936	823	1,086	1,031	1,360	856	962	991	1046		
36	Golden State & Shaw	EBL	26	20	30	23	39	47	52	180	70	217		
37	Brawley & Shaw	SBR	130	151	152	175	152	179	5	6	5	7		
37	Brawley & Shaw	SBT	561	308	655	357	716	433	353	238	442	249		
37	Brawley & Shaw	SBL	180	309	210	359	246	444	359	247	315	328		
37	Brawley & Shaw	WBR	56	159	65	185	96	263	202	389	240	424		
37	Brawley & Shaw	WBT	833	1,472	972	1,708	1,170	1,877	699	1,103	800	1214		
37	Brawley & Shaw	WBL	103	184	120	214	126	215	361	214	333	223		
37	Brawley & Shaw	NBR	57	132	67	153	67	158	101	432	108	435		
37	Brawley & Shaw	NBT	161	611	188	709	239	818	229	379	196	419		
37	Brawley & Shaw	NBL	148	240	173	279	179	296	33	60	39	84		
37	Brawley & Shaw	EBR	55	127	64	147	76	158	40	55	50	77		
37	Brawley & Shaw	EBT	920	1,329	1,074	1,542	1,247	1,763	716	1,035	829	1069		
37	Brawley & Shaw	EBL	92	262	107	304	108	305	3	6	3	7		
38	Marks & Shaw	SBR	313	326	365	378	418	442	328	507	383	493		
38	Marks & Shaw	SBT	384	320	448	371	533	471	581	696	614	740		
38	Marks & Shaw	SBL	243	195	284	226	285	232	91	54	79	53		
38	Marks & Shaw	WBR	52	150	61	174	62	180	44	86	33	94		
38	Marks & Shaw	WBT	735	1,209	858	1,403	979	1,588	1,133	1,405	1,215	1520		
38	Marks & Shaw	WBL	128	274	149	318	150	323	147	371	147	269		
38	Marks & Shaw	NBR	340	162	397	188	401	196	337	251	191	310		
38	Marks & Shaw	NBT	330	526	385	610	431	721	413	843	539	839		
38	Marks & Shaw	NBL	158	386	184	448	189	453	45	108	61	128		
38	Marks & Shaw	EBR	69	198	81	230	105	232	71	88	83	125		
38	Marks & Shaw	EBT	1,118	1,180	1,305	1,369	1,495	1,516	959	1,421	1,107	1526		
38	Marks & Shaw	EBL	165	450	193	522	248	612	419	573	355	604		
39	West & Shaw	SBR	131	140	153	162	167	177	237	219	208	238		
39	West & Shaw	SBT	371	438	433	508	439	513	523	581	507	679		
39	West & Shaw	SBL	133	121	155	140	158	144	50	52	47	68		
39	West & Shaw	WBR	60	103	70	120	70	133	38	82	37	94		
39	West & Shaw	WBT	852	1,237	994	1,436	1,107	1,624	1,202	1,805	1,316	1744		
39	West & Shaw	WBL	137	237	160	275	163	281	236	478	259	449		
39	West & Shaw	NBR	231	117	270	136	270	136	260	345	379	296		
39	West & Shaw	NBT	478	293	558	340	563	369	485	798	470	975		
39	West & Shaw	NBL	174	197	203	229	208	244	152	244	164	260		
39	West & Shaw	EBR	125	109	146	126	154	133	173	180	207	183		
39	West & Shaw	EBT	1,224	1,137	1,428	1,320	1,639	1,478	1,570	1,604	1,563	1752		
39	West & Shaw	EBL	105	182	123	211	125	229	79	253	89	222		
40	SR-99 SB Ramps & Ashlan	SBR	65	68	76	79	78	92	26	37	31	45		
40	SR-99 SB Ramps & Ashlan	SBT	21	66	25	77	26	106	39	90	26	84		

I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2012 Ambient Growth Volume AM	2012 Ambient Growth Volume PM	2012 No Project Volume AM	2012 No Project Volume PM	2007 Existing AM	2007 Existing PM	2012 Baseline Volumes AM	2012 Baseline Volumes PM	2012 W/Project Volumes AM	2012 W/Project Volumes PM
40	SR-99 SB Ramps & Ashlan	SBL	116	121	135	140	150	160	160	217	157	234		
40	SR-99 SB Ramps & Ashlan	WBR	0	0	0	0	0	0	0	0	0	0		
40	SR-99 SB Ramps & Ashlan	WBT	374	947	436	1,099	520	1,263	922	1,684	1,170	1629		
40	SR-99 SB Ramps & Ashlan	WBL	109	319	127	370	142	397	152	215	145	152		
40	SR-99 SB Ramps & Ashlan	NBR	310	396	362	460	418	511	315	308	294	325		
40	SR-99 SB Ramps & Ashlan	NBT	0	0	0	0	0	0	0	0	0	0		
40	SR-99 SB Ramps & Ashlan	NBL	18	45	21	52	21	53	4	6	6	10		
40	SR-99 SB Ramps & Ashlan	EBR	31	59	36	68	36	69	3	3	2	4		
40	SR-99 SB Ramps & Ashlan	EBT	1,191	850	1,390	986	1,555	1,088	1,557	1,252	1,634	1372		
40	SR-99 SB Ramps & Ashlan	EBL	0	0	0	0	0	0	0	0	0	0		
41	SR-99 NB Ramps & Ashlan	SBR	168	315	196	366	213	390	69	99	71	142		
41	SR-99 NB Ramps & Ashlan	SBT	0	0	0	0	0	0	0	0	0	0		
41	SR-99 NB Ramps & Ashlan	SBL	155	164	181	190	187	209	64	195	59	200		
41	SR-99 NB Ramps & Ashlan	WBR	226	564	264	655	305	698	267	454	259	525		
41	SR-99 NB Ramps & Ashlan	WBT	359	725	419	841	554	957	972	1,271	1,093	1250		
41	SR-99 NB Ramps & Ashlan	WBL	0	0	0	0	0	0	0	0	0	0		
41	SR-99 NB Ramps & Ashlan	NBR	415	701	484	814	503	900	332	437	295	471		
41	SR-99 NB Ramps & Ashlan	NBT	7	15	8	17	8	17	118	64	52	42		
41	SR-99 NB Ramps & Ashlan	NBL	210	464	245	538	274	616	334	729	442	711		
41	SR-99 NB Ramps & Ashlan	EBR	0	0	0	0	0	0	0	0	0	0		
41	SR-99 NB Ramps & Ashlan	EBT	872	920	1,018	1,068	1,151	1,165	1,235	1,079	1,254	1173		
41	SR-99 NB Ramps & Ashlan	EBL	280	192	327	223	357	235	125	103	146	117		
241	Golden State NB Ramps & Veterans	SBR	0	0	0	0	0	0	0	0	0	0		
241	Golden State NB Ramps & Veterans	SBT	0	0	0	0	0	0	0	0	0	0		
241	Golden State NB Ramps & Veterans	SBL	0	0	0	0	0	0	0	0	0	0		
241	Golden State NB Ramps & Veterans	WBR	0	0	0	0	0	0	0	0	0	0		
241	Golden State NB Ramps & Veterans	WBT	0	0	0	0	0	0	0	0	0	0		
241	Golden State NB Ramps & Veterans	WBL	0	0	0	0	0	0	0	0	0	0		
241	Golden State NB Ramps & Veterans	NBR	0	0	0	0	0	0	0	0	0	0		
241	Golden State NB Ramps & Veterans	NBT	0	0	0	0	0	0	0	0	0	0		
241	Golden State NB Ramps & Veterans	NBL	0	0	0	0	0	0	0	0	0	0		
241	Golden State NB Ramps & Veterans	EBR	0	0	0	0	0	0	0	0	0	0		
241	Golden State NB Ramps & Veterans	EBT	0	0	0	0	0	0	0	0	0	0		
241	Golden State NB Ramps & Veterans	EBL	0	0	0	0	0	0	0	0	0	0		
242	Golden State SB Ramps & Veterans	SBR	0	0	0	0	0	0	0	0	0	0		
242	Golden State SB Ramps & Veterans	SBT	0	0	0	0	0	0	0	0	0	0		
242	Golden State SB Ramps & Veterans	SBL	0	0	0	0	0	0	0	0	0	0		
242	Golden State SB Ramps & Veterans	WBR	0	0	0	0	0	0	0	0	0	0		
242	Golden State SB Ramps & Veterans	WBT	0	0	0	0	0	0	0	0	0	0		
242	Golden State SB Ramps & Veterans	WBL	0	0	0	0	0	0	0	0	0	0		
242	Golden State SB Ramps & Veterans	NBR	0	0	0	0	0	0	0	0	0	0		
242	Golden State SB Ramps & Veterans	NBT	0	0	0	0	0	0	0	0	0	0		
242	Golden State SB Ramps & Veterans	NBL	0	0	0	0	0	0	0	0	0	0		
242	Golden State SB Ramps & Veterans	EBR	0	0	0	0	0	0	0	0	0	0		
242	Golden State SB Ramps & Veterans	EBT	0	0	0	0	0	0	0	0	0	0		
242	Golden State SB Ramps & Veterans	EBL	0	0	0	0	0	0	0	0	0	0		

			Post Processed Turning Movement Volumes						Raw Model Turning Movement Volumes					
I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2017 Baseline Volumes AM	2017 Baseline Volumes PM	2017 W/Proj Volumes AM	2017 W/Proj Volumes PM	2007 Existing AM	2007 Existing PM	2017 Baseline Volumes AM	2017 Baseline Volumes PM	2017 W/Proj Volumes AM	2017 W/Proj Volumes PM
1	Parkway & Herndon	SBR	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	SBT	29	32	29	34	29	34	2	4	2	6	2	6
1	Parkway & Herndon	SBL	94	86	92	80	93	84	5	12	3	6	4	10
1	Parkway & Herndon	WBR	138	120	135	81	136	111	8	49	5	10	6	40
1	Parkway & Herndon	WBT	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	WBL	554	452	272	404	316	1,479	680	926	398	878	442	1,953
1	Parkway & Herndon	NBR	209	123	64	42	24	171	444	533	136	180	259	581
1	Parkway & Herndon	NBT	11	13	12	14	12	14	0	1	1	2	1	2
1	Parkway & Herndon	NBL	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	EBR	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	EBT	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	EBL	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	SBR	31	55	7	27	7	12	42	74	18	46	18	31
2	SR-99 SB Ramps & Herndon	SBT	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	SBL	16	36	296	242	258	46	172	153	452	359	414	163
2	SR-99 SB Ramps & Herndon	WBR	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	WBT	765	582	504	524	548	1,644	646	900	385	842	429	1,962
2	SR-99 SB Ramps & Herndon	WBL	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	NBR	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	NBT	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	NBL	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	EBR	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	EBT	304	207	94	71	118	253	448	545	139	186	262	591
2	SR-99 SB Ramps & Herndon	EBL	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	SBR	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	SBT	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	SBL	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	WBR	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	WBT	727	524	482	485	522	1,605	584	805	339	766	379	1,886
3	SR-99 NB Ramps & Herndon	WBL	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	NBR	337	533	485	582	883	1,281	227	417	375	466	773	1,165
3	SR-99 NB Ramps & Herndon	NBT	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	NBL	42	65	26	46	30	46	62	95	46	76	50	76
3	SR-99 NB Ramps & Herndon	EBR	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	EBT	317	251	288	98	374	306	620	698	591	545	677	753
3	SR-99 NB Ramps & Herndon	EBL	0	0	0	0	0	0	0	0	0	0	0	0
4	Golden State & Herndon	SBR	126	60	137	111	135	88	2	6	13	57	11	34
4	Golden State & Herndon	SBT	49	146	195	178	178	228	49	74	195	106	178	156
4	Golden State & Herndon	SBL	205	387	95	302	355	371	501	623	391	538	651	607
4	Golden State & Herndon	WBR	435	299	447	258	387	356	508	653	520	612	460	710
4	Golden State & Herndon	WBT	569	413	341	341	364	1,046	542	688	314	616	337	1,321
4	Golden State & Herndon	WBL	40	47	68	47	141	410	53	77	81	77	154	440
4	Golden State & Herndon	NBR	45	81	42	94	109	449	20	72	17	85	84	440
4	Golden State & Herndon	NBT	150	140	113	138	147	240	45	67	8	65	42	167
4	Golden State & Herndon	NBL	50	41	21	22	40	461	41	111	12	92	31	531
4	Golden State & Herndon	EBR	42	49	143	160	282	386	131	112	232	223	371	449
4	Golden State & Herndon	EBT	552	620	571	399	922	1,091	656	944	675	723	1,026	1,415
4	Golden State & Herndon	EBL	45	75	45	80	37	69	60	60	60	65	52	54
5	Weber & Herndon	SBR	0	0	24	64	29	81	32	91	56	155	61	172
5	Weber & Herndon	SBT	0	0	0	0	0	0	0	0	0	0	0	0
5	Weber & Herndon	SBL	0	0	0	0	0	0	0	0	0	0	0	0
5	Weber & Herndon	WBR	0	0	0	0	0	0	0	0	0	0	0	0
5	Weber & Herndon	WBT	1,068	753	840	570	873	1,716	1,059	1,312	831	1,129	864	2,275
5	Weber & Herndon	WBL	3	1	4	7	6	17	5	11	6	17	8	27
5	Weber & Herndon	NBR	2	2	8	4	11	14	7	10	13	12	16	22
5	Weber & Herndon	NBT	0	0	0	0	0	0	0	0	0	0	0	0
5	Weber & Herndon	NBL	1	1	16	7	15	10	13	15	28	21	27	24
5	Weber & Herndon	EBR	0	3	4	19	5	20	8	19	12	35	13	36
5	Weber & Herndon	EBT	787	1,089	626	732	1,290	1,843	1,104	1,552	943	1,195	1,607	2,306
5	Weber & Herndon	EBL	0	0	62	49	76	54	66	67	128	116	142	121
6	Bryan & Herndon	SBR	0	0	140	252	179	435	0	0	140	252	179	435
6	Bryan & Herndon	SBT	0	0	62	84	117	309	0	0	62	84	117	309
6	Bryan & Herndon	SBL	0	0	33	42	22	50	0	0	33	42	22	50
6	Bryan & Herndon	WBR	0	0	41	43	23	73	0	0	41	43	23	73
6	Bryan & Herndon	WBT	925	714	592	230	486	565	1,033	1,274	700	790	594	1,125
6	Bryan & Herndon	WBL	53	2	52	2	51	138	7	16	6	13	5	152
6	Bryan & Herndon	NBR	138	3	137	0	137	1	14	10	13	7	13	4
6	Bryan & Herndon	NBT	0	0	53	88	92	121	0	0	53	88	92	121
6	Bryan & Herndon	NBL	256	69	280	156	380	742	56	40	80	127	180	713
6	Bryan & Herndon	EBR	244	89	273	176	415	387	32	66	61	153	203	364
6	Bryan & Herndon	EBT	506	951	195	333	277	762	1,070	1,529	759	911	841	1,340
6	Bryan & Herndon	EBL	0	0	153	258	253	542	0	0	153	258	253	542
7	Hayes & Herndon	SBR	129	43	0	0	0	4	130	148	0	0	0	14
7	Hayes & Herndon	SBT	114	9	280	235	283	165	2	4	168	230	171	160
7	Hayes & Herndon	SBL	5	5	0	0	0	1	8	19	0	0	0	5
7	Hayes & Herndon	WBR	5	9	0	0	0	1	22	14	0	0	0	2
7	Hayes & Herndon	WBT	793	659	621	344	496	467	909	1,142	737	827	612	950
7	Hayes & Herndon	WBL	145	71	156	87	154	102	34	59	45	75	43	90
7	Hayes & Herndon	NBR	101	47	109	61	110	200	48	48	56	62	57	201
7	Hayes & Herndon	NBT	28	10	176	236	134	332	2	3	150	229	108	325
7	Hayes & Herndon	NBL	37	13	46	31	47	400	0	0	9	18	10	387
7	Hayes & Herndon	EBR	7	22	15	41	15	365	0	0	8	19	8	343
7	Hayes & Herndon	EBT	563	829	380	420	451	514	980	1,349	797	940	868	1034
7	Hayes & Herndon	EBL	60	111	0	0	0	11	104	190	0	0	0	18
8	Veterans & Herndon	SBR	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	SBT	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	SBL	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	WBR	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	WBT	943	739	760	428	634	560	965	1,214	782	903	656	1035
8	Veterans & Herndon	WBL	0	0	795	989	1,213	1,450	0	0	795	989	1,213	1450
8	Veterans & Herndon	NBR	0	0	910	853	1,024	1,585	0	0	910	853	1,024	1585
8	Veterans & Herndon	NBT	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	NBL	0	0	0	0	0	7	0	0	0	0	0	7
8	Veterans & Herndon	EBR	0	0	0	0	0	28	0	0	0	0	0	28
8	Veterans & Herndon	EBT	722	881	539	467	611	677	1,036	1,416	853	1002	925	1212
8	Veterans & Herndon	EBL	0	0	0	0	0	0	0	0	0	0	0	0
9	Polk & Herndon	SBR	24	24	24	24	24	37	0	0	0	0	0	13
9	Polk & Herndon	SBT	51	60	114	162	133	436	22	48	85	150	104	424
9	Polk & Herndon	SBL	117	138	128	180	119	190	172	209	183	251	174	261
9	Polk & Herndon	WBR	66	134	123	145	102	135	121	216	178	227	157	217
9	Polk & Herndon	WBT	792	648	1,441	1,324	1,704	1,610	924	1,170	1,573	1,846	1,836	2,132
9	Polk & Herndon	WBL	85	287	79	253	110	270	205	284	199	250	230	267
9	Polk & Herndon	NBR	261	196	230	148	212	170	217	232	186	184	168	206
9	Polk & Herndon	NBT	25	59	58	174	98	260	15	59	48	174	88	260
9	Polk & Herndon	NBL	108	64	72	65	99	359	41	44	5	45	32	339

I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2017 Baseline Volumes AM	2017 Baseline Volumes PM	2017 W/Proj Volumes AM	2017 W/Proj Volumes PM	2007 Existing AM	2007 Existing PM	2017 Baseline Volumes AM	2017 Baseline Volumes PM	2017 W/Proj Volumes AM	2017 W/Proj Volumes PM
9	Polk & Herndon	EBR	78	88	53	69	115	341	30	54	5	35	67	307
9	Polk & Herndon	EBT	638	777	1,391	1,236	1,514	1,873	1,006	1,361	1,759	1,820	1,882	2,457
9	Polk & Herndon	EBL	6	8	6	8	6	41	0	0	0	0	0	33
10	Milburn & Herndon	SBR	204	133	375	276	351	387	81	65	252	208	228	319
10	Milburn & Herndon	SBT	301	214	275	270	306	333	193	117	167	173	198	236
10	Milburn & Herndon	SBL	359	151	297	258	284	167	232	79	170	186	157	95
10	Milburn & Herndon	WBR	108	204	158	228	142	253	114	119	164	143	148	168
10	Milburn & Herndon	WBT	611	802	1,102	1,428	1,391	1,560	1,116	1,374	1,607	2,000	1,896	2,132
10	Milburn & Herndon	WBL	81	90	98	186	92	140	51	115	68	211	62	165
10	Milburn & Herndon	NBR	131	58	151	101	172	86	96	89	116	132	137	117
10	Milburn & Herndon	NBT	168	263	184	278	217	287	79	214	95	229	128	238
10	Milburn & Herndon	NBL	114	137	152	23	159	72	53	230	91	116	98	165
10	Milburn & Herndon	EBR	130	122	3	53	12	104	185	260	58	114	67	242
10	Milburn & Herndon	EBT	723	736	1,470	1,194	1,556	1,661	1,173	1,400	1,920	1,858	2,006	2,325
10	Milburn & Herndon	EBL	179	260	291	402	293	475	37	142	149	284	151	357
11	Blythe & Herndon	SBR	1	9	0	21	11	13	8	26	2	38	18	30
11	Blythe & Herndon	SBT	0	1	0	1	0	1	0	0	0	0	0	0
11	Blythe & Herndon	SBL	50	60	50	60	50	60	0	0	0	0	0	0
11	Blythe & Herndon	WBR	50	60	50	60	50	60	0	0	0	0	0	0
11	Blythe & Herndon	WBT	800	1,104	1,365	1,838	1,615	1,956	1,273	1,582	1,838	2,316	2,088	2,434
11	Blythe & Herndon	WBL	2	4	2	4	2	4	0	0	0	0	0	0
11	Blythe & Herndon	NBR	0	4	0	4	0	4	0	0	0	0	0	0
11	Blythe & Herndon	NBT	1	0	1	0	1	0	0	0	0	0	0	0
11	Blythe & Herndon	NBL	0	2	0	2	0	2	0	0	0	0	0	0
11	Blythe & Herndon	EBR	1	1	1	1	1	1	0	0	0	0	0	0
11	Blythe & Herndon	EBT	1,222	940	1,910	1,544	2,005	1,910	1,487	1,543	2,175	2,147	2,270	2,513
11	Blythe & Herndon	EBL	0	1	17	6	17	0	14	24	31	29	31	23
12	Brawley & Herndon	SBR	130	151	156	201	161	219	20	36	46	86	51	104
12	Brawley & Herndon	SBT	561	308	580	342	585	381	74	92	93	126	98	165
12	Brawley & Herndon	SBL	180	309	204	314	202	315	33	19	57	24	55	25
12	Brawley & Herndon	WBR	56	159	59	178	59	173	17	33	20	52	20	47
12	Brawley & Herndon	WBT	833	1,472	1,355	2,073	1,584	2,301	1,173	1,501	1,695	2,102	1,924	2,330
12	Brawley & Herndon	WBL	103	184	184	300	260	266	369	394	450	510	526	476
12	Brawley & Herndon	NBR	57	132	134	255	236	202	362	366	439	489	541	436
12	Brawley & Herndon	NBT	161	611	177	651	186	685	53	114	69	154	78	188
12	Brawley & Herndon	NBL	148	240	216	485	253	459	120	222	188	467	225	441
12	Brawley & Herndon	EBR	55	127	97	263	203	319	151	163	193	299	299	355
12	Brawley & Herndon	EBT	920	1,329	1,657	1,833	1,690	2,244	1,367	1,477	2,104	1,981	2,137	2,392
12	Brawley & Herndon	EBL	92	262	125	301	124	324	23	35	56	74	55	97
13	Marks & Herndon	SBR	124	288	154	340	165	515	50	54	80	106	91	281
13	Marks & Herndon	SBT	141	204	173	294	187	263	115	198	147	288	161	257
13	Marks & Herndon	SBL	199	251	156	245	152	196	144	187	101	181	97	132
13	Marks & Herndon	WBR	222	352	217	334	206	342	154	141	149	123	138	131
13	Marks & Herndon	WBT	815	1,341	1,366	1,976	1,631	1,907	1,562	1,963	2,113	2598	2,378	2529
13	Marks & Herndon	WBL	204	300	204	214	204	226	11	111	11	25	11	37
13	Marks & Herndon	NBR	236	228	222	179	243	187	37	64	23	15	44	23
13	Marks & Herndon	NBT	119	219	166	256	179	293	138	215	185	252	198	289
13	Marks & Herndon	NBL	102	107	131	164	148	207	29	36	58	93	75	136
13	Marks & Herndon	EBR	49	74	209	124	341	213	19	35	179	85	311	174
13	Marks & Herndon	EBT	1,562	1,043	2,122	1,491	2,165	1,795	1,825	1,877	2,385	2325	2,428	2629
13	Marks & Herndon	EBL	100	183	172	325	137	269	46	58	118	200	83	144
14	West & Herndon	SBR	42	143	43	134	46	141	33	42	34	33	37	40
14	West & Herndon	SBT	92	136	250	247	213	294	108	161	266	272	229	319
14	West & Herndon	SBL	224	193	255	153	238	153	164	141	195	101	178	101
14	West & Herndon	WBR	117	278	230	238	207	170	57	201	170	161	147	93
14	West & Herndon	WBT	1,330	1,995	1,682	2,217	1,906	2,256	2,012	2,535	2,364	2757	2,588	2796
14	West & Herndon	WBL	296	266	50	167	74	172	364	240	118	141	142	146
14	West & Herndon	NBR	265	414	140	135	269	88	255	483	130	204	259	157
14	West & Herndon	NBT	69	129	113	239	139	338	50	234	94	344	120	443
14	West & Herndon	NBL	76	119	78	97	87	173	48	98	50	76	59	152
14	West & Herndon	EBR	133	129	154	202	219	96	56	103	77	176	142	70
14	West & Herndon	EBT	1,971	1,363	2,306	1,606	2,363	1,871	2,358	2,315	2,693	2558	2,750	2823
14	West & Herndon	EBL	55	87	57	88	61	90	24	43	26	44	30	46
15	Palm & Herndon	SBR	652	853	695	786	575	616	582	716	625	649	505	479
15	Palm & Herndon	SBT	641	690	1,036	1,289	1,248	1,321	326	658	721	1,257	933	1,289
15	Palm & Herndon	SBL	155	279	148	266	143	250	159	104	152	91	147	75
15	Palm & Herndon	WBR	336	196	338	161	313	151	89	168	91	133	66	123
15	Palm & Herndon	WBT	857	1,582	1,066	1,850	1,299	1,984	1,981	2,566	2,190	2,834	2,423	2,968
15	Palm & Herndon	WBL	220	248	236	172	120	91	182	297	198	221	82	140
15	Palm & Herndon	NBR	196	162	270	44	94	62	249	249	323	131	147	149
15	Palm & Herndon	NBT	674	757	979	1,102	1,023	1,087	415	766	720	1,111	764	1,096
15	Palm & Herndon	NBL	132	140	128	167	154	242	47	76	43	103	69	178
15	Palm & Herndon	EBR	95	50	99	81	98	97	75	47	79	78	78	94
15	Palm & Herndon	EBT	1,616	1,136	1,809	1,050	2,097	1,307	2,232	2,522	2,425	2,436	2,713	2,693
15	Palm & Herndon	EBL	792	766	757	819	776	800	707	607	672	660	691	641
16	Blackstone & Herndon	SBR	158	368	159	477	127	239	567	825	568	934	536	696
16	Blackstone & Herndon	SBT	342	705	687	853	678	1,115	554	862	899	1,010	890	1,272
16	Blackstone & Herndon	SBL	196	259	177	187	197	190	321	650	302	578	322	581
16	Blackstone & Herndon	WBR	213	236	460	323	354	330	468	299	715	386	609	393
16	Blackstone & Herndon	WBT	1,232	1,194	1,421	1,471	1,659	1,430	1,664	2,026	1,853	2,303	2,091	2,262
16	Blackstone & Herndon	WBL	98	158	95	458	208	475	114	288	111	588	224	605
16	Blackstone & Herndon	NBR	108	87	94	127	108	250	215	374	201	414	215	537
16	Blackstone & Herndon	NBT	219	525	287	765	276	852	492	1,113	560	1,353	549	1,440
16	Blackstone & Herndon	NBL	92	196	22	154	26	139	137	119	33	77	38	62
16	Blackstone & Herndon	EBR	124	323	133	326	150	322	29	38	38	41	55	37
16	Blackstone & Herndon	EBT	1,560	1,299	1,595	1,120	1,620	1,293	2,131	2,179	2,166	2,000	2,191	2,173
16	Blackstone & Herndon	EBL	146	151	298	120	315	128	450	707	602	676	619	684
17	Grantland & Parkway/Ramp	SBR	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	SBT	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	SBL	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	WBR	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	WBT	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	WBL	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	NBR	116	29	153	74	189	146	126	120	163	165	199	237
17	Grantland & Parkway/Ramp	NBT	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	NBL	263	162	81	55	78	211	444	534	137	181	259	583
17	Grantland & Parkway/Ramp	EBR	174	231	69	2	82	392	400	635	158	406	188	796
17	Grantland & Parkway/Ramp	EBT	499	290	460	473	474	1,157	281	295	242	478	256	1162
17	Grantland & Parkway/Ramp	EBL	0	0	0	0	0	0	0	0	0	0	0	0
18	Bryan & Palo Alto	SBR	0	0	0	0	15	52	0	0	0	0	15	52
18	Bryan & Palo Alto	SBT	10	21	151	220	220	146	5	22	146	221	215	147
18	Bryan & Palo Alto	SBL	296	59	297	59	296	61	0	0	1	0	0	2
18	Bryan & Palo Alto	WBR	356	70	356	71	356	71	0	0	0	1	0	1
18	Bryan & Palo Alto	WBT	0	0	0	0	261	706	0	0	0	0	261	706
18	Bryan & Palo Alto	WBL	2	2	0	0	0	1	3	11	0	0	0	4
18	Bryan & Palo Alto	NBR	1	2	0	0	0	4	9	5	0	0	0	7

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18	Bryan & Palo Alto	NBT	45	8	153	218	103	195	21	8	129	218	79	195
18	Bryan & Palo Alto	NBL	0	0	0	0	439	582	0	0	0	0	439	582
18	Bryan & Palo Alto	EBR	0	0	0	0	451	668	0	0	0	0	451	668
18	Bryan & Palo Alto	EBT	0	0	0	0	189	1,034	0	0	0	0	189	1034
18	Bryan & Palo Alto	EBL	0	0	0	0	196	650	0	0	0	0	196	650
19	Hayes & Palo Alto	SBR	256	80	253	69	253	97	3	11	0	0	0	28
19	Hayes & Palo Alto	SBT	7	34	236	310	276	583	0	0	229	276	269	549
19	Hayes & Palo Alto	SBL	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	WBR	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	WBT	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	WBL	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	NBR	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	NBT	25	12	242	297	193	521	0	0	217	285	168	509
19	Hayes & Palo Alto	NBL	167	41	183	121	429	761	0	0	16	80	262	720
19	Hayes & Palo Alto	EBR	127	50	183	105	321	711	0	0	56	55	194	661
19	Hayes & Palo Alto	EBT	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	EBL	157	81	148	76	154	454	9	5	0	0	6	378
20	Hayes & Veterans	SBR	0	0	272	304	268	834	0	0	272	304	268	834
20	Hayes & Veterans	SBT	0	0	13	27	28	69	0	0	13	27	28	69
20	Hayes & Veterans	SBL	0	0	0	0	167	307	0	0	0	0	167	307
20	Hayes & Veterans	WBR	0	0	0	0	247	447	0	0	0	0	247	447
20	Hayes & Veterans	WBT	0	0	795	989	966	1,017	0	0	795	989	966	1017
20	Hayes & Veterans	WBL	0	0	0	0	0	14	0	0	0	0	0	14
20	Hayes & Veterans	NBR	0	0	0	0	0	1	0	0	0	0	0	1
20	Hayes & Veterans	NBT	0	0	13	26	25	113	0	0	13	26	25	113
20	Hayes & Veterans	NBL	0	0	205	226	203	196	0	0	205	226	203	196
20	Hayes & Veterans	EBR	0	0	183	265	177	285	0	0	183	265	177	285
20	Hayes & Veterans	EBT	0	0	910	853	857	1,284	0	0	910	853	857	1284
20	Hayes & Veterans	EBL	0	0	219	339	157	669	0	0	219	339	157	669
21	Bryan & Veterans	SBR	0	0	126	91	594	1,386	0	0	126	91	594	1386
21	Bryan & Veterans	SBT	0	0	67	143	208	373	0	0	67	143	208	373
21	Bryan & Veterans	SBL	0	0	16	6	63	263	0	0	16	6	63	263
21	Bryan & Veterans	WBR	0	0	5	16	206	111	0	0	5	16	206	111
21	Bryan & Veterans	WBT	0	0	1,249	1,486	1,068	1,339	0	0	1,249	1486	1,068	1339
21	Bryan & Veterans	WBL	0	0	19	17	163	597	0	0	19	17	163	597
21	Bryan & Veterans	NBR	0	0	12	19	98	530	0	0	12	19	98	530
21	Bryan & Veterans	NBT	0	0	53	121	304	269	0	0	53	121	304	269
21	Bryan & Veterans	NBL	0	0	168	502	404	889	0	0	168	502	404	889
21	Bryan & Veterans	EBR	0	0	140	537	764	593	0	0	140	537	764	593
21	Bryan & Veterans	EBT	0	0	1,285	1,432	1,030	1,446	0	0	1,285	1432	1,030	1446
21	Bryan & Veterans	EBL	0	0	83	147	836	1,094	0	0	83	147	836	1094
22	Bryan & Sierra	SBR	0	0	0	0	697	398	0	0	0	0	697	398
22	Bryan & Sierra	SBT	0	0	157	466	348	759	0	0	157	466	348	759
22	Bryan & Sierra	SBL	0	0	70	232	89	405	0	0	70	232	89	405
22	Bryan & Sierra	WBR	0	0	133	233	203	205	0	0	133	233	203	205
22	Bryan & Sierra	WBT	0	0	0	0	134	110	0	0	0	0	134	110
22	Bryan & Sierra	WBL	0	0	9	8	51	157	0	0	9	8	51	157
22	Bryan & Sierra	NBR	0	0	5	10	11	86	0	0	5	10	11	86
22	Bryan & Sierra	NBT	0	0	100	408	412	670	0	0	100	408	412	670
22	Bryan & Sierra	NBL	0	0	0	0	269	209	0	0	0	0	269	209
22	Bryan & Sierra	EBR	0	0	0	0	91	245	0	0	0	0	91	245
22	Bryan & Sierra	EBT	0	0	0	0	26	283	0	0	0	0	26	283
22	Bryan & Sierra	EBL	0	0	0	0	201	695	0	0	0	0	201	695
23	Polk & Sierra	SBR	25	47	25	47	127	168	0	0	0	0	102	121
23	Polk & Sierra	SBT	155	219	47	100	27	141	208	283	100	164	80	205
23	Polk & Sierra	SBL	51	68	81	83	88	127	50	95	80	110	87	154
23	Polk & Sierra	WBR	60	56	60	63	96	120	55	105	55	112	91	169
23	Polk & Sierra	WBT	58	60	136	205	278	309	0	0	78	145	220	249
23	Polk & Sierra	WBL	36	11	16	5	16	36	23	12	3	6	3	37
23	Polk & Sierra	NBR	21	22	13	0	15	26	10	26	2	4	4	30
23	Polk & Sierra	NBT	199	207	104	61	97	107	202	244	107	98	100	144
23	Polk & Sierra	NBL	47	48	101	137	132	156	0	0	54	89	85	108
23	Polk & Sierra	EBR	63	11	91	90	105	151	0	0	28	79	42	140
23	Polk & Sierra	EBT	93	46	135	199	158	572	0	0	42	153	65	526
23	Polk & Sierra	EBL	48	32	48	32	48	90	0	0	0	0	0	58
25	Grantland & Bullard	SBR	10	10	3	27	9	50	18	48	11	65	17	88
25	Grantland & Bullard	SBT	134	163	15	55	17	237	266	406	29	137	34	480
25	Grantland & Bullard	SBL	56	61	56	53	56	56	0	9	0	1	0	4
25	Grantland & Bullard	WBR	170	65	170	47	170	59	0	19	0	1	0	13
25	Grantland & Bullard	WBT	4	4	11	42	11	24	0	2	7	40	7	22
25	Grantland & Bullard	WBL	2	3	0	1	0	1	7	15	1	7	1	7
25	Grantland & Bullard	NBR	0	1	0	0	0	0	12	21	3	6	3	6
25	Grantland & Bullard	NBT	244	106	38	22	59	127	349	413	54	84	85	434
25	Grantland & Bullard	NBL	7	6	11	15	11	23	10	15	14	24	14	32
25	Grantland & Bullard	EBR	6	2	7	4	9	6	5	11	6	13	8	15
25	Grantland & Bullard	EBT	3	1	9	8	6	5	0	1	6	8	3	5
25	Grantland & Bullard	EBL	15	13	8	2	71	48	90	45	46	34	146	80
26	SR-99 NB Ramps & Veterans	SBR	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	SBT	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	SBL	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	WBR	0	0	99	204	96	174	0	0	99	204	96	174
26	SR-99 NB Ramps & Veterans	WBT	0	0	1,644	2,706	2,069	3,892	0	0	1,644	2706	2,069	3892
26	SR-99 NB Ramps & Veterans	WBL	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	NBR	0	0	352	729	994	1,119	0	0	352	729	994	1119
26	SR-99 NB Ramps & Veterans	NBT	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	NBL	0	0	225	708	199	213	0	0	225	708	199	213
26	SR-99 NB Ramps & Veterans	EBR	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	EBT	0	0	1,733	1,725	2,036	2,004	0	0	1,733	1725	2,036	2004
26	SR-99 NB Ramps & Veterans	EBL	0	0	182	436	237	683	0	0	182	436	237	683
27	SR-99 SB Ramps & Veterans	SBR	0	0	73	140	82	456	0	0	73	140	82	456
27	SR-99 SB Ramps & Veterans	SBT	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	SBL	0	0	44	122	21	146	0	0	44	122	21	146
27	SR-99 SB Ramps & Veterans	WBR	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	WBT	0	0	1,185	2,605	1,334	2,519	0	0	1,185	2605	1,334	2519
27	SR-99 SB Ramps & Veterans	WBL	0	0	684	809	935	1,586	0	0	684	809	935	1586
27	SR-99 SB Ramps & Veterans	NBR	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	NBT	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	NBL	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	EBR	0	0	459	382	362	109	0	0	459	382	362	109
27	SR-99 SB Ramps & Veterans	EBT	0	0	1,872	2,039	2,253	2,541	0	0	1,872	2039	2,253	2541
27	SR-99 SB Ramps & Veterans	EBL	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	SBR	129	34	131	16	179	307	30	43	32	25	80	316
28	Bullard & Carnegie	SBT	39	11	156	428	425	845	9	29	126	446	395	863
28	Bullard & Carnegie	SBL	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	WBR	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	WBT	0	0	0	0	0	0	0	0	0	0	0	0

I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2017 Baseline Volumes AM	2017 Baseline Volumes PM	2017 W/Proj Volumes AM	2017 W/Proj Volumes PM	2007 Existing AM	2007 Existing PM	2017 Baseline Volumes AM	2017 Baseline Volumes PM	2017 W/Proj Volumes AM	2017 W/Proj Volumes PM
28	Bullard & Carnegie	WBL	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	NBR	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	NBT	107	22	185	366	578	476	7	27	85	371	478	481
28	Bullard & Carnegie	NBL	416	239	467	527	539	555	554	424	605	712	677	740
28	Bullard & Carnegie	EBR	159	573	511	689	409	455	226	712	578	828	476	594
28	Bullard & Carnegie	EBT	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	EBL	92	93	79	82	270	498	30	44	17	33	208	449
29	Golden State & Carnegie	SBR	2	3	64	68	94	132	28	23	90	88	120	152
29	Golden State & Carnegie	SBT	63	104	506	397	609	915	102	58	545	351	648	869
29	Golden State & Carnegie	SBL	35	101	462	372	403	263	50	164	477	435	418	326
29	Golden State & Carnegie	WBR	119	42	290	497	398	464	79	122	250	577	358	544
29	Golden State & Carnegie	WBT	0	0	11	1	4	8	108	94	119	75	112	102
29	Golden State & Carnegie	WBL	435	196	300	57	311	390	386	265	251	126	262	459
29	Golden State & Carnegie	NBR	188	529	135	410	272	673	191	424	138	305	275	568
29	Golden State & Carnegie	NBT	108	136	150	425	387	901	13	35	55	324	292	800
29	Golden State & Carnegie	NBL	0	0	14	33	17	27	145	102	159	135	162	129
29	Golden State & Carnegie	EBR	0	1	5	1	1	36	48	182	53	158	49	217
29	Golden State & Carnegie	EBT	0	0	1	1	0	1	34	157	31	108	34	137
29	Golden State & Carnegie	EBL	1	1	33	199	54	228	8	37	40	235	61	264
30	Dante & Bullard	SBR	47	27	47	47	47	31	0	0	0	20	0	4
30	Dante & Bullard	SBT	13	14	13	14	13	28	0	0	0	0	0	14
30	Dante & Bullard	SBL	90	23	120	49	105	201	113	105	143	131	128	283
30	Dante & Bullard	WBR	25	38	16	58	28	53	69	141	60	161	72	156
30	Dante & Bullard	WBT	241	190	503	905	929	942	148	415	410	1130	836	1167
30	Dante & Bullard	WBL	25	56	25	56	25	56	0	0	0	0	0	0
30	Dante & Bullard	NBR	18	9	18	9	18	9	0	0	0	0	0	0
30	Dante & Bullard	NBT	11	6	11	11	11	14	0	0	0	5	0	8
30	Dante & Bullard	NBL	166	56	166	56	166	56	0	0	0	0	0	0
30	Dante & Bullard	EBR	36	56	36	56	36	56	0	0	0	0	0	0
30	Dante & Bullard	EBT	136	385	691	1,033	834	1,132	264	351	819	999	962	1098
30	Dante & Bullard	EBL	17	101	17	101	17	101	0	0	0	0	0	0
31	Palm & Bullard	SBR	52	90	196	132	215	365	172	270	316	312	335	545
31	Palm & Bullard	SBT	413	732	582	1,172	676	1,094	461	766	630	1206	724	1128
31	Palm & Bullard	SBL	77	75	55	76	29	79	130	128	108	129	82	132
31	Palm & Bullard	WBR	85	65	65	114	62	91	112	93	92	142	89	119
31	Palm & Bullard	WBT	432	703	663	1,190	743	1,225	657	929	888	1416	968	1451
31	Palm & Bullard	WBL	93	142	216	55	115	35	109	302	232	118	131	195
31	Palm & Bullard	NBR	73	141	55	383	52	417	130	150	112	392	109	426
31	Palm & Bullard	NBT	382	757	637	773	625	898	423	763	678	779	666	904
31	Palm & Bullard	NBL	43	158	43	42	60	51	20	216	20	100	37	109
31	Palm & Bullard	EBR	69	68	66	99	79	111	55	29	52	60	65	72
31	Palm & Bullard	EBT	704	534	894	560	869	649	881	1,000	1,071	1026	1,046	1115
31	Palm & Bullard	EBL	137	148	192	320	107	397	213	306	268	478	183	555
32	Bryan & Veterans	SBR	0	0	144	308	163	295	0	0	144	308	163	295
32	Bryan & Veterans	SBT	0	0	802	1,667	863	1,714	0	0	802	1667	863	1714
32	Bryan & Veterans	SBL	0	0	312	770	390	967	0	0	312	770	390	967
32	Bryan & Veterans	WBR	0	0	665	794	867	882	0	0	665	794	867	882
32	Bryan & Veterans	WBT	0	0	14	51	16	76	0	0	14	51	16	76
32	Bryan & Veterans	WBL	0	0	0	5	0	0	0	0	0	5	0	0
32	Bryan & Veterans	NBR	0	0	0	0	0	0	0	0	0	0	0	0
32	Bryan & Veterans	NBT	0	0	1,447	1,415	1,525	1,580	0	0	1,447	1415	1,525	1580
32	Bryan & Veterans	NBL	0	0	8	26	7	23	0	0	8	26	7	23
32	Bryan & Veterans	EBR	0	0	8	13	7	19	0	0	8	13	7	19
32	Bryan & Veterans	EBT	0	0	22	32	22	33	0	0	22	32	22	33
32	Bryan & Veterans	EBL	0	0	218	211	223	188	0	0	218	211	223	188
33	Grantland & Barstow	SBR	8	6	4	1	4	27	11	26	7	21	7	47
33	Grantland & Barstow	SBT	122	86	11	24	11	114	192	290	18	82	18	318
33	Grantland & Barstow	SBL	6	6	1	2	1	5	56	90	6	36	9	82
33	Grantland & Barstow	WBR	9	6	2	1	3	3	72	128	15	30	21	65
33	Grantland & Barstow	WBT	4	10	91	210	94	154	23	81	110	281	113	225
33	Grantland & Barstow	WBL	4	4	3	0	3	0	1	5	0	0	0	0
33	Grantland & Barstow	NBR	5	2	4	0	4	0	1	6	0	0	0	0
33	Grantland & Barstow	NBT	206	80	25	19	2	120	249	288	30	69	45	328
33	Grantland & Barstow	NBL	5	2	12	29	12	79	2	9	9	36	9	86
33	Grantland & Barstow	EBR	7	2	21	9	24	15	4	4	18	11	21	17
33	Grantland & Barstow	EBT	5	4	317	149	235	93	56	20	368	165	286	109
33	Grantland & Barstow	EBL	14	6	4	1	7	14	22	16	12	11	15	24
34	SR-99 SB Ramps & Shaw	SBR	38	55	139	285	38	55	0	0	101	230	0	0
34	SR-99 SB Ramps & Shaw	SBT	0	0	0	0	0	0	0	0	0	0	0	0
34	SR-99 SB Ramps & Shaw	SBL	227	259	314	357	227	259	0	0	87	98	0	0
34	SR-99 SB Ramps & Shaw	WBR	0	0	0	7	0	100	0	0	0	7	0	100
34	SR-99 SB Ramps & Shaw	WBT	642	1,001	711	766	709	910	730	1,367	799	1132	797	1276
34	SR-99 SB Ramps & Shaw	WBL	0	0	0	0	0	0	141	149	0	0	0	0
34	SR-99 SB Ramps & Shaw	NBR	0	0	0	0	0	0	148	181	0	0	0	0
34	SR-99 SB Ramps & Shaw	NBT	0	0	0	0	0	0	0	0	0	0	0	0
34	SR-99 SB Ramps & Shaw	NBL	0	0	0	0	0	0	59	101	0	0	0	0
34	SR-99 SB Ramps & Shaw	EBR	317	181	93	46	62	97	466	414	242	279	211	222
34	SR-99 SB Ramps & Shaw	EBT	586	560	675	512	661	788	758	728	847	680	833	956
34	SR-99 SB Ramps & Shaw	EBL	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	SBR	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	SBT	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	SBL	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	WBR	192	302	443	915	447	959	0	0	251	613	255	657
35	SR-99 NB Ramps & Shaw	WBT	925	1,159	905	869	903	1,106	819	1,429	799	1139	797	1376
35	SR-99 NB Ramps & Shaw	WBL	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	NBR	109	237	119	259	129	237	0	0	10	22	20	0
35	SR-99 NB Ramps & Shaw	NBT	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	NBL	202	214	571	648	573	640	0	0	369	434	371	426
35	SR-99 NB Ramps & Shaw	EBR	0	0	24	32	22	33	0	0	24	32	22	33
35	SR-99 NB Ramps & Shaw	EBT	702	818	616	355	602	631	910	1,111	824	648	810	924
35	SR-99 NB Ramps & Shaw	EBL	0	0	0	0	0	0	0	0	0	0	0	0
36	Golden State & Shaw	SBR	14	23	3	7	3	11	124	130	23	37	29	61
36	Golden State & Shaw	SBT	314	216	345	241	389	760	292	230	323	255	367	774
36	Golden State & Shaw	SBL	109	79	520	334	563	587	183	213	594	468	637	721
36	Golden State & Shaw	WBR	74	166	130	458	379	852	121	139	177	431	426	825
36	Golden State & Shaw	WBT	791	1,343	810	1,368	802	1,546	724	1,284	743	1309	735	1487
36	Golden State & Shaw	WBL	276	321	352	493	349	429	418	351	494	523	491	459
36	Golden State & Shaw	NBR	405	686	579	882	594	794	304	416	478	612	493	524
36	Golden State & Shaw	NBT	236	502	241	594	331	886	242	303	247	395	337	687
36	Golden State & Shaw	NBL	15	40	15	43	16	49	3	7	3	10	4	16
36	Golden State & Shaw	EBR	33	47	40	47	41	59	5	7	12	7	13	19
36	Golden State & Shaw	EBT	705	936	653	703	631	998	856	962	804	729	782	1024
36	Golden State & Shaw	EBL	26	20	5	5	9	7	52	180	9	44	18	67
37	Brawley & Shaw	SBR	130	151	130	150	129	150	5	6	5	5	4	5
37	Brawley & Shaw	SBT	561	308	767	411	742	476	353	238	559	341	534	406
37	Brawley & Shaw	SBL	180	309	113	315	13	381	359	247	292	253	192	319

I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2017 Baseline Volumes AM	2017 Baseline Volumes PM	2017 W/Proj Volumes AM	2017 W/Proj Volumes PM	2007 Existing AM	2007 Existing PM	2017 Baseline Volumes AM	2017 Baseline Volumes PM	2017 W/Proj Volumes AM	2017 W/Proj Volumes PM
37	Brawley & Shaw	WBR	56	159	103	83	58	178	202	389	249	313	204	408
37	Brawley & Shaw	WBT	833	1,472	1,002	1,756	1,230	1,895	699	1,103	868	1387	1,096	1526
37	Brawley & Shaw	WBL	103	184	112	209	107	208	361	214	370	239	365	238
37	Brawley & Shaw	NBR	57	132	88	132	87	124	101	432	132	432	131	424
37	Brawley & Shaw	NBT	161	611	159	701	157	687	229	379	227	469	225	455
37	Brawley & Shaw	NBL	148	240	171	373	195	419	33	60	56	193	80	239
37	Brawley & Shaw	EBR	55	127	116	192	114	216	40	55	101	120	99	144
37	Brawley & Shaw	EBT	920	1,329	1,294	1,411	1,287	1,606	716	1,035	1,090	1117	1,083	1312
37	Brawley & Shaw	EBL	92	262	92	260	92	260	3	6	3	4	3	4
38	Marks & Shaw	SBR	313	326	464	556	527	835	328	507	479	737	542	1016
38	Marks & Shaw	SBT	384	320	407	362	433	292	581	696	604	738	630	668
38	Marks & Shaw	SBL	243	195	234	178	242	176	91	54	82	37	90	35
38	Marks & Shaw	WBR	52	150	43	175	39	190	44	86	35	111	31	126
38	Marks & Shaw	WBT	735	1,209	893	1,483	1,116	1,352	1,133	1,405	1,291	1679	1,514	1548
38	Marks & Shaw	WBL	128	274	136	453	141	556	147	371	155	550	160	653
38	Marks & Shaw	NBR	340	162	180	205	246	612	337	251	177	294	243	701
38	Marks & Shaw	NBT	330	526	421	598	424	479	413	843	504	915	507	796
38	Marks & Shaw	NBL	158	386	182	417	181	398	45	108	69	139	68	120
38	Marks & Shaw	EBR	69	198	95	260	92	300	71	88	97	150	94	190
38	Marks & Shaw	EBT	1,118	1,180	1,730	1,478	1,719	1,364	959	1,421	1,571	1719	1,560	1605
38	Marks & Shaw	EBL	165	450	78	470	127	699	419	573	332	593	381	822
39	West & Shaw	SBR	131	140	6	7	58	23	237	219	112	86	164	102
39	West & Shaw	SBT	371	438	412	646	434	752	523	581	564	789	586	895
39	West & Shaw	SBL	133	121	148	197	149	407	50	52	65	128	66	338
39	West & Shaw	WBR	60	103	46	125	61	131	38	82	24	104	39	110
39	West & Shaw	WBT	852	1,237	1,137	1,668	1,320	1,374	1,202	1,805	1,487	2236	1,670	1942
39	West & Shaw	WBL	137	237	148	165	104	30	236	478	247	406	203	271
39	West & Shaw	NBR	231	117	360	92	400	74	260	345	389	320	429	302
39	West & Shaw	NBT	478	293	462	291	494	303	485	798	469	796	501	808
39	West & Shaw	NBL	174	197	195	271	179	309	152	244	173	318	157	356
39	West & Shaw	EBR	125	109	136	92	146	214	173	180	184	163	194	285
39	West & Shaw	EBT	1,224	1,137	1,656	1,302	1,668	1,278	1,570	1,604	2,002	1769	2,014	1745
39	West & Shaw	EBL	105	182	111	245	148	347	79	253	85	316	122	418
40	SR-99 SB Ramps & Ashlan	SBR	65	68	86	92	93	124	26	37	47	61	54	93
40	SR-99 SB Ramps & Ashlan	SBT	21	66	371	120	354	226	39	90	389	144	372	250
40	SR-99 SB Ramps & Ashlan	SBL	116	121	191	203	178	385	160	217	235	299	222	481
40	SR-99 SB Ramps & Ashlan	WBR	0	0	0	0	0	0	0	0	0	0	0	0
40	SR-99 SB Ramps & Ashlan	WBT	374	947	595	861	579	766	922	1,684	1,143	1598	1,127	1503
40	SR-99 SB Ramps & Ashlan	WBL	109	319	116	294	107	415	152	215	159	190	150	311
40	SR-99 SB Ramps & Ashlan	NBR	310	396	355	564	448	568	315	308	360	476	453	480
40	SR-99 SB Ramps & Ashlan	NBT	0	0	0	0	0	0	0	0	0	0	0	0
40	SR-99 SB Ramps & Ashlan	NBL	18	45	29	54	29	218	4	6	15	15	15	179
40	SR-99 SB Ramps & Ashlan	EBR	31	59	30	70	31	179	3	3	2	14	3	123
40	SR-99 SB Ramps & Ashlan	EBT	1,191	850	1,243	1,041	1,285	907	1,557	1,252	1,609	1443	1,651	1309
40	SR-99 SB Ramps & Ashlan	EBL	0	0	0	0	0	0	0	0	0	0	0	0
41	SR-99 NB Ramps & Ashlan	SBR	168	315	251	356	233	458	69	99	152	140	134	242
41	SR-99 NB Ramps & Ashlan	SBT	0	0	0	0	0	0	0	0	0	0	0	0
41	SR-99 NB Ramps & Ashlan	SBL	155	164	190	239	220	333	64	195	99	270	129	364
41	SR-99 NB Ramps & Ashlan	WBR	226	564	214	475	245	411	267	454	255	365	286	301
41	SR-99 NB Ramps & Ashlan	WBT	359	725	510	1,050	571	1,249	972	1,271	1,123	1596	1,184	1795
41	SR-99 NB Ramps & Ashlan	WBL	0	0	0	0	0	0	0	0	0	0	0	0
41	SR-99 NB Ramps & Ashlan	NBR	415	701	373	488	370	430	332	437	290	224	287	166
41	SR-99 NB Ramps & Ashlan	NBT	7	15	6	105	5	134	118	64	108	154	84	183
41	SR-99 NB Ramps & Ashlan	NBL	210	464	292	217	288	166	334	729	416	482	412	431
41	SR-99 NB Ramps & Ashlan	EBR	0	0	0	0	0	0	0	0	0	0	0	0
41	SR-99 NB Ramps & Ashlan	EBT	872	920	970	1,090	1,015	1,187	1,235	1,079	1,333	1249	1,378	1346
41	SR-99 NB Ramps & Ashlan	EBL	280	192	350	326	363	348	125	103	195	237	208	259
241	Golden State NB Ramps & Ve	SBR	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Ve	SBT	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Ve	SBL	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Ve	WBR	0	0	3	18	155	370	0	0	3	18	155	370
241	Golden State NB Ramps & Ve	WBT	0	0	1,540	2,062	1,911	3,243	0	0	1,540	2062	1,911	3243
241	Golden State NB Ramps & Ve	WBL	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Ve	NBR	0	0	52	121	197	459	0	0	52	121	197	459
241	Golden State NB Ramps & Ve	NBT	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Ve	NBL	0	0	254	852	277	434	0	0	254	852	277	434
241	Golden State NB Ramps & Ve	EBR	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Ve	EBT	0	0	1,456	1,994	2,433	2,674	0	0	1,456	1994	2,433	2674
241	Golden State NB Ramps & Ve	EBL	0	0	17	15	306	613	0	0	17	15	306	613
242	Golden State SB Ramps & Ve	SBR	0	0	20	57	173	747	0	0	20	57	173	747
242	Golden State SB Ramps & Ve	SBT	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Ve	SBL	0	0	2	17	126	455	0	0	2	17	126	455
242	Golden State SB Ramps & Ve	WBR	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Ve	WBT	0	0	1,723	2,852	1,993	3,320	0	0	1,723	2852	1,993	3320
242	Golden State SB Ramps & Ve	WBL	0	0	71	61	196	358	0	0	71	61	196	358
242	Golden State SB Ramps & Ve	NBR	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Ve	NBT	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Ve	NBL	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Ve	EBR	0	0	614	461	416	291	0	0	614	461	416	291
242	Golden State SB Ramps & Ve	EBT	0	0	1,471	1,992	2,613	2,832	0	0	1,471	1992	2,613	2832
242	Golden State SB Ramps & Ve	EBL	0	0	0	0	0	0	0	0	0	0	0	0

			Post Processed Turning Movement Volumes						Raw Model Turning Movement Volumes					
I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2019 Baseline Volumes AM	2019 Baseline Volumes PM	2019 W/Proj Volumes AM	2019 W/Proj Volumes PM	2007 Existing AM	2007 Existing PM	2019 Baseline Volumes AM	2019 Baseline Volumes PM	2019 W/Proj Volumes AM	2019 W/Proj Volumes PM
1	Parkway & Herndon	SBR	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	SBT	29	32	29	34	29	34	2	4	2	6	2	6
1	Parkway & Herndon	SBL	94	86	92	80	92	83	5	12	3	6	3	9
1	Parkway & Herndon	WBR	138	120	135	80	136	147	8	49	5	9	6	76
1	Parkway & Herndon	WBT	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	WBL	554	452	284	467	330	1,525	680	926	410	941	456	1,999
1	Parkway & Herndon	NBR	209	123	82	51	98	249	444	533	175	222	333	659
1	Parkway & Herndon	NBT	11	13	12	14	12	14	0	1	1	2	1	2
1	Parkway & Herndon	NBL	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	EBR	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	EBT	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	EBL	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	SBR	31	55	9	31	9	20	42	74	20	50	20	39
2	SR-99 SB Ramps & Herndon	SBT	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	SBL	16	36	173	243	270	44	172	153	329	360	426	161
2	SR-99 SB Ramps & Herndon	WBR	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	WBT	765	582	514	582	560	1,719	646	900	395	900	441	2,037
2	SR-99 SB Ramps & Herndon	WBL	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	NBR	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	NBT	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	NBL	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	EBR	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	EBT	304	207	33	87	192	330	448	545	177	228	336	668
2	SR-99 SB Ramps & Herndon	EBL	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	SBR	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	SBT	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	SBL	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	WBR	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	WBT	727	524	492	549	529	1,681	584	805	349	830	386	1,962
3	SR-99 NB Ramps & Herndon	WBL	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	NBR	337	533	509	595	979	1,243	227	417	399	479	869	1,127
3	SR-99 NB Ramps & Herndon	NBT	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	NBL	42	65	27	40	35	45	62	95	47	70	55	75
3	SR-99 NB Ramps & Herndon	EBR	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	EBT	317	251	203	142	459	382	620	698	506	589	762	829
3	SR-99 NB Ramps & Herndon	EBL	0	0	0	0	0	0	0	0	0	0	0	0
4	Golden State & Herndon	SBR	126	60	137	111	136	89	2	6	13	57	12	35
4	Golden State & Herndon	SBT	49	146	239	163	170	230	49	74	239	91	170	158
4	Golden State & Herndon	SBL	205	387	255	329	390	402	501	623	551	565	686	638
4	Golden State & Herndon	WBR	435	299	452	324	374	386	508	653	525	678	447	740
4	Golden State & Herndon	WBT	569	413	349	388	369	1,155	542	688	322	663	342	1,430
4	Golden State & Herndon	WBL	40	47	68	60	151	390	53	77	81	90	164	420
4	Golden State & Herndon	NBR	45	81	43	98	113	452	20	72	18	89	88	443
4	Golden State & Herndon	NBT	150	140	114	137	146	240	45	67	9	64	41	167
4	Golden State & Herndon	NBL	50	41	23	40	41	427	41	111	14	110	32	497
4	Golden State & Herndon	EBR	42	49	179	186	369	356	131	112	268	249	458	419
4	Golden State & Herndon	EBT	552	620	471	430	1,014	1,161	656	944	575	754	1,118	1,485
4	Golden State & Herndon	EBL	45	75	48	81	40	68	60	60	63	66	55	53
5	Weber & Herndon	SBR	0	0	29	79	33	96	32	91	61	170	65	187
5	Weber & Herndon	SBT	0	0	0	1	0	0	0	0	0	1	0	0
5	Weber & Herndon	SBL	0	0	0	0	0	3	0	0	0	0	0	3
5	Weber & Herndon	WBR	0	0	0	0	0	0	0	0	0	0	0	0
5	Weber & Herndon	WBT	1,068	753	846	679	869	1,819	1,059	1,312	837	1,238	860	2,378
5	Weber & Herndon	WBL	3	1	5	9	7	18	5	11	7	19	9	28
5	Weber & Herndon	NBR	2	2	9	5	13	15	7	10	14	13	18	23
5	Weber & Herndon	NBT	0	0	0	0	0	0	0	0	0	0	0	0
5	Weber & Herndon	NBL	1	1	18	8	17	11	13	15	30	22	29	25
5	Weber & Herndon	EBR	0	3	5	20	5	23	8	19	13	36	13	39
5	Weber & Herndon	EBT	787	1,089	671	783	1,403	1,926	1,104	1,552	988	1,246	1,720	2,389
5	Weber & Herndon	EBL	0	0	77	58	92	71	66	67	143	125	158	138
6	Bryan & Herndon	SBR	0	0	144	282	184	551	0	0	144	282	184	551
6	Bryan & Herndon	SBT	0	0	66	77	123	401	0	0	66	77	123	401
6	Bryan & Herndon	SBL	0	0	35	46	26	55	0	0	35	46	26	55
6	Bryan & Herndon	WBR	0	0	43	47	22	70	0	0	43	47	22	70
6	Bryan & Herndon	WBT	925	714	598	314	480	611	1,033	1,274	706	874	588	1,171
6	Bryan & Herndon	WBL	53	2	52	2	51	50	7	16	6	13	5	64
6	Bryan & Herndon	NBR	138	3	138	0	138	1	14	10	14	7	14	4
6	Bryan & Herndon	NBT	0	0	58	98	98	125	0	0	58	98	98	125
6	Bryan & Herndon	NBL	256	69	283	156	380	720	56	40	83	127	180	691
6	Bryan & Herndon	EBR	244	89	283	159	457	377	32	66	71	136	245	354
6	Bryan & Herndon	EBT	506	951	223	382	293	565	1,070	1,529	787	960	857	1,143
6	Bryan & Herndon	EBL	0	0	170	281	287	766	0	0	170	281	287	766
7	Hayes & Herndon	SBR	129	43	0	0	0	11	130	148	0	0	0	38
7	Hayes & Herndon	SBT	114	9	289	255	297	228	2	4	177	250	185	223
7	Hayes & Herndon	SBL	5	5	0	0	0	12	8	19	0	0	0	26
7	Hayes & Herndon	WBR	5	9	0	0	0	7	22	14	0	0	0	12
7	Hayes & Herndon	WBT	793	659	629	430	487	400	909	1,142	745	913	603	883
7	Hayes & Herndon	WBL	145	71	160	93	155	136	34	59	49	81	44	124
7	Hayes & Herndon	NBR	101	47	118	68	117	78	48	48	65	69	64	79
7	Hayes & Herndon	NBT	28	10	190	258	133	285	2	3	164	251	107	278
7	Hayes & Herndon	NBL	37	13	47	34	48	396	0	0	10	21	11	383
7	Hayes & Herndon	EBR	7	22	16	43	25	109	0	0	9	21	18	87
7	Hayes & Herndon	EBT	563	829	410	472	462	537	980	1,349	827	992	879	1057
7	Hayes & Herndon	EBL	60	111	0	0	0	33	104	190	0	0	0	57
8	Veterans & Herndon	SBR	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	SBT	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	SBL	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	WBR	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	WBT	943	739	772	519	626	545	965	1,214	794	994	648	1020
8	Veterans & Herndon	WBL	0	0	824	1,022	1,183	1,422	0	0	824	1022	1,183	1422
8	Veterans & Herndon	NBR	0	0	941	848	1,047	1,770	0	0	941	848	1,047	1770
8	Veterans & Herndon	NBT	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	NBL	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	EBR	0	0	0	0	0	63	0	0	0	0	0	63
8	Veterans & Herndon	EBT	722	881	578	526	629	564	1,036	1,416	892	1061	943	1099
8	Veterans & Herndon	EBL	0	0	0	0	0	0	0	0	0	0	0	0
9	Polk & Herndon	SBR	24	24	24	24	24	33	0	0	0	0	0	9
9	Polk & Herndon	SBT	51	60	126	197	143	540	22	48	97	185	114	528
9	Polk & Herndon	SBL	117	138	130	183	121	180	172	209	185	254	176	251
9	Polk & Herndon	WBR	66	134	132	167	113	132	121	216	187	249	168	214
9	Polk & Herndon	WBT	792	648	1,481	1,447	1,669	1,732	924	1,170	1,613	1,969	1,801	2,254
9	Polk & Herndon	WBL	85	287	75	316	160	276	205	284	195	313	280	273
9	Polk & Herndon	NBR	261	196	280	154	225	241	217	232	236	190	181	277
9	Polk & Herndon	NBT	25	59	64	158	107	452	15	59	54	158	97	452
9	Polk & Herndon	NBL	108	64	72	66	97	199	41	44	5	46	30	179
9	Polk & Herndon	EBR	78	88	59	102	136	250	30	54	11	68	88	216
9	Polk & Herndon	EBT	638	777	1,454	1,256	1,534	2,069	1,006	1,361	1,822	1,840	1,902	2,653
9	Polk & Herndon	EBL	6	8	6	8	6	8	0	0	0	0	0	0
10	Milburn & Herndon	SBR	204	133	379	298	333	393	81	65	256	230	210	325
10	Milburn & Herndon	SBT	301	214	271	306	334	350	193	117	163	209	226	253
10	Milburn & Herndon	SBL	359	151	298	250	321	172	232	79	171	178	194	100
10	Milburn & Herndon	WBR	108	204	165	241	147	236	114	119	171	156	153	151
10	Milburn & Herndon	WBT	611	802	1,145	1,608	1,432	1,661	1,116	1,374	1,650	2,180	1,937	2,233
10	Milburn & Herndon	WBL	81	90	103	250	112	134	51	115	73	275	82	159

I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2019 Baseline Volumes AM	2019 Baseline Volumes PM	2019 W/Proj Volumes AM	2019 W/Proj Volumes PM	2007 Existing AM	2007 Existing PM	2019 Baseline Volumes AM	2019 Baseline Volumes PM	2019 W/Proj Volumes AM	2019 W/Proj Volumes PM
10	Milburn & Herndon	NBR	131	58	180	112	183	113	96	89	145	143	148	144
10	Milburn & Herndon	NBT	168	263	182	311	239	296	79	214	93	262	150	247
10	Milburn & Herndon	NBL	114	137	150	28	163	89	53	230	89	121	102	182
10	Milburn & Herndon	EBR	130	122	7	56	17	128	185	260	62	119	72	266
10	Milburn & Herndon	EBT	723	736	1,570	1,220	1,587	1,883	1,173	1,400	2,020	1,884	2,037	2,547
10	Milburn & Herndon	EBL	179	260	303	399	292	486	37	142	161	281	150	368
11	Blythe & Herndon	SBR	1	9	6	17	10	16	8	26	13	34	17	33
11	Blythe & Herndon	SBT	0	1	0	1	0	1	0	0	0	0	0	0
11	Blythe & Herndon	SBL	50	60	50	60	50	60	0	0	0	0	0	0
11	Blythe & Herndon	WBR	50	60	50	60	50	60	0	0	0	0	0	0
11	Blythe & Herndon	WBT	800	1,104	1,407	2,099	1,682	2,033	1,273	1,582	1,880	2,577	2,155	2,511
11	Blythe & Herndon	WBL	2	4	2	4	2	4	0	0	0	0	0	0
11	Blythe & Herndon	NBR	0	4	0	4	0	4	0	0	0	0	0	0
11	Blythe & Herndon	NBT	1	0	1	0	1	0	0	0	0	0	0	0
11	Blythe & Herndon	NBL	0	2	0	2	0	2	0	0	0	0	0	0
11	Blythe & Herndon	EBR	1	1	1	1	1	1	0	0	0	0	0	0
11	Blythe & Herndon	EBT	1,222	940	2,040	1,571	2,083	2,163	1,487	1,543	2,305	2,174	2,348	2,766
11	Blythe & Herndon	EBL	0	1	16	8	17	2	14	24	30	31	31	25
12	Brawley & Herndon	SBR	130	151	157	204	166	220	20	36	47	89	56	105
12	Brawley & Herndon	SBT	561	308	594	351	591	388	74	92	107	135	104	172
12	Brawley & Herndon	SBL	180	309	208	317	205	316	33	19	61	27	58	26
12	Brawley & Herndon	WBR	56	159	61	186	58	176	17	33	22	60	19	50
12	Brawley & Herndon	WBT	833	1,472	1,412	2,396	1,671	2,388	1,173	1,501	1,752	2,425	2,011	2,417
12	Brawley & Herndon	WBL	103	184	201	185	208	189	369	394	467	395	474	399
12	Brawley & Herndon	NBR	57	132	310	256	208	188	362	366	615	490	513	422
12	Brawley & Herndon	NBT	161	611	183	668	192	685	53	114	75	171	84	188
12	Brawley & Herndon	NBL	148	240	223	454	229	481	120	222	195	436	201	463
12	Brawley & Herndon	EBR	55	127	234	255	206	408	151	163	330	291	302	444
12	Brawley & Herndon	EBT	920	1,329	1,681	1,896	1,750	2,404	1,367	1,477	2,128	2,044	2,197	2,552
12	Brawley & Herndon	EBL	92	262	125	304	126	330	23	35	56	77	57	103
13	Marks & Herndon	SBR	124	288	153	535	164	527	50	54	79	301	90	293
13	Marks & Herndon	SBT	141	204	186	227	208	277	115	198	160	221	182	271
13	Marks & Herndon	SBL	199	251	155	204	151	203	144	187	100	140	96	139
13	Marks & Herndon	WBR	222	352	223	359	204	334	154	141	155	148	136	123
13	Marks & Herndon	WBT	815	1,341	1,440	1,984	1,672	1,906	1,562	1,963	2,187	2606	2,419	2528
13	Marks & Herndon	WBL	204	300	202	363	202	264	11	111	9	174	9	75
13	Marks & Herndon	NBR	236	228	243	178	227	255	37	64	44	14	28	91
13	Marks & Herndon	NBT	119	219	182	253	208	281	138	215	201	249	227	277
13	Marks & Herndon	NBL	102	107	136	158	151	220	29	36	63	87	78	149
13	Marks & Herndon	EBR	49	74	395	216	375	189	19	35	365	177	345	150
13	Marks & Herndon	EBT	1,562	1,043	2,170	1,518	2,153	1,883	1,825	1,877	2,433	2352	2,416	2717
13	Marks & Herndon	EBL	100	183	139	306	141	367	46	58	85	181	87	242
14	West & Herndon	SBR	42	143	43	139	46	148	33	42	34	38	37	47
14	West & Herndon	SBT	92	136	218	299	225	298	108	161	234	324	241	323
14	West & Herndon	SBL	224	193	225	192	215	160	164	141	165	140	155	108
14	West & Herndon	WBR	117	278	234	185	187	187	57	201	174	108	127	110
14	West & Herndon	WBT	1,330	1,995	1,776	2,463	1,957	2,385	2,012	2,535	2,458	3003	2,639	2925
14	West & Herndon	WBL	296	266	102	281	70	238	364	240	170	255	138	212
14	West & Herndon	NBR	265	414	300	138	272	101	255	483	290	207	262	170
14	West & Herndon	NBT	69	129	118	258	177	309	50	234	99	363	158	414
14	West & Herndon	NBL	76	119	77	253	89	83	48	98	49	232	61	62
14	West & Herndon	EBR	133	129	232	123	207	99	56	103	155	97	130	73
14	West & Herndon	EBT	1,971	1,363	2,329	1,668	2,324	2,000	2,358	2,315	2,716	2620	2,711	2952
14	West & Herndon	EBL	55	87	59	89	60	91	24	43	28	45	29	47
15	Palm & Herndon	SBR	652	853	725	938	583	815	582	716	655	801	513	678
15	Palm & Herndon	SBT	641	690	1,060	1,119	1,144	1,308	326	658	745	1,087	829	1,276
15	Palm & Herndon	SBL	155	279	143	265	140	255	159	104	147	90	144	80
15	Palm & Herndon	WBR	336	196	338	170	329	160	89	168	91	142	82	132
15	Palm & Herndon	WBT	857	1,582	1,142	1,929	1,450	1,893	1,981	2,566	2,266	2,913	2,574	2,877
15	Palm & Herndon	WBL	220	248	225	134	212	83	182	297	187	183	174	132
15	Palm & Herndon	NBR	196	162	127	60	75	38	249	249	180	147	128	125
15	Palm & Herndon	NBT	674	757	1,043	1,074	1,150	1,145	415	766	784	1,083	891	1,154
15	Palm & Herndon	NBL	132	140	130	180	150	249	47	76	45	116	65	185
15	Palm & Herndon	EBR	95	50	104	93	114	103	75	47	84	90	94	100
15	Palm & Herndon	EBT	1,616	1,136	2,076	1,173	2,064	1,388	2,232	2,522	2,692	2,559	2,680	2,774
15	Palm & Herndon	EBL	792	766	747	784	633	929	707	607	662	625	548	770
16	Blackstone & Herndon	SBR	158	368	152	275	263	356	567	825	561	732	672	813
16	Blackstone & Herndon	SBT	342	705	703	1,118	715	915	554	862	915	1,275	927	1,072
16	Blackstone & Herndon	SBL	196	259	187	209	192	211	321	650	312	600	317	602
16	Blackstone & Herndon	WBR	213	236	449	304	404	333	468	299	704	367	659	396
16	Blackstone & Herndon	WBT	1,232	1,194	1,463	1,636	1,757	1,580	1,664	2,026	1,895	2,468	2,189	2,412
16	Blackstone & Herndon	WBL	98	158	170	432	155	319	114	288	186	562	171	449
16	Blackstone & Herndon	NBR	108	87	78	94	53	148	215	374	185	381	106	435
16	Blackstone & Herndon	NBT	219	525	336	939	377	838	492	1,113	609	1,527	650	1,426
16	Blackstone & Herndon	NBL	92	196	22	160	21	133	137	119	33	83	32	56
16	Blackstone & Herndon	EBR	124	323	155	328	151	360	29	38	60	43	56	75
16	Blackstone & Herndon	EBT	1,560	1,299	1,689	1,444	1,692	1,498	2,131	2,179	2,260	2,324	2,263	2,378
16	Blackstone & Herndon	EBL	146	151	270	131	211	162	450	707	574	687	515	718
17	Grantland & Parkway/Ramp	SBR	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	SBT	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	SBL	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	WBR	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	WBT	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	WBL	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	NBR	116	29	171	95	189	159	126	120	181	186	199	250
17	Grantland & Parkway/Ramp	NBT	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	NBL	263	162	104	68	152	288	444	534	175	223	333	660
17	Grantland & Parkway/Ramp	EBR	174	231	73	42	90	541	400	635	167	446	207	945
17	Grantland & Parkway/Ramp	EBT	499	290	464	496	469	1,056	281	295	246	501	251	1061
17	Grantland & Parkway/Ramp	EBL	0	0	0	0	0	0	0	0	0	0	0	0
18	Bryan & Palo Alto	SBR	0	0	0	0	17	56	0	0	0	0	17	56
18	Bryan & Palo Alto	SBT	10	21	167	194	255	147	5	22	162	195	250	148
18	Bryan & Palo Alto	SBL	296	59	297	60	297	63	0	0	1	1	1	4
18	Bryan & Palo Alto	WBR	356	70	356	71	356	72	0	0	0	1	0	2
18	Bryan & Palo Alto	WBT	0	0	0	0	247	659	0	0	0	0	247	659
18	Bryan & Palo Alto	WBL	2	2	0	0	0	1	3	11	0	0	0	6
18	Bryan & Palo Alto	NBR	1	2	0	0	0	7	9	5	0	0	0	10
18	Bryan & Palo Alto	NBT	45	8	160	226	107	153	21	8	136	226	83	153
18	Bryan & Palo Alto	NBL	0	0	0	0	419	585	0	0	0	0	419	585
18	Bryan & Palo Alto	EBR	0	0	0	0	452	673	0	0	0	0	452	673
18	Bryan & Palo Alto	EBT	0	0	0	0	181	1,217	0	0	0	0	181	1217
18	Bryan & Palo Alto	EBL	0	0	0	0	201	687	0	0	0	0	201	687
19	Hayes & Palo Alto	SBR	256	80	253	69	253	158	3	11	0	0	0	89
19	Hayes & Palo Alto	SBT	7	34	219	337	301	360	0	0	212	303	294	326
19	Hayes & Palo Alto	SBL	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	WBR	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	WBT	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	WBL	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	NBR	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	NBT	25	12	252	328	192	624	0	0	227	316	167	612
19	Hayes & Palo Alto	NBL	167	41	198	131	415	619	0	0	31	90	248	578
19	Hayes & Palo Alto	EBR	127	50	219	107	329	1,141	0	0	92	57	202	1091
19	Hayes & Palo Alto	EBT	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	EBL	157	81	148	76	154	208	9	5	0	0	6	132
20	Hayes & Veterans	SBR	0	0	290	329	300	869	0	0	290	329	300	869

I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2019 Baseline Volumes AM	2019 Baseline Volumes PM	2019 W/Proj Volumes AM	2019 W/Proj Volumes PM	2007 Existing AM	2007 Existing PM	2019 Baseline Volumes AM	2019 Baseline Volumes PM	2019 W/Proj Volumes AM	2019 W/Proj Volumes PM
20	Hayes & Veterans	SBT	0	0	14	30	38	87	0	0	14	30	38	87
20	Hayes & Veterans	SBL	0	0	0	0	158	461	0	0	0	0	158	461
20	Hayes & Veterans	WBR	0	0	0	0	232	369	0	0	0	0	232	369
20	Hayes & Veterans	WBT	0	0	824	1,022	951	1,111	0	0	824	1022	951	1111
20	Hayes & Veterans	WBL	0	0	0	0	0	5	0	0	0	0	0	5
20	Hayes & Veterans	NBR	0	0	0	0	0	0	0	0	0	0	0	0
20	Hayes & Veterans	NBT	0	0	15	30	28	119	0	0	15	30	28	119
20	Hayes & Veterans	NBL	0	0	226	250	213	210	0	0	226	250	213	210
20	Hayes & Veterans	EBR	0	0	206	298	188	305	0	0	206	298	188	305
20	Hayes & Veterans	EBT	0	0	941	848	889	1,309	0	0	941	848	889	1309
20	Hayes & Veterans	EBL	0	0	243	375	155	702	0	0	243	375	155	702
21	Bryan & Veterans	SBR	0	0	122	95	577	1,247	0	0	122	95	577	1247
21	Bryan & Veterans	SBT	0	0	94	114	255	381	0	0	94	114	255	381
21	Bryan & Veterans	SBL	0	0	18	7	61	297	0	0	18	7	61	297
21	Bryan & Veterans	WBR	0	0	5	16	211	118	0	0	5	16	211	118
21	Bryan & Veterans	WBT	0	0	1,308	1,565	1,090	1,558	0	0	1,308	1565	1,090	1558
21	Bryan & Veterans	WBL	0	0	27	19	163	514	0	0	27	19	163	514
21	Bryan & Veterans	NBR	0	0	13	21	106	470	0	0	13	21	106	470
21	Bryan & Veterans	NBT	0	0	56	123	303	305	0	0	56	123	303	305
21	Bryan & Veterans	NBL	0	0	174	642	459	990	0	0	174	642	459	990
21	Bryan & Veterans	EBR	0	0	242	655	904	632	0	0	242	655	904	632
21	Bryan & Veterans	EBT	0	0	1,359	1,494	1,065	1,549	0	0	1,359	1494	1,065	1549
21	Bryan & Veterans	EBL	0	0	89	158	798	1,093	0	0	89	158	798	1093
22	Bryan & Sierra	SBR	0	0	0	0	641	410	0	0	0	0	641	410
22	Bryan & Sierra	SBT	0	0	260	513	542	612	0	0	260	513	542	612
22	Bryan & Sierra	SBL	0	0	101	274	138	504	0	0	101	274	138	504
22	Bryan & Sierra	WBR	0	0	139	283	244	238	0	0	139	283	244	238
22	Bryan & Sierra	WBT	0	0	0	0	160	76	0	0	0	0	160	76
22	Bryan & Sierra	WBL	0	0	10	9	93	225	0	0	10	9	93	225
22	Bryan & Sierra	NBR	0	0	3	10	17	51	0	0	3	10	17	51
22	Bryan & Sierra	NBT	0	0	104	503	428	797	0	0	104	503	428	797
22	Bryan & Sierra	NBL	0	0	0	0	299	231	0	0	0	0	299	231
22	Bryan & Sierra	EBR	0	0	0	0	84	334	0	0	0	0	84	334
22	Bryan & Sierra	EBT	0	0	0	0	32	241	0	0	0	0	32	241
22	Bryan & Sierra	EBL	0	0	0	0	202	654	0	0	0	0	202	654
23	Polk & Sierra	SBR	25	47	25	47	176	150	0	0	0	0	151	103
23	Polk & Sierra	SBT	155	219	40	155	28	118	208	283	93	219	81	182
23	Polk & Sierra	SBL	51	68	92	99	103	165	50	95	91	126	102	192
23	Polk & Sierra	WBR	60	56	70	77	101	119	55	105	65	126	96	168
23	Polk & Sierra	WBT	58	60	139	257	297	336	0	0	81	197	239	276
23	Polk & Sierra	WBL	36	11	16	5	19	6	23	12	3	6	6	7
23	Polk & Sierra	NBR	21	22	13	4	16	11	10	26	2	8	5	15
23	Polk & Sierra	NBT	199	207	143	64	110	104	202	244	146	101	113	141
23	Polk & Sierra	NBL	47	48	105	134	158	159	0	0	58	86	111	111
23	Polk & Sierra	EBR	63	11	103	96	110	126	0	0	40	85	47	115
23	Polk & Sierra	EBT	93	46	154	235	210	547	0	0	61	189	117	501
23	Polk & Sierra	EBL	48	32	48	32	48	143	0	0	0	0	0	111
25	Grantland & Bullard	SBR	10	10	3	39	13	58	18	48	11	77	21	96
25	Grantland & Bullard	SBT	134	163	17	63	22	333	266	406	34	156	43	576
25	Grantland & Bullard	SBL	56	61	56	53	56	112	0	9	0	1	0	60
25	Grantland & Bullard	WBR	170	65	170	47	170	59	0	19	0	1	0	13
25	Grantland & Bullard	WBT	4	4	12	46	10	46	0	2	8	44	6	44
25	Grantland & Bullard	WBL	2	3	1	2	1	2	7	15	2	8	3	8
25	Grantland & Bullard	NBR	0	1	0	0	0	0	12	21	4	8	4	8
25	Grantland & Bullard	NBT	244	106	45	28	35	195	349	413	64	108	140	502
25	Grantland & Bullard	NBL	7	6	12	18	12	22	10	15	15	27	15	31
25	Grantland & Bullard	EBR	6	2	8	5	9	6	5	11	7	14	8	15
25	Grantland & Bullard	EBT	3	1	10	8	6	5	0	1	7	8	3	5
25	Grantland & Bullard	EBL	15	13	5	32	73	57	90	45	80	64	148	89
26	SR-99 NB Ramps & Veterans	SBR	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	SBT	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	SBL	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	WBR	0	0	105	245	101	188	0	0	105	245	101	188
26	SR-99 NB Ramps & Veterans	WBT	0	0	1,749	2,947	2,140	4,087	0	0	1,749	2947	2,140	4087
26	SR-99 NB Ramps & Veterans	WBL	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	NBR	0	0	415	762	1,038	1,135	0	0	415	762	1,038	1135
26	SR-99 NB Ramps & Veterans	NBT	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	NBL	0	0	272	620	236	273	0	0	272	620	236	273
26	SR-99 NB Ramps & Veterans	EBR	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	EBT	0	0	1,932	1,869	2,159	2,088	0	0	1,932	1869	2,159	2088
26	SR-99 NB Ramps & Veterans	EBL	0	0	197	470	302	844	0	0	197	470	302	844
27	SR-99 SB Ramps & Veterans	SBR	0	0	86	148	113	373	0	0	86	148	113	373
27	SR-99 SB Ramps & Veterans	SBT	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	SBL	0	0	54	142	35	164	0	0	54	142	35	164
27	SR-99 SB Ramps & Veterans	WBR	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	WBT	0	0	1,312	2,747	1,436	2,729	0	0	1,312	2747	1,436	2729
27	SR-99 SB Ramps & Veterans	WBL	0	0	709	820	941	1,631	0	0	709	820	941	1631
27	SR-99 SB Ramps & Veterans	NBR	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	NBT	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	NBL	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	EBR	0	0	480	392	391	110	0	0	480	392	391	110
27	SR-99 SB Ramps & Veterans	EBT	0	0	2,075	2,196	2,425	2,768	0	0	2,075	2196	2,425	2768
27	SR-99 SB Ramps & Veterans	EBL	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	SBR	129	34	172	17	203	473	30	43	73	26	104	482
28	Bullard & Carnegie	SBT	39	11	215	470	429	804	9	29	185	488	399	822
28	Bullard & Carnegie	SBL	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	WBR	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	WBT	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	WBL	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	NBR	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	NBT	107	22	190	452	717	506	7	27	90	457	617	511
28	Bullard & Carnegie	NBL	416	239	515	547	540	442	554	424	653	732	678	627
28	Bullard & Carnegie	EBR	159	573	628	707	483	541	226	712	695	846	550	680
28	Bullard & Carnegie	EBT	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	EBL	92	93	74	84	295	436	30	44	12	35	233	387
29	Golden State & Carnegie	SBR	2	3	68	80	90	126	28	23	94	100	116	146
29	Golden State & Carnegie	SBT	63	104	509	394	636	804	102	58	548	348	675	758
29	Golden State & Carnegie	SBL	35	101	602	408	480	238	50	164	617	471	495	301
29	Golden State & Carnegie	WBR	119	42	320	517	380	367	79	122	280	597	340	447
29	Golden State & Carnegie	WBT	0	0	17	1	15	26	108	94	125	72	123	120
29	Golden State & Carnegie	WBL	435	196	340	68	336	523	386	265	291	137	287	592
29	Golden State & Carnegie	NBR	188	529	111	399	293	731	191	424	114	294	296	626
29	Golden State & Carnegie	NBT	108	136	157	505	411	913	13	35	62	404	316	812
29	Golden State & Carnegie	NBL	0	0	20	37	27	31	145	102	165	139	172	133
29	Golden State & Carnegie	EBR	0	1	8	1	3	50	48	182	56	177	51	231
29	Golden State & Carnegie	EBT	0	0	1	1	2	1	34	157	23	103	36	123
29	Golden State & Carnegie	EBL	1	1	42	206	59	250	8	37	49	242	66	286
30	Dante & Bullard	SBR	47	27	47	51	47	27	0	0	0	24	0	0
30	Dante & Bullard	SBT	13	14	13	14	16	14	0	0	0	0	3	0
30	Dante & Bullard	SBL	90	23	106	64	105	211	113	105	129	146	128	293
30	Dante & Bullard	WBR	25	38	29	46	41	88	69	141	73	149	85	191
30	Dante & Bullard	WBT	241	190	544	965	1,075	873	148	415	451	1190	982	1098
30	Dante & Bullard	WBL	25	56	25	56	25	56	0	0	0	0	0	0
30	Dante & Bullard	NBR	18	9	18	9	18	9	0	0	0	0	0	0
30	Dante & Bullard	NBT	11	6	11	12	11	6	0	0	0	6	0	0

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30	Dante & Bullard	NBL	166	56	166	56	166	56	0	0	0	0	0	0
30	Dante & Bullard	EBR	36	56	36	56	36	56	0	0	0	0	0	0
30	Dante & Bullard	EBT	136	385	853	1,085	906	1,107	264	351	981	1051	1,034	1073
30	Dante & Bullard	EBL	17	101	17	101	17	101	0	0	0	0	0	0
31	Palm & Bullard	SBR	52	90	135	60	137	257	172	270	255	240	257	437
31	Palm & Bullard	SBT	413	732	612	977	774	1,133	461	766	660	1011	822	1167
31	Palm & Bullard	SBL	77	75	41	77	44	95	130	128	94	130	97	148
31	Palm & Bullard	WBR	85	65	68	116	67	93	112	93	95	144	94	121
31	Palm & Bullard	WBT	432	703	731	1,361	708	1,314	657	929	956	1587	933	1540
31	Palm & Bullard	WBL	93	142	193	107	131	37	109	302	209	267	147	78
31	Palm & Bullard	NBR	73	141	58	467	47	416	130	150	115	476	104	425
31	Palm & Bullard	NBT	382	757	671	740	655	834	423	763	712	746	696	840
31	Palm & Bullard	NBL	43	158	43	55	60	41	20	216	20	113	37	99
31	Palm & Bullard	EBR	69	68	79	158	67	128	55	29	65	119	53	89
31	Palm & Bullard	EBT	704	534	903	463	896	547	881	1,000	1,080	929	1,073	1013
31	Palm & Bullard	EBL	137	148	142	450	205	432	213	306	218	608	281	590
32	Bryan & Veterans	SBR	0	0	161	334	174	326	0	0	161	334	174	326
32	Bryan & Veterans	SBT	0	0	881	1,718	941	1,856	0	0	881	1718	941	1856
32	Bryan & Veterans	SBL	0	0	357	843	434	921	0	0	357	843	434	921
32	Bryan & Veterans	WBR	0	0	748	817	947	920	0	0	748	817	947	920
32	Bryan & Veterans	WBT	0	0	16	53	16	73	0	0	16	53	16	73
32	Bryan & Veterans	WBL	0	0	0	5	0	3	0	0	0	5	0	3
32	Bryan & Veterans	NBR	0	0	0	0	0	0	0	0	0	0	0	0
32	Bryan & Veterans	NBT	0	0	1,554	1,541	1,622	1,772	0	0	1,554	1541	1,622	1772
32	Bryan & Veterans	NBL	0	0	9	29	9	43	0	0	9	29	9	43
32	Bryan & Veterans	EBR	0	0	9	20	8	37	0	0	9	20	8	37
32	Bryan & Veterans	EBT	0	0	27	53	32	84	0	0	27	53	32	84
32	Bryan & Veterans	EBL	0	0	252	230	248	186	0	0	252	230	248	186
33	Grantland & Barstow	SBR	8	6	5	2	4	26	11	26	8	22	7	46
33	Grantland & Barstow	SBT	122	86	13	27	15	210	192	290	21	91	24	414
33	Grantland & Barstow	SBL	6	6	1	3	1	14	56	90	7	45	12	98
33	Grantland & Barstow	WBR	9	6	2	2	3	3	72	128	18	39	26	74
33	Grantland & Barstow	WBT	4	10	98	169	98	131	23	81	117	240	117	202
33	Grantland & Barstow	WBL	4	4	3	0	3	0	1	5	0	0	0	0
33	Grantland & Barstow	NBR	5	2	4	0	4	0	1	6	0	0	0	0
33	Grantland & Barstow	NBT	206	80	29	25	38	193	249	288	35	91	81	401
33	Grantland & Barstow	NBL	5	2	14	47	14	77	2	9	11	54	11	84
33	Grantland & Barstow	EBR	7	2	26	11	33	20	4	4	23	13	30	22
33	Grantland & Barstow	EBT	5	4	302	120	246	88	56	20	353	136	297	104
33	Grantland & Barstow	EBL	14	6	5	2	19	13	22	16	13	12	27	23
34	SR-99 SB Ramps & Shaw	SBR	38	55	142	310	38	55	0	0	104	255	0	0
34	SR-99 SB Ramps & Shaw	SBT	0	0	0	0	0	0	0	0	0	0	0	0
34	SR-99 SB Ramps & Shaw	SBL	227	259	321	363	227	259	0	0	94	104	0	0
34	SR-99 SB Ramps & Shaw	WBR	0	0	0	8	4	64	0	0	0	8	4	64
34	SR-99 SB Ramps & Shaw	WBT	642	1,001	722	856	727	1,056	730	1,367	810	1222	815	1422
34	SR-99 SB Ramps & Shaw	WBL	0	0	0	0	0	0	141	149	0	0	0	0
34	SR-99 SB Ramps & Shaw	NBR	0	0	0	0	0	0	148	181	0	0	0	0
34	SR-99 SB Ramps & Shaw	NBT	0	0	0	0	0	0	0	0	0	0	0	0
34	SR-99 SB Ramps & Shaw	NBL	0	0	0	0	0	0	59	101	0	0	0	0
34	SR-99 SB Ramps & Shaw	EBR	317	181	66	35	49	4	466	414	215	268	198	237
34	SR-99 SB Ramps & Shaw	EBT	586	560	606	553	641	839	758	728	778	721	813	1007
34	SR-99 SB Ramps & Shaw	EBL	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	SBR	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	SBT	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	SBL	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	WBR	192	302	478	824	483	905	0	0	286	522	291	603
35	SR-99 NB Ramps & Shaw	WBT	925	1,159	916	959	924	1,217	819	1,429	810	1229	818	1487
35	SR-99 NB Ramps & Shaw	WBL	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	NBR	109	237	119	257	125	244	0	0	10	20	16	7
35	SR-99 NB Ramps & Shaw	NBT	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	NBL	202	214	581	697	585	676	0	0	379	483	383	462
35	SR-99 NB Ramps & Shaw	EBR	0	0	27	36	27	54	0	0	27	36	27	54
35	SR-99 NB Ramps & Shaw	EBT	702	818	543	392	577	660	910	1,111	751	685	785	953
35	SR-99 NB Ramps & Shaw	EBL	0	0	0	0	0	0	0	0	0	0	0	0
36	Golden State & Shaw	SBR	14	23	3	5	3	8	124	130	23	30	29	47
36	Golden State & Shaw	SBT	314	216	363	281	423	778	292	230	341	295	401	792
36	Golden State & Shaw	SBL	109	79	548	327	583	600	183	213	622	461	657	734
36	Golden State & Shaw	WBR	74	166	132	536	364	858	121	139	179	509	411	831
36	Golden State & Shaw	WBT	791	1,343	843	1,304	840	1,593	724	1,284	776	1245	773	1534
36	Golden State & Shaw	WBL	276	321	362	528	356	487	418	351	504	558	498	517
36	Golden State & Shaw	NBR	405	686	582	886	521	821	304	416	481	616	420	551
36	Golden State & Shaw	NBT	236	502	225	590	400	900	242	303	231	391	406	701
36	Golden State & Shaw	NBL	15	40	16	42	17	59	3	7	4	9	5	26
36	Golden State & Shaw	EBR	33	47	37	47	35	77	5	7	9	7	7	37
36	Golden State & Shaw	EBT	705	936	580	742	606	1,017	856	962	731	768	757	1043
36	Golden State & Shaw	EBL	26	20	5	5	11	9	52	180	10	49	21	83
37	Brawley & Shaw	SBR	130	151	131	152	130	149	5	6	6	7	5	4
37	Brawley & Shaw	SBT	561	308	729	423	758	458	353	238	521	353	550	388
37	Brawley & Shaw	SBL	180	309	35	341	20	474	359	247	214	279	199	412
37	Brawley & Shaw	WBR	56	159	92	107	67	218	202	389	238	337	213	448
37	Brawley & Shaw	WBT	833	1,472	1,035	1,676	1,258	1,919	699	1,103	901	1307	1,124	1550
37	Brawley & Shaw	WBL	103	184	114	203	111	220	361	214	372	233	369	250
37	Brawley & Shaw	NBR	57	132	93	144	92	144	101	432	137	444	136	444
37	Brawley & Shaw	NBT	161	611	137	702	260	616	229	379	205	470	328	384
37	Brawley & Shaw	NBL	148	240	174	402	195	423	33	60	59	222	80	243
37	Brawley & Shaw	EBR	55	127	112	195	133	185	40	55	97	123	118	113
37	Brawley & Shaw	EBT	920	1,329	1,248	1,422	1,279	1,619	716	1,035	1,044	1128	1,075	1325
37	Brawley & Shaw	EBL	92	262	92	261	92	261	3	6	3	5	3	5
38	Marks & Shaw	SBR	313	326	485	609	565	720	328	507	500	790	580	901
38	Marks & Shaw	SBT	384	320	408	386	431	449	581	696	605	762	628	825
38	Marks & Shaw	SBL	243	195	259	187	224	197	91	54	107	46	72	56
38	Marks & Shaw	WBR	52	150	42	166	39	157	44	86	34	102	31	93
38	Marks & Shaw	WBT	735	1,209	940	1,340	1,179	1,414	1,133	1,405	1,338	1536	1,577	1610
38	Marks & Shaw	WBL	128	274	138	443	141	451	147	371	157	540	160	548
38	Marks & Shaw	NBR	340	162	186	197	185	439	337	251	183	286	182	528
38	Marks & Shaw	NBT	330	526	451	704	476	567	413	843	534	1021	559	884
38	Marks & Shaw	NBL	158	386	184	427	191	400	45	108	71	149	78	122
38	Marks & Shaw	EBR	69	198	97	261	103	302	71	88	99	151	105	192
38	Marks & Shaw	EBT	1,118	1,180	1,739	1,614	1,748	1,467	959	1,421	1,580	1855	1,589	1708
38	Marks & Shaw	EBL	165	450	116	409	131	749	419	573	370	532	385	872
39	West & Shaw	SBR	131	140	55	50	27	385	237	219	161	78	133	464
39	West & Shaw	SBT	371	438	476	704	515	471	523	581	628	847	667	614
39	West & Shaw	SBL	133	121	157	296	159	268	50	52	74	227	76	199
39	West & Shaw	WBR	60	103	44	82	55	199	38	82	22	61	33	178
39	West & Shaw	WBT	852	1,237	1,133	1,484	1,392	1,018	1,202	1,805	1,483	2052	1,742	1586
39	West & Shaw	WBL	137	237	153	28	101	391	236	478	252	269	200	632
39	West & Shaw	NBR	231	117	391	153	207	226	260	345	420	381	236	454
39	West & Shaw	NBT	478	293	499	363	545	360	485	798	506	868	552	865
39	West & Shaw	NBL	174	197	201	174	184	232	152	244	179	221	162	279
39	West & Shaw	EBR	125	109	156	191	136	224	173	180	204	262	184	295
39	West & Shaw	EBT	1,224	1,137	1,668	1,206	1,607	1,197	1,570	1,604	2,014	1673	1,953	1664
39	West & Shaw	EBL	105	182	116	271	156	332	79	253	90	342	130	403
40	SR-99 SB Ramps & Ashlan	SBR	65	68	90	91	95	128	26	37	51	60	56	97
40	SR-99 SB Ramps & Ashlan	SBT	21	66	400	152	376	202	39	90	418	176	394	226
40	SR-99 SB Ramps & Ashlan	SBL	116	121	172	213	202	411	160	217	216	309	246	507

I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2019 Baseline Volumes AM	2019 Baseline Volumes PM	2019 W/Proj Volumes AM	2019 W/Proj Volumes PM	2007 Existing AM	2007 Existing PM	2019 Baseline Volumes AM	2019 Baseline Volumes PM	2019 W/Proj Volumes AM	2019 W/Proj Volumes PM
40	SR-99 SB Ramps & Ashlan	WBR	0	0	0	0	0	0	0	0	0	0	0	0
40	SR-99 SB Ramps & Ashlan	WBT	374	947	644	823	634	766	922	1,684	1,192	1560	1,182	1503
40	SR-99 SB Ramps & Ashlan	WBL	109	319	115	336	120	575	152	215	158	232	163	471
40	SR-99 SB Ramps & Ashlan	NBR	310	396	421	560	426	593	315	308	426	472	431	505
40	SR-99 SB Ramps & Ashlan	NBT	0	0	0	0	0	0	0	0	0	0	0	0
40	SR-99 SB Ramps & Ashlan	NBL	18	45	31	69	30	145	4	6	17	30	16	106
40	SR-99 SB Ramps & Ashlan	EBR	31	59	29	82	31	195	3	3	1	26	3	139
40	SR-99 SB Ramps & Ashlan	EBT	1,191	850	1,321	1,081	1,388	842	1,557	1,252	1,687	1483	1,754	1244
40	SR-99 SB Ramps & Ashlan	EBL	0	0	0	0	0	0	0	0	0	0	0	0
41	SR-99 NB Ramps & Ashlan	SBR	168	315	212	363	235	438	69	99	113	147	136	222
41	SR-99 NB Ramps & Ashlan	SBT	0	0	0	0	0	0	0	0	0	0	0	0
41	SR-99 NB Ramps & Ashlan	SBL	155	164	198	248	198	350	64	195	107	279	107	381
41	SR-99 NB Ramps & Ashlan	WBR	226	564	186	447	256	333	267	454	227	337	297	223
41	SR-99 NB Ramps & Ashlan	WBT	359	725	515	1,114	614	1,447	972	1,271	1,128	1660	1,227	1993
41	SR-99 NB Ramps & Ashlan	WBL	0	0	0	0	0	0	0	0	0	0	0	0
41	SR-99 NB Ramps & Ashlan	NBR	415	701	375	475	377	453	332	437	292	211	294	189
41	SR-99 NB Ramps & Ashlan	NBT	7	15	6	38	6	126	118	64	102	87	105	175
41	SR-99 NB Ramps & Ashlan	NBL	210	464	319	208	311	193	334	729	443	473	435	458
41	SR-99 NB Ramps & Ashlan	EBR	0	0	0	0	0	0	0	0	0	0	0	0
41	SR-99 NB Ramps & Ashlan	EBT	872	920	1,070	1,121	1,119	1,206	1,235	1,079	1,433	1280	1,482	1365
41	SR-99 NB Ramps & Ashlan	EBL	280	192	359	338	359	364	125	103	204	249	204	275
241	Golden State NB Ramps & Veterans	SBR	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Veterans	SBT	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Veterans	SBL	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Veterans	WBR	0	0	4	21	161	405	0	0	4	21	161	405
241	Golden State NB Ramps & Veterans	WBT	0	0	1,600	2,281	1,965	3,390	0	0	1,600	2281	1,965	3390
241	Golden State NB Ramps & Veterans	WBL	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Veterans	NBR	0	0	67	156	207	439	0	0	67	156	207	439
241	Golden State NB Ramps & Veterans	NBT	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Veterans	NBL	0	0	284	913	277	383	0	0	284	913	277	383
241	Golden State NB Ramps & Veterans	EBR	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Veterans	EBT	0	0	1,623	2,151	2,560	2,835	0	0	1,623	2151	2,560	2835
241	Golden State NB Ramps & Veterans	EBL	0	0	19	14	285	558	0	0	19	14	285	558
242	Golden State SB Ramps & Veterans	SBR	0	0	22	65	177	787	0	0	22	65	177	787
242	Golden State SB Ramps & Veterans	SBT	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Veterans	SBL	0	0	4	18	123	418	0	0	4	18	123	418
242	Golden State SB Ramps & Veterans	WBR	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Veterans	WBT	0	0	1,832	3,128	2,065	3,487	0	0	1,832	3128	2,065	3487
242	Golden State SB Ramps & Veterans	WBL	0	0	52	67	178	286	0	0	52	67	178	286
242	Golden State SB Ramps & Veterans	NBR	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Veterans	NBT	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Veterans	NBL	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Veterans	EBR	0	0	709	484	475	248	0	0	709	484	475	248
242	Golden State SB Ramps & Veterans	EBT	0	0	1,638	2,147	2,721	2,975	0	0	1,638	2147	2,721	2975
242	Golden State SB Ramps & Veterans	EBL	0	0	0	0	0	0	0	0	0	0	0	0

			Post Processed Turning Movement Volumes						Raw Model Turning Movement Volumes					
I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2025 Baseline Volumes AM	2025 Baseline Volumes PM	2025 W/Proj Volumes AM	2025 W/Proj Volumes PM	2007 Existing AM	2007 Existing PM	2025 Baseline Volumes AM	2025 Baseline Volumes PM	2025 W/Proj Volumes AM	2025 W/Proj Volumes PM
1	Parkway & Herndon	SBR	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	SBT	29	32	29	35	30	34	2	4	2	7	3	6
1	Parkway & Herndon	SBL	94	86	92	81	92	84	5	12	3	7	3	10
1	Parkway & Herndon	WBR	138	120	135	81	136	229	8	49	5	10	6	158
1	Parkway & Herndon	WBT	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	WBL	554	452	279	553	441	1,805	680	926	405	1,027	567	2,279
1	Parkway & Herndon	NBR	209	123	90	43	166	242	444	533	192	187	401	652
1	Parkway & Herndon	NBT	11	13	12	14	12	14	0	1	1	2	1	2
1	Parkway & Herndon	NBL	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	EBR	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	EBT	0	0	0	0	0	0	0	0	0	0	0	0
1	Parkway & Herndon	EBL	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	SBR	31	55	14	50	14	59	42	74	25	69	25	78
2	SR-99 SB Ramps & Herndon	SBT	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	SBL	16	36	244	274	312	112	172	153	400	391	468	229
2	SR-99 SB Ramps & Herndon	WBR	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	WBT	765	582	504	650	667	2,042	646	900	385	968	548	2,360
2	SR-99 SB Ramps & Herndon	WBL	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	NBR	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	NBT	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	NBL	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	EBR	0	0	0	0	0	0	0	0	0	0	0	0
2	SR-99 SB Ramps & Herndon	EBT	304	207	51	74	260	324	448	545	195	194	404	662
2	SR-99 SB Ramps & Herndon	EBL	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	SBR	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	SBT	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	SBL	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	WBR	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	WBT	727	524	482	622	646	2,036	584	805	339	903	503	2,317
3	SR-99 NB Ramps & Herndon	WBL	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	NBR	337	533	516	637	1,064	1,391	227	417	406	521	954	1,275
3	SR-99 NB Ramps & Herndon	NBT	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	NBL	42	65	26	35	26	13	62	95	46	65	46	43
3	SR-99 NB Ramps & Herndon	EBR	0	0	0	0	0	0	0	0	0	0	0	0
3	SR-99 NB Ramps & Herndon	EBT	317	251	291	138	569	444	620	698	594	585	872	891
3	SR-99 NB Ramps & Herndon	EBL	0	0	0	0	0	0	0	0	0	0	0	0
4	Golden State & Herndon	SBR	126	60	127	67	127	69	2	6	3	13	3	15
4	Golden State & Herndon	SBT	49	146	75	137	114	181	49	74	75	65	114	109
4	Golden State & Herndon	SBL	205	387	376	432	370	453	501	623	672	668	666	689
4	Golden State & Herndon	WBR	435	299	599	441	499	410	508	653	672	795	572	764
4	Golden State & Herndon	WBT	569	413	339	342	479	1,387	542	688	312	617	452	1,662
4	Golden State & Herndon	WBL	40	47	73	106	132	392	53	77	86	136	145	422
4	Golden State & Herndon	NBR	45	81	48	109	115	421	20	72	23	100	90	412
4	Golden State & Herndon	NBT	150	140	109	127	129	197	45	67	4	54	24	124
4	Golden State & Herndon	NBL	50	41	32	203	57	570	41	111	23	273	48	640
4	Golden State & Herndon	EBR	42	49	188	167	388	516	131	112	277	230	477	579
4	Golden State & Herndon	EBT	552	620	569	519	1,199	1,236	656	944	673	843	1,303	1,560
4	Golden State & Herndon	EBL	45	75	35	47	30	42	60	60	50	32	45	27
5	Weber & Herndon	SBR	0	0	49	134	52	144	32	91	81	225	84	235
5	Weber & Herndon	SBT	0	0	0	1	0	1	0	0	0	1	0	1
5	Weber & Herndon	SBL	0	0	0	0	0	0	0	0	0	0	0	0
5	Weber & Herndon	WBR	0	0	0	0	0	0	0	0	0	0	0	0
5	Weber & Herndon	WBT	1,068	753	959	737	1,055	2,025	1,059	1,312	950	1,296	1,046	2,584
5	Weber & Herndon	WBL	3	1	7	12	8	25	5	11	9	22	10	35
5	Weber & Herndon	NBR	2	2	14	6	18	18	7	10	19	14	23	26
5	Weber & Herndon	NBT	0	0	0	0	0	0	0	0	0	0	0	0
5	Weber & Herndon	NBL	1	1	27	14	27	15	13	15	39	28	39	29
5	Weber & Herndon	EBR	0	3	7	33	8	33	8	19	15	49	16	49
5	Weber & Herndon	EBT	787	1,089	852	939	1,527	1,980	1,104	1,552	1,169	1,402	1,844	2,443
5	Weber & Herndon	EBL	0	0	119	93	134	101	66	67	185	160	200	168
6	Bryan & Herndon	SBR	0	0	140	300	202	568	0	0	140	300	202	568
6	Bryan & Herndon	SBT	0	0	50	139	126	350	0	0	50	139	126	350
6	Bryan & Herndon	SBL	0	0	18	55	20	108	0	0	18	55	20	108
6	Bryan & Herndon	WBR	0	0	22	45	25	50	0	0	22	45	25	50
6	Bryan & Herndon	WBT	925	714	743	418	579	399	1,033	1,274	851	978	687	959
6	Bryan & Herndon	WBL	53	2	54	7	53	253	7	16	8	21	7	267
6	Bryan & Herndon	NBR	138	3	147	3	145	179	14	10	23	10	21	186
6	Bryan & Herndon	NBT	0	0	62	100	138	394	0	0	62	100	138	394
6	Bryan & Herndon	NBL	256	69	252	149	311	349	56	40	52	120	111	320
6	Bryan & Herndon	EBR	244	89	265	156	451	286	32	66	53	133	239	263
6	Bryan & Herndon	EBT	506	951	413	486	392	458	1,070	1,529	977	1,064	956	1,036
6	Bryan & Herndon	EBL	0	0	209	332	359	583	0	0	209	332	359	583
7	Hayes & Herndon	SBR	129	43	0	0	0	53	130	148	0	0	0	158
7	Hayes & Herndon	SBT	114	9	316	354	307	327	2	4	204	349	195	322
7	Hayes & Herndon	SBL	5	5	0	0	0	11	8	19	0	0	0	25
7	Hayes & Herndon	WBR	5	9	0	0	0	0	22	14	0	0	0	0
7	Hayes & Herndon	WBT	793	659	755	517	595	499	909	1,142	871	1000	711	982
7	Hayes & Herndon	WBL	145	71	182	118	175	97	34	59	71	106	64	85
7	Hayes & Herndon	NBR	101	47	145	86	142	119	48	48	92	87	89	120
7	Hayes & Herndon	NBT	28	10	237	290	138	317	2	3	211	283	112	310
7	Hayes & Herndon	NBL	37	13	47	56	46	149	0	0	10	43	9	136
7	Hayes & Herndon	EBR	7	22	16	41	23	150	0	0	9	19	16	128
7	Hayes & Herndon	EBT	563	829	592	590	563	554	980	1,349	1,009	1110	980	1074
7	Hayes & Herndon	EBL	60	111	0	0	0	48	104	190	0	0	0	127
8	Veterans & Herndon	SBR	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	SBT	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	SBL	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	WBR	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	WBT	943	739	920	631	752	592	965	1,214	942	1106	774	1067
8	Veterans & Herndon	WBL	0	0	1,034	1,512	1,551	1,752	0	0	1,034	1512	1,551	1752
8	Veterans & Herndon	NBR	0	0	1,287	1,262	1,317	1,732	0	0	1,287	1262	1,317	1732
8	Veterans & Herndon	NBT	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	NBL	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	EBR	0	0	0	0	0	0	0	0	0	0	0	0
8	Veterans & Herndon	EBT	722	881	787	662	755	684	1,036	1,416	1,101	1197	1,069	1219
8	Veterans & Herndon	EBL	0	0	0	0	0	0	0	0	0	0	0	0
9	Polk & Herndon	SBR	24	24	24	24	24	32	0	0	0	0	0	8
9	Polk & Herndon	SBT	51	60	121	164	135	498	22	48	92	152	106	486
9	Polk & Herndon	SBL	117	138	183	299	157	302	172	209	238	370	212	373
9	Polk & Herndon	WBR	66	134	228	231	183	227	121	216	283	313	238	309
9	Polk & Herndon	WBT	792	648	1,838	2,073	2,181	2,207	924	1,170	1,970	2,595	2,313	2,729
9	Polk & Herndon	WBL	85	287	169	420	288	460	205	284	289	417	408	457
9	Polk & Herndon	NBR	261	196	349	293	406	471	217	232	305	329	362	507
9	Polk & Herndon	NBT	25	59	55	161	102	401	15	59	45	161	92	401
9	Polk & Herndon	NBL	108	64	73	43	79	102	41	44	6	23	12	82

I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2025 Baseline Volumes AM	2025 Baseline Volumes PM	2025 W/Proj Volumes AM	2025 W/Proj Volumes PM	2007 Existing AM	2007 Existing PM	2025 Baseline Volumes AM	2025 Baseline Volumes PM	2025 W/Proj Volumes AM	2025 W/Proj Volumes PM
9	Polk & Herndon	EBR	78	88	57	50	75	125	30	54	9	16	27	91
9	Polk & Herndon	EBT	638	777	2,011	1,859	1,991	2,276	1,006	1,361	2,379	2,443	2,359	2,860
9	Polk & Herndon	EBL	6	8	6	8	6	8	0	0	0	0	0	0
10	Milburn & Herndon	SBR	204	133	447	515	458	512	81	65	324	447	335	444
10	Milburn & Herndon	SBT	301	214	284	314	311	312	193	117	176	217	203	215
10	Milburn & Herndon	SBL	359	151	233	192	255	188	232	79	106	120	128	116
10	Milburn & Herndon	WBR	108	204	133	299	64	261	114	119	139	214	70	176
10	Milburn & Herndon	WBT	611	802	1,519	1,914	1,910	2,135	1,116	1,374	2,024	2,486	2,415	2,707
10	Milburn & Herndon	WBL	81	90	115	162	101	115	51	115	85	187	71	140
10	Milburn & Herndon	NBR	131	58	168	96	144	99	96	89	133	127	109	130
10	Milburn & Herndon	NBT	168	263	181	290	229	325	79	214	92	241	140	276
10	Milburn & Herndon	NBL	114	137	254	299	269	250	53	230	193	392	208	343
10	Milburn & Herndon	EBR	130	122	194	128	151	355	185	260	249	266	206	493
10	Milburn & Herndon	EBT	723	736	2,028	1,757	1,995	2,023	1,173	1,400	2,478	2,421	2,445	2,687
10	Milburn & Herndon	EBL	179	260	338	573	425	678	37	142	196	455	283	560
11	Blythe & Herndon	SBR	1	9	25	26	18	17	8	26	32	43	25	34
11	Blythe & Herndon	SBT	0	1	0	1	0	1	0	0	0	0	0	0
11	Blythe & Herndon	SBL	50	60	50	60	50	60	0	0	0	0	0	0
11	Blythe & Herndon	WBR	50	60	50	60	50	60	0	0	0	0	0	0
11	Blythe & Herndon	WBT	800	1,104	1,743	2,366	2,058	2,512	1,273	1,582	2,216	2,844	2,531	2,990
11	Blythe & Herndon	WBL	2	4	2	4	2	4	0	0	0	0	0	0
11	Blythe & Herndon	NBR	0	4	0	4	0	4	0	0	0	0	0	0
11	Blythe & Herndon	NBT	1	0	1	0	1	0	0	0	0	0	0	0
11	Blythe & Herndon	NBL	0	2	0	2	0	2	0	0	0	0	0	0
11	Blythe & Herndon	EBR	1	1	1	1	1	1	0	0	0	0	0	0
11	Blythe & Herndon	EBT	1,222	940	2,407	2,024	2,384	2,303	1,487	1,543	2,672	2,627	2,649	2,906
11	Blythe & Herndon	EBL	0	1	30	18	19	5	14	24	44	41	33	28
12	Brawley & Herndon	SBR	130	151	179	236	187	244	20	36	69	121	77	129
12	Brawley & Herndon	SBT	561	308	613	377	623	422	74	92	126	161	136	206
12	Brawley & Herndon	SBL	180	309	216	326	215	317	33	19	69	36	68	27
12	Brawley & Herndon	WBR	56	159	63	191	61	183	17	33	24	65	22	57
12	Brawley & Herndon	WBT	833	1,472	1,686	2,627	1,953	2,695	1,173	1,501	2,026	2,656	2,293	2,724
12	Brawley & Herndon	WBL	103	184	173	169	112	168	369	394	439	379	378	378
12	Brawley & Herndon	NBR	57	132	102	292	35	168	362	366	407	526	340	402
12	Brawley & Herndon	NBT	161	611	200	701	222	735	53	114	92	204	114	238
12	Brawley & Herndon	NBL	148	240	269	512	352	578	120	222	241	494	324	560
12	Brawley & Herndon	EBR	55	127	253	434	392	422	151	163	349	470	488	458
12	Brawley & Herndon	EBT	920	1,329	2,039	2,181	1,941	2,549	1,367	1,477	2,486	2,329	2,388	2,697
12	Brawley & Herndon	EBL	92	262	144	340	144	353	23	35	75	113	75	126
13	Marks & Herndon	SBR	124	288	172	463	186	436	50	54	98	229	112	202
13	Marks & Herndon	SBT	141	204	220	216	243	284	115	198	194	210	217	278
13	Marks & Herndon	SBL	199	251	160	250	156	232	144	187	105	186	101	168
13	Marks & Herndon	WBR	222	352	236	362	222	343	154	141	168	151	154	132
13	Marks & Herndon	WBT	815	1,341	1,568	2,177	1,788	2,323	1,562	1,963	2,315	2799	2,535	2945
13	Marks & Herndon	WBL	204	300	214	203	198	203	11	111	21	14	5	14
13	Marks & Herndon	NBR	236	228	222	183	210	180	37	64	23	19	11	16
13	Marks & Herndon	NBT	119	219	226	274	250	348	138	215	245	270	269	344
13	Marks & Herndon	NBL	102	107	224	210	170	152	29	36	151	139	97	81
13	Marks & Herndon	EBR	49	74	105	244	225	350	19	35	75	205	195	311
13	Marks & Herndon	EBT	1,562	1,043	2,580	1,780	2,294	1,910	1,825	1,877	2,843	2614	2,557	2744
13	Marks & Herndon	EBL	100	183	148	309	149	274	46	58	94	184	95	149
14	West & Herndon	SBR	42	143	41	139	46	139	33	42	32	38	37	38
14	West & Herndon	SBT	92	136	262	365	264	410	108	161	278	390	280	435
14	West & Herndon	SBL	224	193	176	123	167	107	164	141	116	71	107	55
14	West & Herndon	WBR	117	278	217	219	180	194	57	201	157	142	120	117
14	West & Herndon	WBT	1,330	1,995	1,902	2,540	2,096	2,592	2,012	2,535	2,584	3080	2,778	3132
14	West & Herndon	WBL	296	266	67	200	18	181	364	240	135	174	86	155
14	West & Herndon	NBR	265	414	171	97	133	101	255	483	161	166	123	170
14	West & Herndon	NBT	69	129	180	324	227	308	50	234	161	429	208	413
14	West & Herndon	NBL	76	119	86	90	96	87	48	98	58	69	68	66
14	West & Herndon	EBR	133	129	158	109	185	96	56	103	81	83	108	70
14	West & Herndon	EBT	1,971	1,363	2,648	1,951	2,420	2,130	2,358	2,315	3,035	2903	2,807	3082
14	West & Herndon	EBL	55	87	57	98	55	81	24	43	26	54	24	37
15	Palm & Herndon	SBR	652	853	698	770	610	1,109	582	716	628	633	540	972
15	Palm & Herndon	SBT	641	690	1,214	1,329	1,230	1,314	326	658	899	1,297	915	1,282
15	Palm & Herndon	SBL	155	279	146	277	150	254	159	104	150	102	154	79
15	Palm & Herndon	WBR	336	196	327	168	319	159	89	168	80	140	72	131
15	Palm & Herndon	WBT	857	1,582	1,197	2,027	1,477	1,912	1,981	2,566	2,321	3,011	2,601	2,896
15	Palm & Herndon	WBL	220	248	137	96	134	90	182	297	99	145	96	139
15	Palm & Herndon	NBR	196	162	156	58	193	46	249	249	209	145	246	133
15	Palm & Herndon	NBT	674	757	1,090	1,162	1,136	1,293	415	766	831	1,171	877	1,302
15	Palm & Herndon	NBL	132	140	138	246	147	214	47	76	53	182	62	150
15	Palm & Herndon	EBR	95	50	146	93	220	168	75	47	126	90	200	165
15	Palm & Herndon	EBT	1,616	1,136	2,064	1,517	1,830	1,463	2,232	2,522	2,680	2,903	2,446	2,849
15	Palm & Herndon	EBL	792	766	877	739	718	816	707	607	792	580	633	657
16	Blackstone & Herndon	SBR	158	368	100	385	109	332	567	825	509	842	518	789
16	Blackstone & Herndon	SBT	342	705	638	1,053	654	1,051	554	862	850	1,210	866	1,208
16	Blackstone & Herndon	SBL	196	259	271	291	248	267	321	650	396	682	373	658
16	Blackstone & Herndon	WBR	213	236	353	341	343	337	468	299	608	404	598	400
16	Blackstone & Herndon	WBT	1,232	1,194	1,572	1,654	1,758	1,579	1,664	2,026	2,004	2,486	2,190	2,411
16	Blackstone & Herndon	WBL	98	158	143	437	176	407	114	288	159	567	192	537
16	Blackstone & Herndon	NBR	108	87	145	112	155	238	215	374	252	399	262	525
16	Blackstone & Herndon	NBT	219	525	439	799	559	903	492	1,113	712	1,387	832	1,491
16	Blackstone & Herndon	NBL	92	196	0	133	24	135	137	119	45	56	36	58
16	Blackstone & Herndon	EBR	124	323	120	322	120	326	29	38	25	37	25	41
16	Blackstone & Herndon	EBT	1,560	1,299	1,737	1,832	1,539	1,596	2,131	2,179	2,308	2,712	2,110	2,476
16	Blackstone & Herndon	EBL	146	151	327	150	331	201	450	707	631	706	635	757
17	Grantland & Parkway/Ramp	SBR	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	SBT	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	SBL	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	WBR	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	WBT	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	WBL	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	NBR	116	29	270	103	281	178	126	120	280	194	291	269
17	Grantland & Parkway/Ramp	NBT	0	0	0	0	0	0	0	0	0	0	0	0
17	Grantland & Parkway/Ramp	NBL	263	162	12	57	220	282	444	534	193	189	401	654
17	Grantland & Parkway/Ramp	EBR	174	231	74	142	94	527	400	635	171	546	216	931
17	Grantland & Parkway/Ramp	EBT	499	290	454	483	572	1,350	281	295	236	488	354	1355
17	Grantland & Parkway/Ramp	EBL	0	0	0	0	0	0	0	0	0	0	0	0
18	Bryan & Palo Alto	SBR	0	0	0	0	20	69	0	0	0	0	20	69
18	Bryan & Palo Alto	SBT	10	21	133	264	270	146	5	22	128	265	265	147
18	Bryan & Palo Alto	SBL	296	59	297	60	297	64	0	0	1	1	1	5
18	Bryan & Palo Alto	WBR	356	70	356	71	356	81	0	0	0	1	0	11
18	Bryan & Palo Alto	WBT	0	0	0	0	273	643	0	0	0	0	273	643
18	Bryan & Palo Alto	WBL	2	2	0	0	0	0	3	11	0	0	0	0
18	Bryan & Palo Alto	NBR	1	2	0	0	0	0	9	5	0	0	0	0

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18	Bryan & Palo Alto	NBT	45	8	127	236	122	245	21	8	103	236	98	245
18	Bryan & Palo Alto	NBL	0	0	0	0	407	630	0	0	0	0	407	630
18	Bryan & Palo Alto	EBR	0	0	0	0	382	707	0	0	0	0	382	707
18	Bryan & Palo Alto	EBT	0	0	0	0	180	815	0	0	0	0	180	815
18	Bryan & Palo Alto	EBL	0	0	0	0	20	67	0	0	0	0	20	67
19	Hayes & Palo Alto	SBR	256	80	253	69	253	84	3	11	0	0	0	15
19	Hayes & Palo Alto	SBT	7	34	253	448	327	524	0	0	246	414	320	490
19	Hayes & Palo Alto	SBL	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	WBR	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	WBT	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	WBL	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	NBR	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	NBT	25	12	271	400	209	533	0	0	246	388	184	521
19	Hayes & Palo Alto	NBL	167	41	249	126	440	680	0	0	82	85	273	639
19	Hayes & Palo Alto	EBR	127	50	245	103	325	796	0	0	118	53	198	746
19	Hayes & Palo Alto	EBT	0	0	0	0	0	0	0	0	0	0	0	0
19	Hayes & Palo Alto	EBL	157	81	148	76	148	151	9	5	0	0	0	75
20	Hayes & Veterans	SBR	0	0	348	433	315	768	0	0	348	433	315	768
20	Hayes & Veterans	SBT	0	0	17	34	43	110	0	0	17	34	43	110
20	Hayes & Veterans	SBL	0	0	0	0	161	358	0	0	0	0	161	358
20	Hayes & Veterans	WBR	0	0	0	0	255	354	0	0	0	0	255	354
20	Hayes & Veterans	WBT	0	0	1,034	1,512	1,296	1,398	0	0	1,034	1512	1,296	1398
20	Hayes & Veterans	WBL	0	0	0	0	0	0	0	0	0	0	0	0
20	Hayes & Veterans	NBR	0	0	0	0	0	0	0	0	0	0	0	0
20	Hayes & Veterans	NBT	0	0	18	57	34	160	0	0	18	57	34	160
20	Hayes & Veterans	NBL	0	0	295	282	277	266	0	0	295	282	277	266
20	Hayes & Veterans	EBR	0	0	277	356	228	310	0	0	277	356	228	310
20	Hayes & Veterans	EBT	0	0	1,287	1,262	1,156	1,374	0	0	1,287	1262	1,156	1374
20	Hayes & Veterans	EBL	0	0	310	416	168	645	0	0	310	416	168	645
21	Bryan & Veterans	SBR	0	0	139	143	514	1,168	0	0	139	143	514	1168
21	Bryan & Veterans	SBT	0	0	56	139	288	466	0	0	56	139	288	466
21	Bryan & Veterans	SBL	0	0	28	11	77	252	0	0	28	11	77	252
21	Bryan & Veterans	WBR	0	0	8	26	241	150	0	0	8	26	241	150
21	Bryan & Veterans	WBT	0	0	1,651	2,171	1,459	1,772	0	0	1,651	2171	1,459	1772
21	Bryan & Veterans	WBL	0	0	18	30	187	509	0	0	18	30	187	509
21	Bryan & Veterans	NBR	0	0	11	25	78	488	0	0	11	25	78	488
21	Bryan & Veterans	NBT	0	0	35	136	332	357	0	0	35	136	332	357
21	Bryan & Veterans	NBL	0	0	170	279	343	787	0	0	170	279	343	787
21	Bryan & Veterans	EBR	0	0	107	215	703	559	0	0	107	215	703	559
21	Bryan & Veterans	EBT	0	0	1,835	1,999	1,397	1,589	0	0	1,835	1999	1,397	1589
21	Bryan & Veterans	EBL	0	0	79	170	771	1,016	0	0	79	170	771	1016
22	Bryan & Sierra	SBR	0	0	0	0	625	338	0	0	0	0	625	338
22	Bryan & Sierra	SBT	0	0	100	182	377	503	0	0	100	182	377	503
22	Bryan & Sierra	SBL	0	0	82	202	78	457	0	0	82	202	78	457
22	Bryan & Sierra	WBR	0	0	158	267	188	232	0	0	158	267	188	232
22	Bryan & Sierra	WBT	0	0	0	0	166	130	0	0	0	0	166	130
22	Bryan & Sierra	WBL	0	0	15	20	99	187	0	0	15	20	99	187
22	Bryan & Sierra	NBR	0	0	9	35	82	315	0	0	9	35	82	315
22	Bryan & Sierra	NBT	0	0	58	173	322	543	0	0	58	173	322	543
22	Bryan & Sierra	NBL	0	0	0	0	310	249	0	0	0	0	310	249
22	Bryan & Sierra	EBR	0	0	0	0	89	400	0	0	0	0	89	400
22	Bryan & Sierra	EBT	0	0	0	0	51	245	0	0	0	0	51	245
22	Bryan & Sierra	EBL	0	0	0	0	177	619	0	0	0	0	177	619
23	Polk & Sierra	SBR	25	47	25	47	186	140	0	0	0	0	161	93
23	Polk & Sierra	SBT	155	219	97	212	80	228	208	283	150	276	133	292
23	Polk & Sierra	SBL	51	68	95	103	96	139	50	95	94	130	95	166
23	Polk & Sierra	WBR	60	56	75	86	102	110	55	105	70	135	97	159
23	Polk & Sierra	WBT	58	60	164	202	213	295	0	0	106	142	155	235
23	Polk & Sierra	WBL	36	11	16	3	18	10	23	12	3	4	5	11
23	Polk & Sierra	NBR	21	22	13	3	17	13	10	26	2	7	6	17
23	Polk & Sierra	NBT	199	207	157	137	193	184	202	244	160	174	196	221
23	Polk & Sierra	NBL	47	48	99	144	123	149	0	0	52	96	76	101
23	Polk & Sierra	EBR	63	11	88	65	99	162	0	0	25	54	36	151
23	Polk & Sierra	EBT	93	46	149	166	159	540	0	0	56	120	66	494
23	Polk & Sierra	EBL	48	32	48	36	85	248	0	0	0	4	37	216
25	Grantland & Bullard	SBR	10	10	6	44	13	39	18	48	14	82	21	77
25	Grantland & Bullard	SBT	134	163	20	20	28	360	266	406	39	263	56	603
25	Grantland & Bullard	SBL	56	61	56	54	56	98	0	9	0	2	0	46
25	Grantland & Bullard	WBR	170	65	173	61	180	68	0	19	3	15	10	22
25	Grantland & Bullard	WBT	4	4	18	42	18	39	0	2	14	40	14	37
25	Grantland & Bullard	WBL	2	3	1	2	1	2	7	15	3	9	4	10
25	Grantland & Bullard	NBR	0	1	0	0	0	0	12	21	5	9	4	8
25	Grantland & Bullard	NBT	244	106	48	21	83	192	349	413	68	83	188	499
25	Grantland & Bullard	NBL	7	6	7	8	7	20	10	15	10	17	10	29
25	Grantland & Bullard	EBR	6	2	8	4	8	3	5	11	7	13	7	12
25	Grantland & Bullard	EBT	3	1	11	12	11	14	0	1	8	12	8	14
25	Grantland & Bullard	EBL	15	13	73	24	142	70	90	45	148	56	217	102
26	SR-99 NB Ramps & Veterans	SBR	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	SBT	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	SBL	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	WBR	0	0	127	214	130	216	0	0	127	214	130	216
26	SR-99 NB Ramps & Veterans	WBT	0	0	2,036	3,200	2,345	4,471	0	0	2,036	3200	2,345	4471
26	SR-99 NB Ramps & Veterans	WBL	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	NBR	0	0	511	906	1,017	1,342	0	0	511	906	1,017	1342
26	SR-99 NB Ramps & Veterans	NBT	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	NBL	0	0	260	625	206	251	0	0	260	625	206	251
26	SR-99 NB Ramps & Veterans	EBR	0	0	0	0	0	0	0	0	0	0	0	0
26	SR-99 NB Ramps & Veterans	EBT	0	0	1,915	1,827	2,355	2,239	0	0	1,915	1827	2,355	2239
26	SR-99 NB Ramps & Veterans	EBL	0	0	259	214	355	384	0	0	259	214	355	384
27	SR-99 SB Ramps & Veterans	SBR	0	0	90	189	95	180	0	0	90	189	95	180
27	SR-99 SB Ramps & Veterans	SBT	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	SBL	0	0	18	37	174	88	0	0	18	37	174	88
27	SR-99 SB Ramps & Veterans	WBR	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	WBT	0	0	1,333	2,705	1,437	3,003	0	0	1,333	2705	1,437	3003
27	SR-99 SB Ramps & Veterans	WBL	0	0	962	1,119	1,114	1,719	0	0	962	1119	1,114	1719
27	SR-99 SB Ramps & Veterans	NBR	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	NBT	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	NBL	0	0	0	0	0	0	0	0	0	0	0	0
27	SR-99 SB Ramps & Veterans	EBR	0	0	360	352	363	146	0	0	360	352	363	146
27	SR-99 SB Ramps & Veterans	EBT	0	0	2,156	2,004	2,536	2,535	0	0	2,156	2004	2,536	2535
27	SR-99 SB Ramps & Veterans	EBL	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	SBR	129	34	131	77	265	712	30	43	32	86	166	721
28	Bullard & Carnegie	SBT	39	11	98	99	250	465	9	29	68	117	220	483
28	Bullard & Carnegie	SBL	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	WBR	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	WBT	0	0	0	0	0	0	0	0	0	0	0	0

I/S No.	Intersection Name	Turning Movement	Existing Counts AM	Existing Counts PM	2025 Baseline Volumes AM	2025 Baseline Volumes PM	2025 W/Proj Volumes AM	2025 W/Proj Volumes PM	2007 Existing AM	2007 Existing PM	2025 Baseline Volumes AM	2025 Baseline Volumes PM	2025 W/Proj Volumes AM	2025 W/Proj Volumes PM
28	Bullard & Carnegie	WBL	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	NBR	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	NBT	107	22	139	101	514	243	7	27	39	106	414	248
28	Bullard & Carnegie	NBL	416	239	564	780	694	821	554	424	702	965	832	1006
28	Bullard & Carnegie	EBR	159	573	551	1,126	736	968	226	712	618	1265	803	1107
28	Bullard & Carnegie	EBT	0	0	0	0	0	0	0	0	0	0	0	0
28	Bullard & Carnegie	EBL	92	93	87	140	510	739	30	44	25	91	448	690
29	Golden State & Carnegie	SBR	2	3	90	66	100	135	28	23	116	86	126	155
29	Golden State & Carnegie	SBT	63	104	182	176	255	513	102	58	221	130	294	467
29	Golden State & Carnegie	SBL	35	101	477	539	684	558	50	164	492	602	699	621
29	Golden State & Carnegie	WBR	119	42	293	668	375	678	79	122	253	748	335	758
29	Golden State & Carnegie	WBT	0	0	35	27	40	77	108	94	143	121	148	171
29	Golden State & Carnegie	WBL	435	196	363	197	534	807	386	265	314	266	485	876
29	Golden State & Carnegie	NBR	188	529	182	714	571	1,095	191	424	185	609	574	990
29	Golden State & Carnegie	NBT	108	136	148	307	299	581	13	35	53	206	204	480
29	Golden State & Carnegie	NBL	0	0	38	51	49	25	145	102	183	153	194	127
29	Golden State & Carnegie	EBR	0	1	12	37	9	82	48	182	60	218	57	263
29	Golden State & Carnegie	EBT	0	0	9	1	17	18	34	157	43	148	51	175
29	Golden State & Carnegie	EBL	1	1	39	200	59	249	8	37	46	236	66	285
30	Dante & Bullard	SBR	47	27	47	27	47	35	0	0	0	0	0	8
30	Dante & Bullard	SBT	13	14	13	14	13	14	0	0	0	0	0	0
30	Dante & Bullard	SBL	90	23	118	60	101	126	113	105	141	142	124	208
30	Dante & Bullard	WBR	25	38	30	75	32	58	69	141	74	178	76	161
30	Dante & Bullard	WBT	241	190	471	782	890	844	148	415	378	1007	797	1069
30	Dante & Bullard	WBL	25	56	25	56	25	56	0	0	0	0	0	0
30	Dante & Bullard	NBR	18	9	18	9	18	9	0	0	0	0	0	0
30	Dante & Bullard	NBT	11	6	11	6	11	9	0	0	0	0	0	3
30	Dante & Bullard	NBL	166	56	166	56	166	58	0	0	0	0	0	2
30	Dante & Bullard	EBR	36	56	36	56	36	56	0	0	0	0	0	0
30	Dante & Bullard	EBT	136	385	637	979	875	1,107	264	351	765	945	1,003	1073
30	Dante & Bullard	EBL	17	101	17	101	18	101	0	0	0	0	1	0
31	Palm & Bullard	SBR	52	90	188	1,012	243	712	172	270	308	1192	363	892
31	Palm & Bullard	SBT	413	732	632	481	593	655	461	766	680	515	641	689
31	Palm & Bullard	SBL	77	75	59	65	68	62	130	128	112	118	121	115
31	Palm & Bullard	WBR	85	65	87	110	73	136	112	93	114	138	100	164
31	Palm & Bullard	WBT	432	703	648	343	687	614	657	929	873	569	912	840
31	Palm & Bullard	WBL	93	142	182	932	269	690	109	302	198	1092	285	850
31	Palm & Bullard	NBR	73	141	175	103	231	98	130	150	232	112	288	107
31	Palm & Bullard	NBT	382	757	793	1,181	689	1,174	423	763	834	1187	730	1180
31	Palm & Bullard	NBL	43	158	44	316	69	327	20	216	21	374	46	385
31	Palm & Bullard	EBR	69	68	68	95	84	96	55	29	54	56	70	57
31	Palm & Bullard	EBT	704	534	809	859	1,275	1,177	881	1,000	986	1325	1,452	1643
31	Palm & Bullard	EBL	137	148	267	208	279	53	213	306	343	366	355	211
32	Bryan & Veterans	SBR	0	0	201	413	192	351	0	0	201	413	192	351
32	Bryan & Veterans	SBT	0	0	968	1,850	1,001	2,027	0	0	968	1850	1,001	2027
32	Bryan & Veterans	SBL	0	0	255	631	339	805	0	0	255	631	339	805
32	Bryan & Veterans	WBR	0	0	638	653	838	810	0	0	638	653	838	810
32	Bryan & Veterans	WBT	0	0	85	212	116	262	0	0	85	212	116	262
32	Bryan & Veterans	WBL	0	0	45	148	54	111	0	0	45	148	54	111
32	Bryan & Veterans	NBR	0	0	102	98	99	95	0	0	102	98	99	95
32	Bryan & Veterans	NBT	0	0	1,571	1,432	1,754	1,652	0	0	1,571	1432	1,754	1652
32	Bryan & Veterans	NBL	0	0	12	20	13	47	0	0	12	20	13	47
32	Bryan & Veterans	EBR	0	0	12	22	10	22	0	0	12	22	10	22
32	Bryan & Veterans	EBT	0	0	99	141	119	237	0	0	99	141	119	237
32	Bryan & Veterans	EBL	0	0	307	272	307	220	0	0	307	272	307	220
33	Grantland & Barstow	SBR	8	6	6	13	8	14	11	26	9	33	11	34
33	Grantland & Barstow	SBT	122	86	11	44	15	207	192	290	17	150	24	411
33	Grantland & Barstow	SBL	6	6	1	3	2	16	56	90	8	48	18	100
33	Grantland & Barstow	WBR	9	6	1	1	3	4	72	128	11	29	27	86
33	Grantland & Barstow	WBT	4	10	93	322	95	218	23	81	112	393	114	289
33	Grantland & Barstow	WBL	4	4	3	0	3	0	1	5	0	0	0	0
33	Grantland & Barstow	NBR	5	2	4	0	4	0	1	6	0	0	0	0
33	Grantland & Barstow	NBT	206	80	31	16	74	121	249	288	37	58	117	329
33	Grantland & Barstow	NBL	5	2	18	34	18	136	2	9	15	41	15	143
33	Grantland & Barstow	EBR	7	2	30	15	26	20	4	4	27	17	23	22
33	Grantland & Barstow	EBT	5	4	289	147	260	115	56	20	340	163	311	131
33	Grantland & Barstow	EBL	14	6	6	3	14	22	22	16	14	13	22	32
34	SR-99 SB Ramps & Shaw	SBR	38	55	260	466	258	542	0	0	222	411	220	487
34	SR-99 SB Ramps & Shaw	SBT	0	0	0	0	0	0	0	0	0	0	0	0
34	SR-99 SB Ramps & Shaw	SBL	227	259	470	556	419	549	0	0	243	297	192	290
34	SR-99 SB Ramps & Shaw	WBR	0	0	17	149	6	70	0	0	17	149	6	70
34	SR-99 SB Ramps & Shaw	WBT	642	1,001	1,394	2,159	1,518	2,307	730	1,367	1,482	2525	1,606	2673
34	SR-99 SB Ramps & Shaw	WBL	0	0	0	0	0	0	141	149	0	0	0	0
34	SR-99 SB Ramps & Shaw	NBR	0	0	0	0	0	0	148	181	0	0	0	0
34	SR-99 SB Ramps & Shaw	NBT	0	0	0	0	0	0	0	0	0	0	0	0
34	SR-99 SB Ramps & Shaw	NBL	0	0	0	0	0	0	59	101	0	0	0	0
34	SR-99 SB Ramps & Shaw	EBR	317	181	607	553	514	469	466	414	756	786	663	702
34	SR-99 SB Ramps & Shaw	EBT	586	560	1,832	1,542	1,766	1,956	758	728	2,004	1710	1,938	2124
34	SR-99 SB Ramps & Shaw	EBL	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	SBR	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	SBT	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	SBL	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	WBR	192	302	424	710	464	854	0	0	232	408	272	552
35	SR-99 NB Ramps & Shaw	WBT	925	1,159	1,604	2,405	1,718	2,473	819	1,429	1,498	2675	1,612	2743
35	SR-99 NB Ramps & Shaw	WBL	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	NBR	109	237	121	315	139	365	0	0	12	78	30	128
35	SR-99 NB Ramps & Shaw	NBT	0	0	0	0	0	0	0	0	0	0	0	0
35	SR-99 NB Ramps & Shaw	NBL	202	214	837	967	924	1,015	0	0	635	753	722	801
35	SR-99 NB Ramps & Shaw	EBR	0	0	73	99	109	403	0	0	73	99	109	403
35	SR-99 NB Ramps & Shaw	EBT	702	818	1,723	1,319	1,621	1,428	910	1,111	1,931	1612	1,829	1721
35	SR-99 NB Ramps & Shaw	EBL	0	0	0	0	0	0	0	0	0	0	0	0
36	Golden State & Shaw	SBR	14	23	2	10	4	103	124	130	16	57	34	210
36	Golden State & Shaw	SBT	314	216	396	301	507	619	292	230	374	315	485	633
36	Golden State & Shaw	SBL	109	79	231	216	328	621	183	213	305	350	402	755
36	Golden State & Shaw	WBR	74	166	138	412	391	669	121	139	185	385	438	642
36	Golden State & Shaw	WBT	791	1,343	1,182	2,259	1,236	2,259	724	1,284	1,115	2200	1,169	2200
36	Golden State & Shaw	WBL	276	321	333	577	322	596	418	351	475	607	464	626
36	Golden State & Shaw	NBR	405	686	664	927	603	887	304	416	563	657	502	617
36	Golden State & Shaw	NBT	236	502	300	761	507	926	242	303	306	562	513	727
36	Golden State & Shaw	NBL	15	40	18	52	18	50	3	7	6	19	6	17
36	Golden State & Shaw	EBR	33	47	59	60	67	76	5	7	31	20	39	36
36	Golden State & Shaw	EBT	705	936	1,710	1,554	1,551	1,623	856	962	1,861	1580	1,702	1649
36	Golden State & Shaw	EBL	26	20	5	12	36	71	52	180	9	104	62	231
37	Brawley & Shaw	SBR	130	151	137	180	139	174	5	6	12	35	14	29
37	Brawley & Shaw	SBT	561	308	722	448	640	493	353	238	514	378	432	423
37	Brawley & Shaw	SBL	180	309	14	370	125	446	359	247	193	308	304	384

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37	Brawley & Shaw	WBR	56	159	36	83	36	149	202	389	130	313	129	379
37	Brawley & Shaw	WBT	833	1,472	1,295	2,094	1,549	2,123	699	1,103	1,161	1725	1,415	1754
37	Brawley & Shaw	WBL	103	184	118	155	96	173	361	214	376	185	354	203
37	Brawley & Shaw	NBR	57	132	67	94	61	110	101	432	111	394	105	410
37	Brawley & Shaw	NBT	161	611	115	707	206	708	229	379	183	475	274	476
37	Brawley & Shaw	NBL	148	240	184	453	210	404	33	60	69	273	95	224
37	Brawley & Shaw	EBR	55	127	186	258	191	339	40	55	171	186	176	267
37	Brawley & Shaw	EBT	920	1,329	1,772	1,805	1,613	1,854	716	1,035	1,568	1511	1,409	1560
37	Brawley & Shaw	EBL	92	262	98	303	96	282	3	6	9	47	7	26
38	Marks & Shaw	SBR	313	326	515	711	515	298	328	507	530	892	530	479
38	Marks & Shaw	SBT	384	320	381	333	483	859	581	696	578	709	680	1235
38	Marks & Shaw	SBL	243	195	237	177	249	186	91	54	85	36	97	45
38	Marks & Shaw	WBR	52	150	41	179	36	144	44	86	33	115	28	80
38	Marks & Shaw	WBT	735	1,209	1,143	1,547	1,294	1,927	1,133	1,405	1,541	1743	1,692	2123
38	Marks & Shaw	WBL	128	274	164	415	162	66	147	371	183	512	181	163
38	Marks & Shaw	NBR	340	162	211	159	165	150	337	251	208	248	162	239
38	Marks & Shaw	NBT	330	526	438	614	514	738	413	843	521	931	597	1055
38	Marks & Shaw	NBL	158	386	202	455	199	469	45	108	89	177	86	191
38	Marks & Shaw	EBR	69	198	89	266	85	288	71	88	91	156	87	178
38	Marks & Shaw	EBT	1,118	1,180	1,930	1,743	1,720	1,925	959	1,421	1,771	1984	1,561	2166
38	Marks & Shaw	EBL	165	450	247	465	359	527	419	573	501	588	613	650
39	West & Shaw	SBR	131	140	53	86	100	182	237	219	159	165	206	261
39	West & Shaw	SBT	371	438	400	806	418	911	523	581	552	949	570	1054
39	West & Shaw	SBL	133	121	175	280	166	169	50	52	92	211	83	100
39	West & Shaw	WBR	60	103	62	224	111	264	38	82	40	203	89	243
39	West & Shaw	WBT	852	1,237	1,372	1,577	1,409	1,449	1,202	1,805	1,722	2145	1,759	2017
39	West & Shaw	WBL	137	237	162	83	183	20	236	478	261	324	282	261
39	West & Shaw	NBR	231	117	219	111	188	143	260	345	248	339	217	371
39	West & Shaw	NBT	478	293	472	344	567	386	485	798	479	849	574	891
39	West & Shaw	NBL	174	197	180	157	197	217	152	244	158	204	175	264
39	West & Shaw	EBR	125	109	148	50	91	92	173	180	196	121	139	163
39	West & Shaw	EBT	1,224	1,137	1,813	1,432	1,544	1,541	1,570	1,604	2,159	1899	1,890	2008
39	West & Shaw	EBL	105	182	88	308	88	316	79	253	62	379	62	387
40	SR-99 SB Ramps & Ashlan	SBR	65	68	112	108	133	171	26	37	73	77	94	140
40	SR-99 SB Ramps & Ashlan	SBT	21	66	68	187	76	225	39	90	86	211	94	249
40	SR-99 SB Ramps & Ashlan	SBL	116	121	177	264	242	407	160	217	221	360	286	503
40	SR-99 SB Ramps & Ashlan	WBR	0	0	0	0	0	0	0	0	0	0	0	0
40	SR-99 SB Ramps & Ashlan	WBT	374	947	584	901	567	852	922	1,684	1,132	1638	1,115	1589
40	SR-99 SB Ramps & Ashlan	WBL	109	319	99	326	90	567	152	215	142	222	133	463
40	SR-99 SB Ramps & Ashlan	NBR	310	396	401	546	459	548	315	308	406	458	464	460
40	SR-99 SB Ramps & Ashlan	NBT	0	0	0	0	0	0	0	0	0	0	0	0
40	SR-99 SB Ramps & Ashlan	NBL	18	45	52	56	55	55	4	6	38	17	41	16
40	SR-99 SB Ramps & Ashlan	EBR	31	59	34	72	34	81	3	3	6	16	6	25
40	SR-99 SB Ramps & Ashlan	EBT	1,191	850	1,209	1,006	1,498	1,026	1,557	1,252	1,575	1408	1,864	1428
40	SR-99 SB Ramps & Ashlan	EBL	0	0	0	0	0	0	0	0	0	0	0	0
41	SR-99 NB Ramps & Ashlan	SBR	168	315	227	376	275	460	69	99	128	160	176	244
41	SR-99 NB Ramps & Ashlan	SBT	0	0	0	0	0	0	0	0	0	0	0	0
41	SR-99 NB Ramps & Ashlan	SBL	155	164	186	215	238	212	64	195	95	246	147	243
41	SR-99 NB Ramps & Ashlan	WBR	226	564	188	459	274	385	267	454	229	349	315	275
41	SR-99 NB Ramps & Ashlan	WBT	359	725	581	1,162	598	1,500	972	1,271	1,194	1708	1,211	2046
41	SR-99 NB Ramps & Ashlan	WBL	0	0	0	0	0	0	0	0	0	0	0	0
41	SR-99 NB Ramps & Ashlan	NBR	415	701	369	528	438	512	332	437	286	264	355	248
41	SR-99 NB Ramps & Ashlan	NBT	7	15	98	294	216	378	118	64	209	343	327	427
41	SR-99 NB Ramps & Ashlan	NBL	210	464	275	259	256	239	334	729	399	524	380	504
41	SR-99 NB Ramps & Ashlan	EBR	0	0	0	0	0	0	0	0	0	0	0	0
41	SR-99 NB Ramps & Ashlan	EBT	872	920	906	1,064	1,145	1,181	1,235	1,079	1,269	1223	1,508	1340
41	SR-99 NB Ramps & Ashlan	EBL	280	192	347	329	342	332	125	103	192	240	187	243
241	Golden State NB Ramps & Vetera	SBR	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vetera	SBT	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vetera	SBL	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vetera	WBR	0	0	3	8	141	320	0	0	3	8	141	320
241	Golden State NB Ramps & Vetera	WBT	0	0	1,956	2,586	2,175	3,407	0	0	1,956	2586	2,175	3407
241	Golden State NB Ramps & Vetera	WBL	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vetera	NBR	0	0	43	124	133	285	0	0	43	124	133	285
241	Golden State NB Ramps & Vetera	NBT	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vetera	NBL	0	0	266	720	231	470	0	0	266	720	231	470
241	Golden State NB Ramps & Vetera	EBR	0	0	0	0	0	0	0	0	0	0	0	0
241	Golden State NB Ramps & Vetera	EBT	0	0	1,978	2,259	2,738	2,879	0	0	1,978	2259	2,738	2879
241	Golden State NB Ramps & Vetera	EBL	0	0	27	22	238	609	0	0	27	22	238	609
242	Golden State SB Ramps & Vetera	SBR	0	0	16	135	188	935	0	0	16	135	188	935
242	Golden State SB Ramps & Vetera	SBT	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vetera	SBL	0	0	1	6	104	281	0	0	1	6	104	281
242	Golden State SB Ramps & Vetera	WBR	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vetera	WBT	0	0	2,147	3,279	2,287	3,751	0	0	2,147	3279	2,287	3751
242	Golden State SB Ramps & Vetera	WBL	0	0	74	27	119	126	0	0	74	27	119	126
242	Golden State SB Ramps & Vetera	NBR	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vetera	NBT	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vetera	NBL	0	0	0	0	0	0	0	0	0	0	0	0
242	Golden State SB Ramps & Vetera	EBR	0	0	423	458	501	374	0	0	423	458	501	374
242	Golden State SB Ramps & Vetera	EBT	0	0	2,003	2,275	2,871	3,207	0	0	2,003	2275	2,871	3207
242	Golden State SB Ramps & Vetera	EBL	0	0	0	0	0	0	0	0	0	0	0	0

Appendix L3
TIS Updates, December 2009

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TECHNICAL MEMORANDUM

TO: JoAnn Hadfield, The Planning Center

FROM: Dennis M. Pascua, PTP
Professional Transportation Planner

DATE: December 8, 2009

SUBJECT: **Addendum to the Traffic Impact Study (TIS) for the Fresno El Paseo Master Plan**

The following Technical Memorandum provides an addendum to the *Final Traffic Impact Study (TIS) for the El Paseo Project* (Volumes 1 and 2), prepared by DKS Associates (DKS), dated October 30, 2008; and, the letter titled *Review of Final Traffic Impact Study (TIS) for El Paseo Project which includes approximately 238 acres bound by Bryan Avenue/Bullard Avenue, Herndon Avenue, Carnegie Avenue, and State Route 99. TIS08-011 dated October 30, 2008 received November 24, 2008*, dated December 9, 2008, prepared by Bryan Jones, Manager – Transportation Department of the City of Fresno (City).

This addendum provides updates to information provided in the TIS based on information provided by the City of Fresno Traffic Engineering Department between December 2008 and December 2009. Information provided in this addendum supersedes the information provided in the October 2008 TIS, and is intended to be a supplement to the October 2008 TIS.

10 Percent Project Contribution Criteria

Per discussions with the City Traffic Engineer, for intersections forecast to operate at LOS E or F, in addition to the "*5 seconds or greater delay addition to LOS E or F*" criteria, if the project produces less than 10 percent of the total traffic at the intersection, the project would not create a significant impact and its contribution would not be "cumulatively considerable".

LOS vs. Queue Impacts at Golden State Boulevard/Herndon Avenue

The following footnote was added to the intersection LOS tables in the Draft Environmental Impact Report (DEIR) as it relates to the Golden State Boulevard/Herndon Avenue intersection: Demand vs. capacity is being served at this intersection. Truck traffic queues are not being served due to the effects of the limited lane geometrics at the adjacent railroad crossing, which affects the intersection's saturation flow rate.

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Queuing Analysis

The following are updates to the queuing analyses provided in the TIS. According to the City Traffic Engineer, there are no specific significance criteria for intersection queuing with respect to CEQA documentation. Therefore, the purpose of the queuing analysis in the TIS is to evaluate potential queuing issues at an operational level.

- Delete the queuing analysis significance criteria (i.e., 25 feet beyond lane storage capacity) language on Page 4-2.
- Delete the baseline year plus project queuing analysis results and mitigation measures for analysis years 2007, 2010, 2012, 2017, 2019, and 2025 (plus project) discussions on the following pages:
    - Pages 9-2, 9-5, and 9-13 to 9-16 – Existing plus Master Plan
    - Pages 9-29, 9-31, and 9-47 to 9-52 – Year 2010 plus Phase 1
    - Pages 9-67, and 9-75 to 9-79 – Year 2012 plus Phases 1 and 2
    - Pages 9-90, and 9-98 to 9-101 – Year 2017 plus Phases 1 through 4
    - Pages 9-113, and 9-120 to 9-124 – Year 2019 plus Phases 1 through 5
    - Pages 9-136, 9-138, and 9-148 to 9-150 – Buildout 2025 plus Master Plan (Phases 1 through 5)

The removal of the queuing analyses has been done in the project's DEIR.

Update of Committed Improvements in Study Area

Per recent discussions with Public Works Engineers (Bryan Jones and Scott Mozier), the following are updates to the committed roadway improvements in the study area:

- Per *Figure 7-2 – Future Study Area Cumulative Background Improvements*, in the TIS, the following changes have been made:
    - The Herndon Avenue Traffic Signal Synchronization Program was completed in 2009.
    - The Herndon Avenue widening to six lanes between Brawley Avenue and Marks Avenue will be completed in 2010. This project would improve levels of service (LOS) on Herndon Avenue, as well as LOS at the intersections at Brawley Avenue and Marks Avenue (with the addition of a third through lane in the eastbound and westbound approaches).
    - Major improvements related to the Veterans Boulevard overpass and interchange with SR 99, and extension to West Fresno to Grantland Avenue; and the Herndon Avenue UPRR crossing underpass, have been noted as "identified improvements" as the scheduled funding for these projects have slowed down. The City will require that future phases of the Master Plan (Phases 2 through 5) will be required to perform a separate project-level traffic study to identify the status of those improvements.

  The reporting of the intersection and roadway LOS results with the updates noted above have been done in the project's DEIR as well as the *El Paseo Phase 1 Sub-Phasing Traffic Analysis*, prepared by Arch Beach Consulting in December 2009 (revised).

Class I (Off-Street) Pedestrian Trails

The following is an update to the Class I (off-street) trails discussed in the TIS:

> Currently there are no existing bicycle facilities in the immediate project vicinity along Herndon Avenue. However, there are existing bike lanes along Polk Avenue and Bullard Avenue. In addition, since a majority of the project site is unimproved, there are no dedicated pedestrian facilities in the immediate project vicinity along the project frontages on Herndon Avenue and Bryan Avenue. The existing Bicycle Transportation Plan (www.fresnoBM.com) shows planned Class I off-street bicycle/pedestrian trails for both Herndon Avenue and the future Veterans Boulevard. Currently, portions of the Herndon Avenue Trail are constructed (in front of the Derrell's mini storage between Bryan Avenue and Hayes Avenue, and near the intersection of Herndon Avenue/Polk Avenue). However, between the BNSF railroad tracks and the UP railroad tracks, the Herndon Avenue trail is not constructed. These segments will be constructed with grants and as development occurs in the area. On the future Veterans Boulevard, only one-quarter mile of the Veterans Boulevard Trail exists today. This trail is only planned and not constructed, but will also be built with grants and as development occurs in the area.

This information has been included in the DEIR.

This concludes the updates to the October 2008 TIS. As previously noted, this addendum is intended to be a supplement to the TIS. All updates and revisions have been comprehensively included in the Transportation section of the project's DEIR.

Appendix L4
TIS Updates: Regional Traffic Mitigation Fee Program and Combined Share Fee, July 2010

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TECHNICAL MEMORANDUM

TO: JoAnn Hadfield, The Planning Center
John Vang, The Planning Center

FROM: Dennis M. Pascua, PTP
Professional Transportation Planner

DATE: July 20, 2010

SUBJECT: **El Paseo Master Plan Traffic Impact Study: Applicable Traffic Fee Programs and Mitigation Clarification**

Subsequent to the submittal of the *Final Traffic Impact Study (TIS) for the Fresno El Paseo Project* on October 30, 2008, by DKS Associates (found in Appendix L of the DEIR), Fresno County adopted the Regional Transportation Mitigation Fee (RTMF). This program and associated fees were not documented in the 2008 TIS or subsequent technical memoranda included in Appendix L of the May 2010 Draft EIR. A description of the RTMF program is included below and is also documented in the Recirculated Draft EIR (July 2010). As described in the Recirculated Draft EIR, the nexus study prepared for the RTMF program does not include the majority of the Caltrans facilities that would be impacted by the proposed El Paseo Project. Combined Fair Share fees, therefore, shall still apply to mitigate the project-related contribution to impacts to those Caltrans facilities. The Combined Share fee formula that shall apply for the project was documented in the original TIS and is reproduced below for reference.

Fresno County Regional Transportation Mitigation Fee

Adopted in 1986, *Measure "C"* implemented a half-cent sales tax affecting 15 cities in Fresno County to fund a variety of programs to improve the overall quality of the County's transportation system. One-quarter of the proceeds of the retail transactions and use tax is allocated to each city and to the County for local priority improvement projects, including roadway reconstruction, roadway safety projects, traffic signals, and bike lanes. In 2006, Fresno County voters approved the *Measure "C" Extension*, which approved the implementation of the Regional Transportation Mitigation Fee (RTMF) that has been developed and approved by the Fresno Council of Governments (COG) and Transportation Authority in conjunction with local jurisdictions. The purpose of the RTMF is to establish a uniform, cooperative program to mitigate the cumulative indirect regional impacts of future development on traffic conditions on high-priority State roadways in Fresno County. The RTMF program is slated to fund 30 percent of the Regional Transportation Program, with the remaining funding coming from Measure C (50 percent) and the State Transportation Improvement Program (STIP).

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The RTMF went into effect on January 1, 2010. It is similar to the City's TSMI and FMSI programs in that it charges a "fee per unit" for new developments. For retail/commercial development, the 2010 fee is $1.65 per square foot of commercial/retail building space and $1.03 per square foot of commercial/office/service space, to be assessed prior to the Certificate of Occupancy. The fee structure adopted for 2011 and after is $1.96 and $1.23, respectively, per square foot of commercial retail and commercial office/service space. The fee structure also includes per-unit residential rates, ranging from $509 per multifamily affordable unit to $1,450/single family dwelling (market rate) in 2010.

The fee structure is based upon the *Fresno County RTMF Nexus Study Report*, February 2009 (Parsons Brinckerhoff). The Nexus Study details the basis for the impact fees and the consistency with the legal parameters of California's Mitigation Fee Act (Assembly Bill 1600) that stipulates the following steps in establishing impact fees:

- Identify the purpose of the fee.
- Identify the use to which the fee is to be put.
- Determine how there is a reasonable relationship between fee's use and the development type on which it is imposed.
- Determine how there is a reasonable relationship between the need for the facility and the type of development on which the fee is imposed.
- Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.

Tier 1 Urban Projects in the study area of the El Paseo Master Plan project study area include (project fact sheets attached):

1. Herndon Avenue Widening
    a. Valentine Avenue to Marks Avenue; completion in 2010
    b. SR 99 to Weber Avenue; completion 2010
    c. SR 99 Undercrossing Widening; estimated completion 2027 (project not programmed)
    d. SR 99 Union Pacific Railroad Underpass; estimated completion 2027 (project not programmed)
2. Veterans Boulevard
    a. Improve connection and construct grade separation on Veterans Boulevard from Herndon Avenue (over UPRR and SR 99) to Grantland Avenue; Design/Environmental only programmed to be completed in 2010; construction to be programmed in the Mid- or Long-Term Program currently under review at COG.

Caltrans Combined Share Percentage

For those impacted Caltrans facilities not on the RTMF Nexus Study (listed above), the Caltrans Combined Share was calculated per the Combined Share Formula below:

P = (P1/F1) + (P2 – P1)/F2, where:

P = fair share percentage
P1 = the higher of the AM or PM peak hour project trips without GPA
P2 = the higher of the AM or PM peak hour project trips with GPA
F1 = total 2025 corresponding future peak hour traffic without project
F2 = total 2025 corresponding future peak hour traffic with project

The calculated Combined Share percentages for impacted Caltrans facilities are provided in the *Final Traffic Impact Study (TIS) for the Fresno El Paseo Project* found in Appendix L of the DEIR. The resulting Combined Share percentages would be applied to the cost estimates prepared by Caltrans District 6 to determine the proposed project's Combined Share cost for improvements.

Attachments: Measure C/RTMF Fact Sheets for projects in study area

Measure C In My Area

REGIONAL TRANSPORTATION PROGRAM EXTENSION PROJECTS

The following projects are part of the Regional Transportation Program of the Measure C Extension. Approximately $504 million has been divided equally between the urban and rural areas of the County, and more than $17 million will pay for improvements to Fresno Yosemite International and Chandler Airports.

The funding for the Regional Transportation Program comes from three sources – fifty percent from Measure C, twenty percent from the State Transportation Improvement Program (STIP), and thirty percent from the Regional Transportation Mitigation Impact Fee program (RTMF). The RTMF program is developed and approved by the Fresno COG and Transportation Authority in conjunction with all local jurisdictions. It will become effective no later than January 1, 2009 and shall cover the entire 20-year period of Measure C Extension.

Fresno COG, the Authority's Regional Planning Agency, will prioritize the Measure C Extension projects and will assign the funding allocations and schedule completion dates for each project. Projects will not begin until all of the requirements are met.

Due to the complexity of prioritizing and ranking the Regional Transportation Program projects, the Program has been divided into three categories: 1) Short-Term, 2) Mid-Term and 3) Long-Term. The Short-Term Program will run through fiscal year 2013-2014. Updates to the projects will be made bi-annually to reflect any changes to project schedules or acceleration of the Program or projects.

Tier 1 Urban Projects

ID	Project Name	Project Description	Funding	Progress
A	SR 180 East Seg II [Map]	New multi-lane Freeway on State Route 180 East from Clovis to Temperance. This project is a holdover from the Original Measure C Expenditure Plan.	*State Taxes*: $71 Million *Measure C*: $12 Million	Construction began March 2008 and was completed in November 2010. Total Project Costs $107.7M.
B	SR 180 West Seg II (Brawley to Hughes/West) [Map]	Three phase project. B1 - New Freeway on SR 180 West from Brawley to Hughes West. B2- Frontage Road (Realign Ronquio Blvd) B3-Landscaping & Irrigation.	*Measure C*: $46 Million *TCRP*: $4 Million	B1 - Completed 12/08
	Phases:			
	B1	New Freeway on SR 180 West from Brawley to Hughes West.	*Measure C*: $38 Million	Completed 12/08 - - Grand Total Project Costs $83.1 Million
	B2	Construct Frontage Road, Realign Ronquio Blvd and Install Traffic Signal	*Measure C*: $7 Million	Begin: 2008 End: 2011
	B3	Install Landscaping & Irrigation on the new freeway from Brawley to Teilman Avenue (Hughes/West Connector).	*STIP*: $5.45 Million	Begin: 2013 End: 2014
C	SR41/168/180 [Map]	New Braided Ramps adding capacity for safe connection between State Routes 41, 168 & 180.	*Measure C*: $7.51 Million *RTMF*: $2.98 Million	Due to cost savings the Preliminary Engineering, Design and ROW schedule has been accelerated. Begin 2010 End 2012. Construction to be scheduled in the Mid- & Long- Term Program still under review possibly to
D	Willow Avenue [Map]	On Willow Ave from Barstow to Copper Ave complete to 6-Lane Divided Road	*Measure C*: $13.49 Million	Project to be built in 7 phases.

		and retrofit existing bike paths.	*Local Development Fees*: $5.42 Million *Federal Aid*: $2.56 Million	
	Phases:			
	D1	Construct 2nd & 3rd northbound lanes with median, landscaping from Shepperd to Copper Ave. and traffic signal at Perrin Avenue.	*Measure C*: $5.99 Million *Local Development Fees*: $1.49 Million	Begin: 2012 End: 2014
	D2	Construct outside travel lane on the East side of roadway, median and landscaping from Teague to Perrin Ave.	*Measure C*: $310,000 *Local Development Fees*: $453,000	Begin: 2008 End: 2009
	D2A	Install traffic signal and intersection improvements at Willow and Shepherd Avenue.	*Measure C*: $353,000 *Local Development Fees*: $1.84 Million	Begin: 2007 End: 2008
	D3	Construct outside travel lane on the East side of the roadway, sidewalk, street lights and landscaping from Alluvial for 1/4 mile.	*Measure C*: $509,000 *Local Development Fees*: $699,000	Begin: 2011 End: 2013
	D4A	Construct South bound lane on West side of Roadway, median, curbs and landscaping from Teague to Shepherd Ave.	*Measure C*: $289,000 *Local Development Fees*: $72,000	Begin: 2008 End: 2009
	D4B	Widen to 3 Southbound lanes from Shepherd Avenue to Behymer Avenue.	*Measure C*: $2.86 Million *Local Development Fees*: $715,000	Begin: 2008 End: 2009
	D5	Widen to 3 Southbound lanes from Decatur Avenue to Shepherd Avenue.	*Measure C*: $1.34 Million *Federal Aid*: $2.56 Million	Begin: 2009 End: 2011
	D6	Widen to 3 Southbound lanes form International Avenue to Copper Avenue.	*Measure C*: $571,000 *Local Development Fees*: $143,000	Begin: 2013 End: 2014
	D7	Widen to 3 Southbound lanes from Herndon Avenue to Alluvial Avenue.	*Measure C*: $1.27 Million *Local Development Fees*: $317,000	Begin: 2012 End: 2013
E	Temperance Avenue [Map]	Widen Temperance Ave from Bullard to Shepherd Ave to a 4-Lane Divided Road.	*Measure C*: $3.88 Million *Federal Aid*: $1.25 Million *Local Development Fees*: $0.66 Million	This project will be built in 3 phases
	Phases:			
	E1	Widen to 4-Lane divided expressway from the Enterprise Canal to Nees Avenue and install a traffic signal at Nees Avenue.	*Measure C*: $1.21 Million *Local Development Fees*: $303,000	Begin: 2012 End: 2013
	E2	Widen to a 4-Lane divided Expressway north and south of Sierra Avenue and install traffic signal at Sierra Avenue.	*Measure C*: $1.25 Million *Federal Aid*: $1.25 Million	Begin: 2010 End: 2012
	E3	Widen to a 4-Lane Expressway with sidewalk, street lights and landscaping from Nees to Shepherd Avenue with traffic signal at Shepherd Avenue.	*Measure C*: $1.41 Million *Local Development Fees*: $354,000	Begin: 2012 End: 2014
F	Ventura Boulevard	Widen Ventura Boulevard from State	*Measure C*:	Begin: 2011 End: 2012

	[Map]	Route 41 to State Route 99 to a 4-Lane Divided Road.	$6.02 Million *Local Development Fees*: $200,000	
G	SR99 Monterey Bridge Retrofit [Map]	Replace the Monterey Street Bridge to improve access to the downtown area from West Fresno.	*Measure C*: $1.6 Million *State Taxes*: $6.41 Million	Begin: 2008 End: 2011 Majority of funding through the State Highway Bridge Replacement Program.
H	California Ave Widening [Map]	Widen California Ave to a 4-Lane Divided Road from Ventura Ave to Fruit Ave.	*Measure C*: $15.91 Million *Local Development Fees*: $600,000	This project has been split into two phases. Phase 1 Completed Phase 2 Begin: 2018 - End: 2019
	Phases:			
	H1	Widen California Avenue from West to Fruit Avenues to a 4-Lane Divided Arterial	*Measure C*: $4.4 Million *Local Development Fees*: $600 Million	This Phase is completed.
	H2	Widen California Avenue to a 4-Lane Divided Arterial from Fruit Avenue to Ventura Avenue.	*Measure C*: $11.87 Million	This project/phase is not programmed.
I	Peach Ave Widening [Map]	Widen Peach Ave to a 4-Lane Divided Road from State Route 180 to Jensen Ave.	*Measure C*: $15.08 Million *TCRP*: $10 Million	This project is split into 2 phases.
	Phases:			
	I2	Widen to 4-lanes from Jensen Avenue to Butler Avenue.	*Measure C*: $9.39 Million	Design-Begin: 2009 End:2010 Construction-Begin: 2012 End: 2013
	I3	Widen to 4-Lanes from Butler Avenue to State Route 180.	*Measure C*: $5.68 Million *TCRP*: $10 Million	Design- Begin: 2008 End: 2009 Construction-Begin: 2012 End: 2013
J	SR41 Auxiliary Lane [Map]	Widen State Route 41 and build Auxiliary Lanes and improve on/off ramps from Tulare Street to O Street.		Project will be included in the Mid- or Long-Term Program currently under review at COG.
K	Herndon Ave Widening [Map]	Complete the widening of Herndon Ave to a 6-Lane Divided Road from State Route 99 to De Wolf Ave and retrofit existing bike paths.	*Measure C*: $3.5 Million *Federal Aid*: $6.66 Million *TCRP*: $2.63 Million *Local Development Fees*: $265,000	This project has been split into 4 phases in the Short-Term Program.
	Phases:			
	K1	Widen & install dual left turn lanes, traffic signal, sidewalks and median from Willow Avenue to Clovis Avenue	*Measure C*: $0.63 Million *TCRP*: $2.63 Million	Begin: 2008 End: 2009
	K2	Widen, provide dual left turn lanes, sidewalks and install traffic signal from Clovis Avenue to Fowler Avenue.	*Measure C*: $1.06 Million *Local Development Fees*: $263,000	Design-Begin:2009 End:2010 Construction-Begin:2011 End:2012
	K6	Widen to 6 lanes from Valentine Avenue to Marks Avenue.	*Measure C*: $807,000 *Federal Aid*: $2.13 Million	Begin: 2008 End: 2010
	K7	Widen to 6 lanes and provide dual left turns at Golden State Boulevard.	*Measure C*: $996,000 *Federal Aid*: $4.53 Million	Begin: 2008 End: 2009
	K8	Herndon Ave (SR99 Undercrossing)	*Measure C*: $26.36 Million	This project is not programmed.
	K9	Construct 6-Lane Underpass to the Union Pacific Rail Road (UPRR) Crossing at Herndon Avenue.	*Measure C*: $61.37 Million	This project is not programmed.
L	Shaw Ave Upgrades [Map]	Improve Shaw Ave from Sunnyside to McCall to 6-Lane Divided Road	*Measure C*: $9.54 Million	This project has been split into 2 phases in the

		upgrading traffic signals and grade crossings.	*Local Development Fees*: $2.39 Million	Short-Term Program.
	Phases:			
	L1	Widen to a 6-Lane divided Expressway, street lights sidewalk and traffic signal from Local to DeWolf Avenue.	*Measure C*: $1.52 Million *Local Development Fees*: $379,000	Begin: 2011 End: 2013
	L2	Widen to a 6-Lane divided Expressway, install outside travel lane, street lights, median, landscaping and undercrossing from DeWolf to McCall Avenue.	*Measure C*: $8.03 Million *Local Development Fees*: $2.01 Million	Begin: 2012 End: 2014
M	SR 99 Interchanges [Map]	Improve State Route 99 Interchanges at North and Cedar Avenues.		This project will be programmed in the Mid- or Long-Term Program currently under review at COG.
N1	Veteran's Boulevard [Map]	Improve connection and construct grade separation on Veterans Boulevard from Herndon Ave to Grantland Ave.	*Measure C*: $1.5 Million *Local Development Fees*: $500,000	Design/Environmental only programmed in Short-Term Program. Begin: 2008 End: 2010 Construction to be programmed in the Mid- or Long-Term Program currently under review at COG.

Tier 1 Rural Projects

ID	Project Name	Project Description	Funding	Progress
A	SR 180 West [Map]	Create passing lanes in each direction on State Route 180 West (Whitesbridge Road) from Yuba Ave to James Ave.	*Measure C*: $11.49 Million	Design- Begin: 2011 End: 2012 Right of Way- Begin: 2012 End: 2013 Construction-Begin: 2013 End: 2014
B	SR 180 East Seg III [Map]	Widen State Route 180 East from Temperance to Academy Ave to a 4-Lane Divided Expressway.	*Measure C*: $24.3 Million *Federal Aid*: $18.3 Million *STIP*: $21.2 Million	Original Measure C Program Funds. This project has been accelerated from the 2012/13 STIP Program using Original Measure C funds and leveraging Federal Stimulus ARRP funds. Begin: 2009 End: 2011
C	SR 180 East Seg IV [Map]	Widen State Route 180 East from Academy to Trimmer Springs to a 2-Lane Expressway on 4-Lane right-of-way. The design and right of way portion of this project has been accelerated using $13.79 million of Original Measure funds.	*Measure C*: $13.79 Million	Part of the Original Measure C Program. Design, Environmental and Right of Way Phase - Begin: 2010 End: 2013; Construction Phase - Begin: 2012 End: 2013
D	SR 180 East Seg V [Map]	Widen State Route 180 East from Trimmer Springs to Frankwood Ave to a 2-Lane Expressway on 4-Lane right-of-way. The Design portion ($4,161 M) of this project has been accelerated using Original Measure funds. The right of way and construction for this pr	*Measure C*: $4.16 Million	Part of the Original Measure C Program. Design Phase - Begin: 2014 End: 2015; Right of Way Phase - Begin: 2017 End: 2019; Construction Phase - Begin: 2019 End: 2021
E	Friant Road Widening [Map]	Widen Friant Road from Copper Ave to Millerton to a 4-Lane	*Measure C*: $4.12 Million	Begin: 2008 End: 2009
F	Golden State Boulevard [Map]	Corridor improvements to Golden State Boulevard from American Ave. to Tulare County line.	*Measure C*: $6.49 Million	Design- 2008 End: 2009 Environmental- Begin: 2013 End: 2014 Right of Way/Construction to be programmed in the Mid- or Long-Term Program currently under review at COG.
G	SR 269 Bridge Improvement [Map]	Build new bridge and channel on SR269 between SR198 and Huron to address seasonal road closures due to flooding.		This project will be programmed in the Mid- or Long-Term Program currently under review at

				COG.
H	SR 180 West I5 Extension [Map]	Study to extend State Route 180 West to Interstate 5 as a 3-Lane undivided highway.		This project will be programmed in the Mid - or Long-Term Program currently under review by COG at this time.
I	Mountain View Ave Widening [Map]	Widen Mountain View Ave to a 4-Lane Divided road from Bethel Ave to the Tulare County line.	*Measure C*: $24.06 Million	Project under Design and ROW phase. Design- Began 2008 End: 2010 Right of Way- Begin: 2009 End: 2010 Construction - Begin: 2010 End: 2011
J	Academy Ave Widening [Map]	Widen Academy Ave from Manning Ave to Industrial Way in Parlier.	*Measure C*: $3.54 Million	Design/Right of Way- Begin: 2008 End: 2009 Construction- Begin: 2009 End: 2010
K	SR99 American Ave Interchange Improvement [Map]	Improve American Avenue Interchange on State Route 99.		This project will be programmed in the Mid- or Long-Term Program currently under review at COG.
L	I-5 Interchange Improvement [Map]	Construct Interchange Improvement at the State Route 99 Interstate 5 Connection.		This project will be programmed in the Mid- or Long-Term Program currently under review at COG.

Tier 2 projects, both Urban and Rural, are listed below and are in a generalized priority order. Projects will move forward as they become deliverable not in the order they are listed below. The Measure C Extension Expenditure Plan is reviewed every two years by Fresno COG to determine project readiness. The project funding order will be determined by Fresno COG during their biannual review and become deliverable based on the project cost benefit, project readiness, and funding availability.

Tier 2 Urban Projects

ID	Project Name	Project Description	Funding	Progress
AA	SR99 Ramp Improvement	Improve on and Off Ramps on State Route 99 at Stanislaus and Tuolumne to improve downtown Fresno access.		No funding available at this time. COG and the Authority will review funding availability every two years.
BB	SR 41 O Street Ramps	Widen and build Auxiliary Lanes and Improve On/Off Ramps on State Route 41 and O Street Ramps.		No funding available at this time. COG and the Authority will review funding availability every two years.
CC	Friant Road Widening	Widen Friant Road to a 6-Lane Divided Road from Shepherd Ave to Copper Ave.		No funding available at this time. COG and the Authority will review funding availability every two years.
DD	SR 99 Shaw Ave Interchange	Improve Interchange on State Route 99 at Shaw Ave.		No funding available at this time. COG and the Authority will review funding availability every two years.
EE	Traffic Synchronization	Coordinate Traffic Signals in selected regionally significant corridors in the cities of Fresno and Clovis.		No funding available at this time. COG and the Authority will review funding availability every two years.
FF	Herndon Ave Widening	Continue the Widening of Herndon Ave to a 4-Lane Divided highway from DeWolf Ave to McCall Ave.		No funding available at this time. COG and the Authority will review funding availability every two years.
GG	SR99 Auxiliary Lanes	Add North and Southbound Auxiliary Lanes to State Route 99 from Fresno Ave to Clinton Ave.		No funding available at this time. COG and the Authority will review funding availability every two years.
HH	Blackstone Ave Turn Lanes	Add dual left turn lanes to the Intersection of Blackstone and Shields Ave.		No funding available at this time. COG and the Authority will review funding availability every

				two years.
II	SR 99 Shields Ave Overcrossing	Construct a new Overcrossing at Shields Ave on State Route 99.		No funding available at this time. COG and the Authority will review funding availability every two years.
JJ	McCall Widening	Widen McCall Ave to a 6-Lane Divided Road from Griffith Ave to Shaw Ave.		Projects under prioritization review with Fresno COG at this time.
KK	Shepherd Ave Widening	Widen Shepherd Ave to a 4-Lane Divided Road from Cedar Ave to State Route 168.		Projects under prioritization review with Fresno COG at this time.
LL	SR 41 Auxiliary Lanes	Add North and Southbound Auxiliary lanes to State Route 41 from McKinley Ave to Shields Ave.		No funding available at this time. COG and the Authority will review funding availability every two years.
MM	SR99 Widening	Widen State route 99 to a 6-Lane Freeway from Ashlan Ave to the Madera County Line.		No funding available at this time. COG and the Authority will review funding availability every two years.
NN	Traffic Management Center	Make upgrades to Caltran's Traffic Management Center.		No funding available at this time. COG and the Authority will review funding availability every two years.
OO	Minnewawa 4-Lane Project	Complete the widening of Minewawa Ave to 4-Lanes from Shepherd Ave to Copper Ave.		No funding available at this time. COG and the Authority will review funding availability every two years.

Tier 2 Rural Projects

ID	Project Name	Project Description	Funding	Progress
AA	SR99 Interchange Improvement	Improve the Central and Chestnut Interchanges on State Route 99.		No funding available at this time. COG and the Authority will review funding availability every two years.
BB	SR 145 Widening	Widen State Route 145 to a 4-Lane Divided Highway from Nielson Ave to South of the City of Kerman.		No funding available at this time. COG and the Authority will review funding availability every two years.
CC	SR 33 Widening	Widen State Route 33 to a 4-Lane Divided Highway at the State Route 180 Intersection.		No funding available at this time. COG and the Authority will review funding availability every two years.
DD	Academy Parkway	Construct a New Diagonal Connector Road south of Mountain View to State Route 99 Kamm/Bethel Interchange.		No funding available at this time. COG and the Authority will review funding availability every two years.
EE	SR 41 Interchange Upgrade	Upgrade the Intersection and Interchanges on State Route 41 at Central and American Avenues.		No funding available at this time. COG and the Authority will review funding availability every two years.
FF	Millerton Road Widening	Widen Millerton Road to a 4-Lane Divided Road from Friant to Sky Harbor.		No funding available at this time. COG and the Authority will review funding availability every two years.
GG	Manning Ave Widening	Widen Manning Ave to a 4-Lane Divided Road from the Reedley City limits to Alta.		No funding available at this time. COG and the Authority will review funding availability every two years.
HH	SR 43 Widening	Widen State Route 43to a 4-Lane Undivided Highway from the City of Selma to the Kings County Line.		No funding available at this time. COG and the Authority will review funding availability every two years.

II	McCall Ave Connection	Complete the 4-Lane Connection on McCall Ave from Shaw Ave to State Route 168.	No funding available at this time. COG and the Authority will review funding availability every two years.
JJ	SR 180 E Seg VI	Convert State Route 180 East to a 2-Lane Expressway on new alignment from Frankwood Ave to Cove.	No funding available at this time. COG and the Authority will review funding availability every two years.

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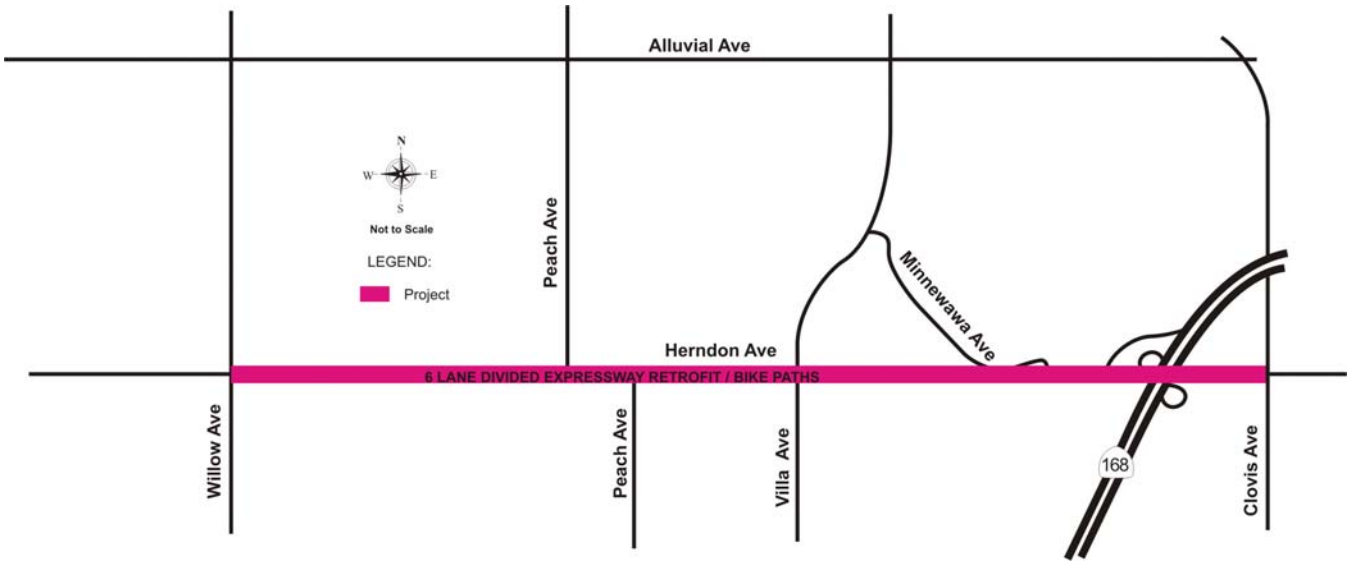
Short-Term Regional Transportation Program

2007-2016

URBAN PROJECT K1
HERNDON AVE.
WILLOW AVE. TO CLOVIS AVE.

Project Improvement:	The Herndon Avenue project has been split into segments K1, K2, K6 and K7. K1 will Widen to 6-Lanes, Install Dual Left Turn Lanes, Traffic Signal, Sidewalks, Median & Curb & Gutter on Herndon Avenue from Willow to Clovis Avenue.		
Project Length:	1.0 Mile		
Project Cost:	$3.27 Million		
Project Schedule:	Design	Beg: 2008	End: 2009
	Right of Way	Beg: 2008	End: 2009
	Construction	Beg: 2008	End: 2009
Project Funding:	Measure C Extension		
	Traffic Congestion Relief Program		
Responsible Agency:	City of Clovis		
Agency Contact:	Steve White	324-2355	

Phase Completed



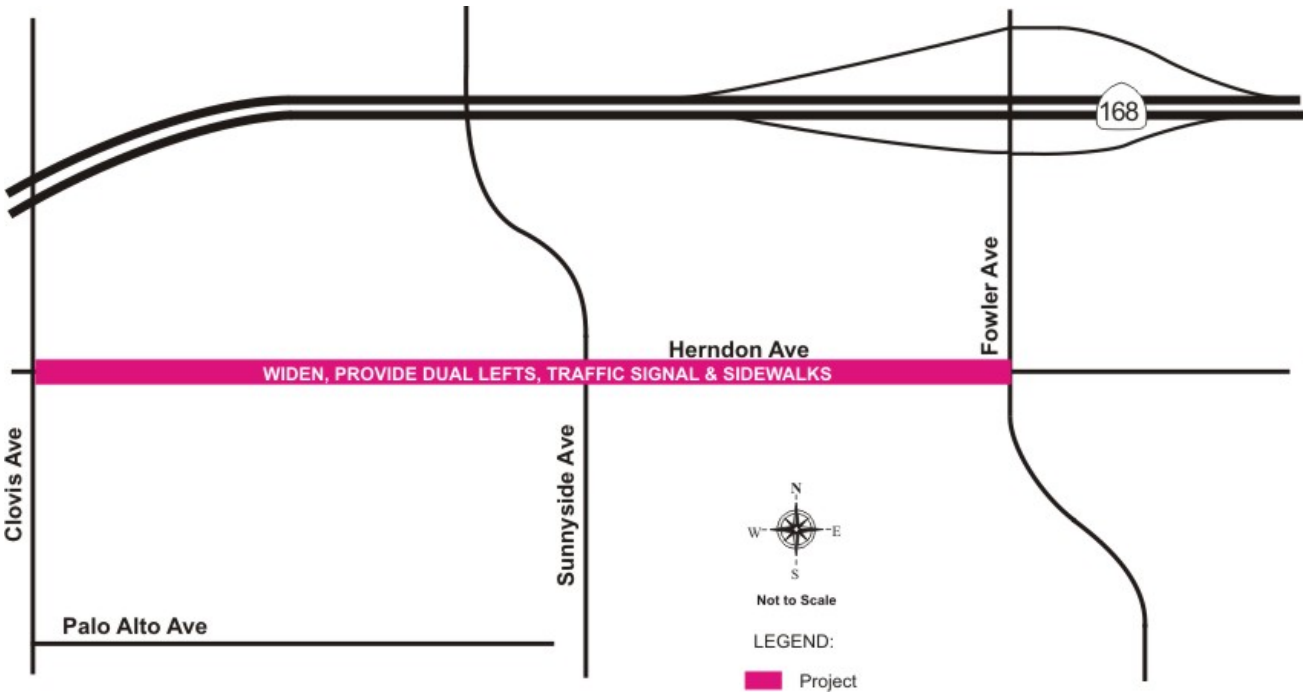
Last Rev 02-18-09

Short-Term Regional Transportation Program

2007-2016

URBAN PROJECT K2
HERNDON AVE.
CLOVIS AVE. TO FOWLER AVE.

Project Improvement:	The Herndon Avenue project has been split into segments K1, K2, K6 and K7. K2 will Widen Herndon Avenue to 6-Lanes, Provide Dual Left Turn Lanes, & Install Traffic Signal & Sidewalks		
Project Length:	0.8 Miles		
Project Cost:	$1.33 Million		
Project Schedule:	Design	Beg: 2009	End: 2010
	Right of Way	Beg: 2009	End: 2010
	Construction	Beg: 2011	End: 2012
Project Funding:	Measure C Extension		
	Local Development Fees		
Responsible Agency:	City of Clovis		
Agency Contact:	Steve White	324-2355	



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Short-Term Regional Transportation Program

2007-2016

URBAN PROJECT K6
HERNDON AVE.
VALENTINE AVE. TO MARKS AVE.

Project Improvement:	The Herndon Avenue project has been split into segments K1, K2, K6 and K7. K6 will Widen Herndon Avenue to 6-Lanes from Valentine Avenue to Marks Avenue.		
Project Length:	0.5 Miles		
Project Cost:	$2.94 Million		
Project Schedule:	Right of Way	Beg: 2008	End: 2009
	Construction	Beg: 2009	End: 2010
Project Funding:	Measure C Extension		
	Federal Aid		
Responsible Agency:	City of Fresno		
Agency Contact:	Scott Mozier	621-8650	

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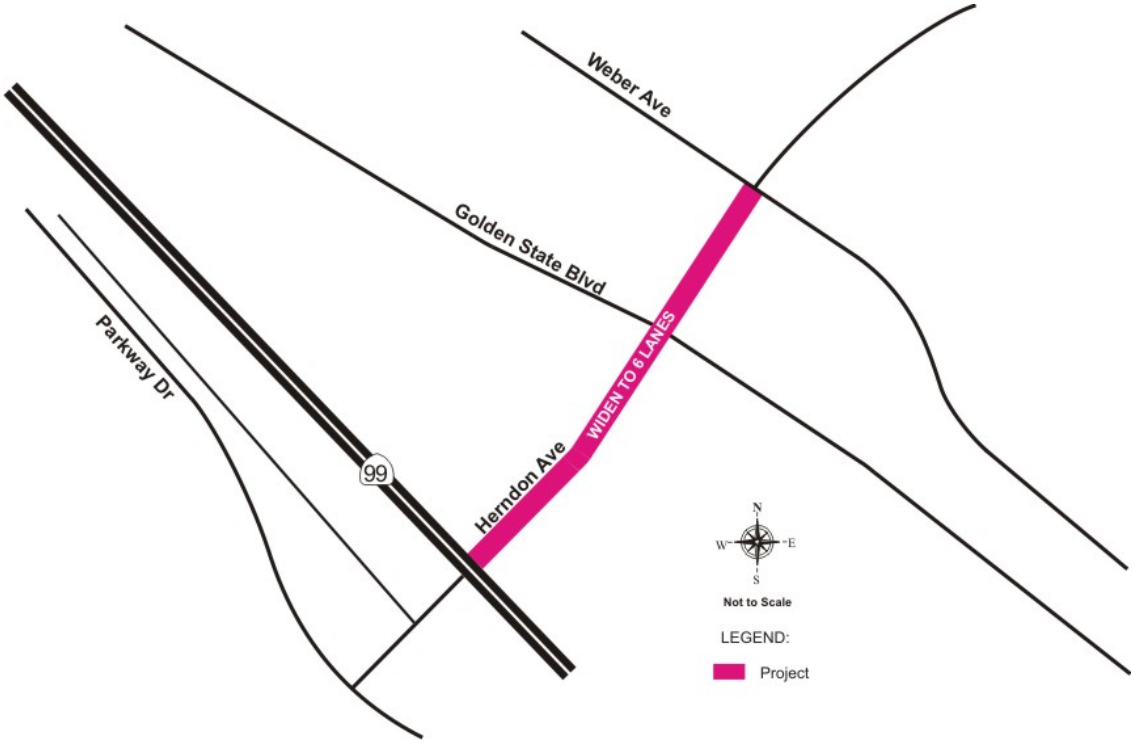
Short-Term Regional Transportation Program

2007-2016

URBAN PROJECT K7
HERNDON AVE.
SR 99 TO WEBER AVE.

Project Improvement:	The Herndon Avenue project has been split into segments K1, K2, K6 and K7. K7 will Widen Herndon Avenue to 6-Lanes and Provide Dual Left Turns at Golden State Boulevard.
Project Length:	0.3 Miles
Project Cost:	$5.52 Million
Project Schedule:	Construction Beg: 2009 End: 2010
Project Funding:	Measure C Extension Federal Aid
Responsible Agency:	City of Fresno
Agency Contact:	Scott Mozier 621-8650



Last Rev 02/18/09

Regional Transportation Program

URBAN PROJECT K8
HERNDON AVE.
SR 99 UNDER-CROSSING

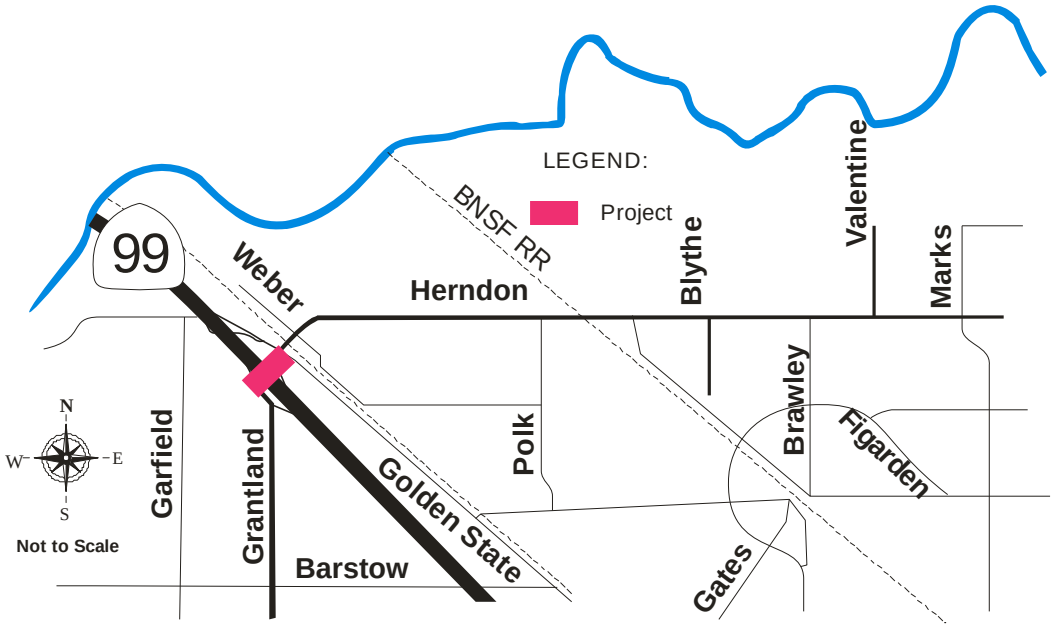
Planned Improvement: Widen Under-crossing to 5 Lanes

Inflated Cost: $26.365 million

Year of Completion: 2027

Priority Number: N/A

Responsible Agency: City of Fresno



Project Schedule/Cost Estimates/Funding Program:

To be determined.

Regional Transportation Program

URBAN PROJECT K9
HERNDON AVE.
UPRR RAILROAD CROSSING

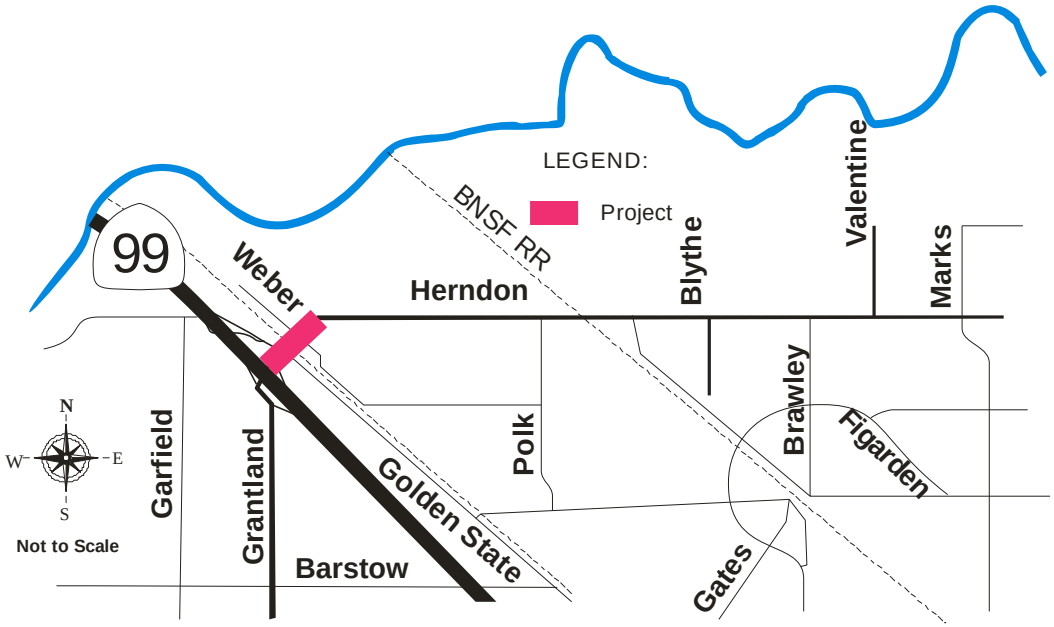
Planned Improvement: Construct 6 Lane Underpass

Inflated Cost: $61.373 million

Year of Completion: 2027

Priority Number: N/A

Responsible Agency: City of Fresno



Project Schedule/Cost Estimates/Funding Program:

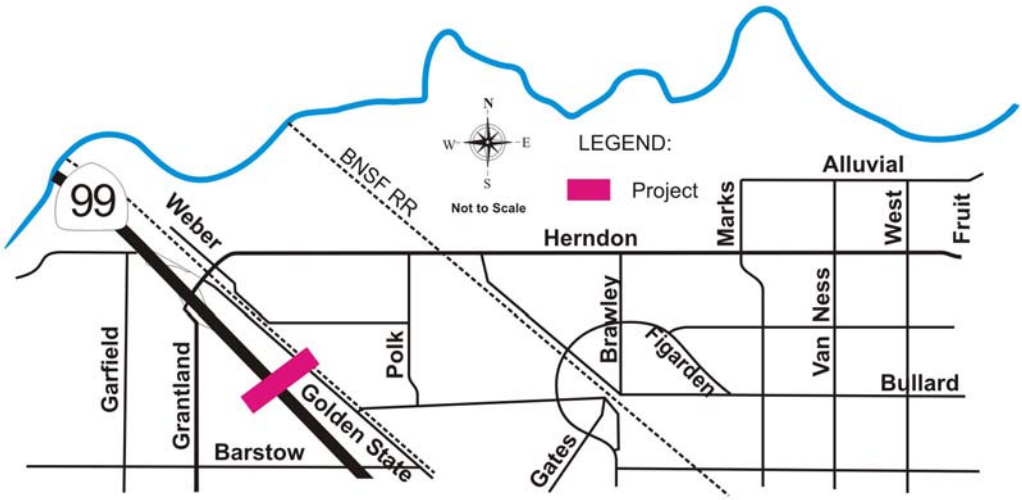
To be determined.

Short-Term Regional Transportation Program

2007-2014

URBAN PROJECT N1
VETERANS BLVD.
SR 99 INTERCHANGE & GRADE SEPARATION

Project Improvement:	Freeway Interchange & Grade Separation at Union Pacific Rail Road & Golden State Blvd. (This project has been split into segments. N1 is for Design Only- Construction to be scheduled in the Mid- & Long-Term Program and funding or scheduling have not been finalized.)
Project Length:	3.5 Miles
Project Cost:	$2.0 Million (Design only)
Project Schedule:	Design: Beg: 2009 End: 2010
Project Funding:	Measure C Extension
	Local Development Fees
Responsible Agency:	City of Fresno
Responsible Agency:	Scott Mozier 621-8650



Appendix L5
Phase 1 Sub-Phasing Analysis, July 2009

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TECHNICAL MEMORANDUM

TO: Chris Shane
John Allen
JoAnn Hadfield, The Planning Center

FROM: Dennis M. Pascua, PTP
Professional Transportation Planner

DATE: July 31, 2009
revised December 8, 2009

SUBJECT: **El Paseo Master Plan Phase 1 Sub-Phasing (1A through 1F) Traffic Analysis**

The following Technical Memorandum presents the results of the traffic analysis for the proposed sub-phases (1A through 1F) of Phase 1 (proposed project) of the El Paseo Master Plan in the northwest area of City of Fresno (City). The proposed project is bounded by Herndon Avenue to the north, Cresta Avenue to the south, Bryan Avenue to the east, and Union Pacific (UP) railroad tracks to the west.

Based on discussions with the project applicant, the City of Fresno, and The Planning Center (EIR consultant), this analysis is based on the most current *El Paseo Master Plan Traffic Impact Study* (TIS) prepared by DKS Associates (DKS) in October 2008. The City's Transportation Manager, Bryan Jones, T.E., PTP, has confirmed the use of the DKS TIS, as well as its analysis and forecasting methodology, and significance criteria, for this sub-phasing analysis. The City has provided Arch Beach Consulting with a hard-copy of the TIS for use in this analysis.

Figure 1 illustrates the project study area, while Figure 2 illustrates the existing intersection and roadway geometrics for the study area. This sub-phase analysis primarily concentrates on the projected 2010 Opening Year of Phase 1. Forecast traffic volumes were taken directly from the DKS TIS and adjusted for this sub-phase traffic analysis.

This traffic analysis will determine the impacts and needed mitigation measures for the sub-phases of Phase 1 as grouped by the following scenarios and conditions (improvements) imposed by the City:

SCENARIO 1 – PHASE 1A (INITIAL PHASE 1 DEVELOPMENT)

Phase 1A (first 200,000 SF)

1. Full frontage improvements on south side of Herndon Avenue (three lanes in eastbound direction), raised median island and landscaping on Herndon Avenue. Maintain two westbound lanes on Herndon Avenue.

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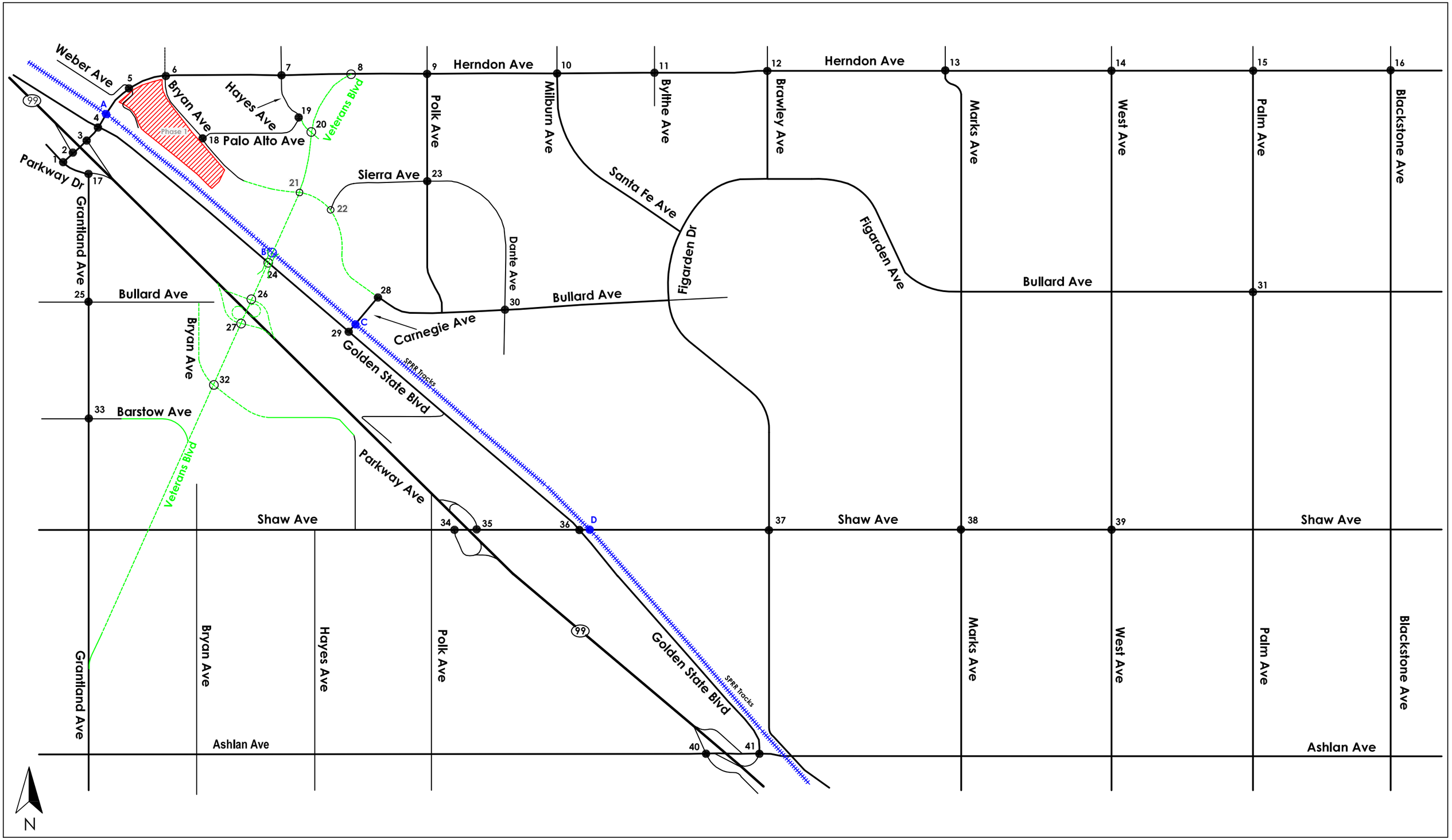

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Figure 1
Project Site Location and Study Area

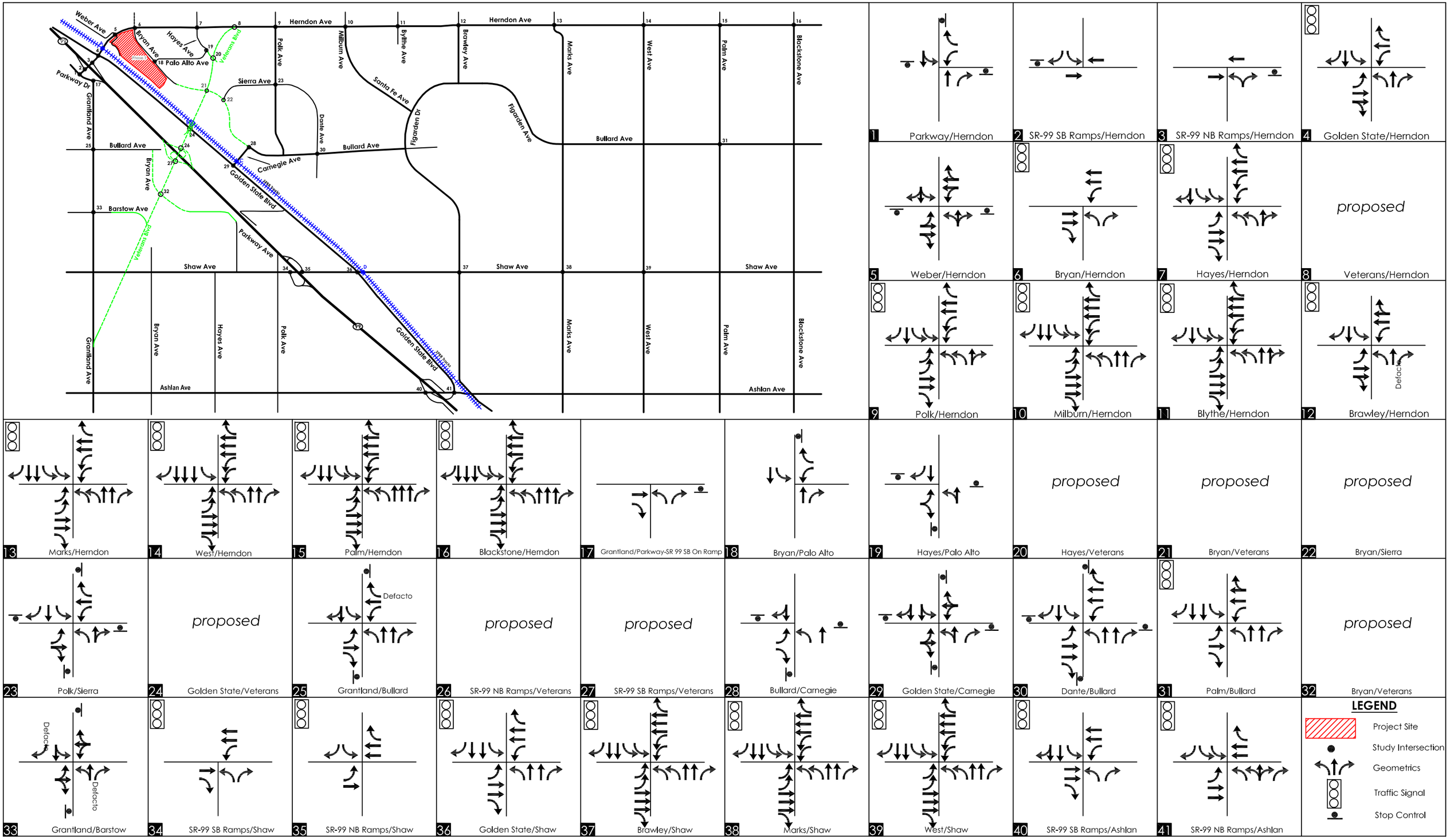

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Figure 2
Existing Intersection Geometrics and Traffic Controls

2. Modify Bryan Avenue/Herndon Avenue traffic signal. Revised lane configurations shall consist of dual left turn lanes and a right turn lane on the northbound approach; a third through lane and dedicated right turn lane on the eastbound approach; and, a dual left turn lane on the westbound approach.
3. Full Bryan Avenue frontage improvements on the west side (two lanes in southbound direction) and median island down to Palo Alto Avenue plus transition paving.
4. Install Bryan Avenue/Anchor A traffic signal (between Herndon Avenue and Palo Alto Avenue). Coordinate traffic signals on Bryan Avenue. The Anchor A driveway shall contain dual eastbound left turn lanes and a separate right turn lane.
5. Construct two northbound lanes with AC dike on east side of Bryan Avenue (two 12 foot travel lanes and one 5 foot shoulder/bike lane).
6. Install SR 99 northbound off-ramp traffic signal at Herndon Avenue and coordinate/synchronize (ITS conduit trunk line already installed on Herndon Avenue) with the existing Golden State Boulevard/Herndon Avenue traffic signal.
7. Widen SR 99 northbound off-ramp at Herndon Avenue and add third lane. Revised approach lane configuration would be a separate left turn lane and two right turn lanes.
8. As required by Caltrans for signal installation, remove the adjacent southbound off-ramp. The Golden State Boulevard/Herndon Avenue intersection is currently being upgraded and will be able to handle the existing fly-over off ramp traffic. Because of the heavy volumes at the interchange, making that southbound left-turn from the southbound (Grantland Avenue) off-ramp can be difficult and cause delays and backups to freeway mainline.
9. Install two residential street traffic circles on Palo Alto Avenue between Hayes Avenue and Bryan Avenue at the major access points to the subdivision on the south side of Palo Alto Avenue. These two calming devices will ensure any project related traffic will drive on Palo Alto Avenue slowly and provide turn around locations for parent/student drop-offs on Palo Alto Avenue. Consideration for bus access needs to be provided.

SCENARIO 2 – PHASES 1B AND 1C (BRYAN AVENUE AND HERNDON AVENUE IMPROVEMENTS PLUS PARKWAY DRIVE SIGNALS)

Phase 1B (up to total of 300,000 SF)

1. Construct third westbound lane on Herndon Avenue from Bryan Avenue to Weber Avenue.
2. Install Parkway Drive traffic signals at Herndon Avenue and Grantland Avenue (SR 99 southbound on-ramp). This would require southbound on-ramp widening for a total of two lanes with ramp metering. Revised lane configurations at Parkway Drive/Herndon Avenue shall consist of dual left turn lanes and a right turn lane on the westbound approach. Revised lane configurations at Parkway Drive/Grantland Avenue shall consist of a left turn lane and right turn lane on the Grantland Avenue approach.
3. Construct (primarily slurry and restripe) Herndon Avenue to have two westbound lanes and one eastbound lane between Parkway Drive and the SR 99 northbound ramps. Between the SR 99 northbound ramps and Golden State Boulevard, Phase 1 will construct two additional through lanes for a total of three eastbound lanes. Based on comments from Caltrans District 6 this would be a feasible improvement resulting in six foot shoulders underneath the mainline structure. This improvement mainly requires slurry and restriping of the roadway with minor roadway work on either end of the structure.

Phase 1C (up to total of 400,000 SF)

1. Construct full improvements on Bryan Avenue to the southern boundary line of Phase 1C. Construct transition paving to the south.
2. Install traffic signal at Bryan Avenue/Palo Alto Avenue to facilitate access between school and shopping center and residential. Install diverters (pork chops) on the eastbound and westbound approaches on Palo Alto Avenue and shopping center driveway to prohibit east- and westbound through traffic. Coordinate traffic signals on Bryan Avenue.

SCENARIO 3 – PHASES 1D AND 1E (BRYAN AVENUE TO BULLARD AVENUE EXTENSION)

Phase 1D (up to total of 500,000 SF)

1. Construct full improvements to Bryan Avenue to the southern boundary line of Phase 1D. Construct transition paving to the south.
2. Construct the extension of Bryan Avenue to Bullard Avenue/Carnegie Avenue as a two-lane roadway. This could be on one-side of the median since Bryan Avenue will be a four lane divided roadway. This eliminates the need to construct the median island.

Phase 1E (up to total of 600,000 SF)

1. Construct full improvements to Bryan Avenue to the southern boundary line of Phase 1E. Construct transition paving to the south.
2. Restripe the eastbound direction of Herndon Avenue to three lanes between Bryan Avenue and Hayes Avenue.

SCENARIO 4 – PHASE 1F

Phase 1F (remaining 306,788 SF)

Construct the following remaining Conditions of Approval (improvements) that are left for Phase 1 as provided in the October 2008 DKS TIS for Phase 1. According to the City, all the improvements need to be in-place to facilitate the first 700,000 square feet of Phase 1. The following are the remaining Conditions:

1. Construct full improvements to Bryan Avenue to the southern boundary line of Phase 1F. Construct transition paving to the south.
2. Widen the westbound direction of Herndon Avenue to three lanes between Bryan Avenue and Hayes Avenue.

TRAFFIC ANALYSIS

TRIP GENERATION

Table A presents the trip generation estimates for each sub-phase of Phase 1. Since the trip generation estimates for the proposed shopping center were based on logarithmic equations contained in *Trip Generation, 7th Edition*, published by the Institute of Transportation Engineers (ITE, 2003), the total net trip generation of Phase 1 was proportionally broken-down based on the square footage of each sub-phase (1A through 1F).

TRIP DISTRIBUTION AND ASSIGNMENT

Figures 3 through 6 illustrate the trip distribution and assignment for sub-phases 1A through 1F, respectively. The trip distribution patterns were based on the methodology in the October 2008 DKS TIS.

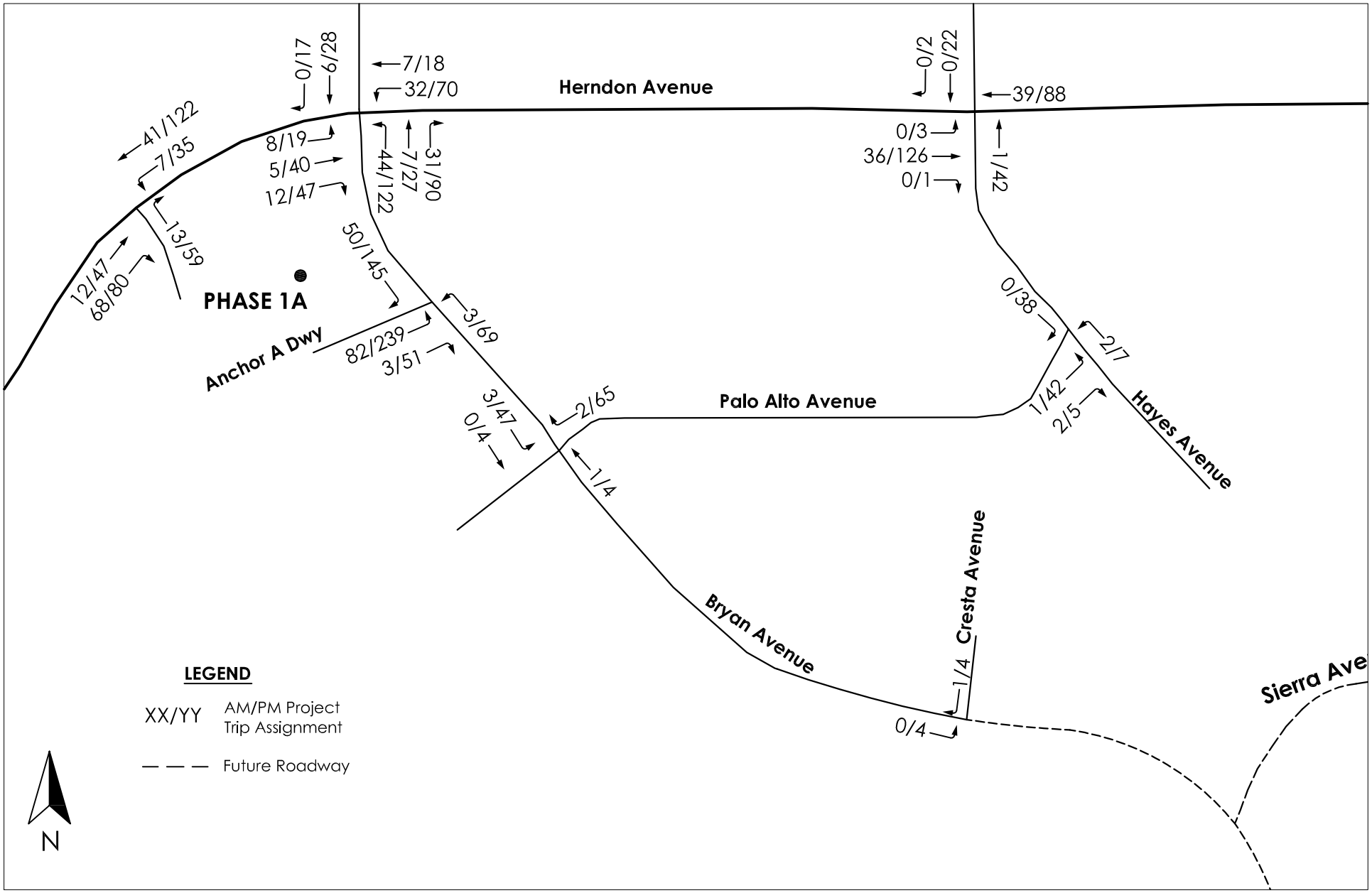

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Figure 3
Scenario 1 (Phase 1A)
Trip Assignment at Adjacent Intersections

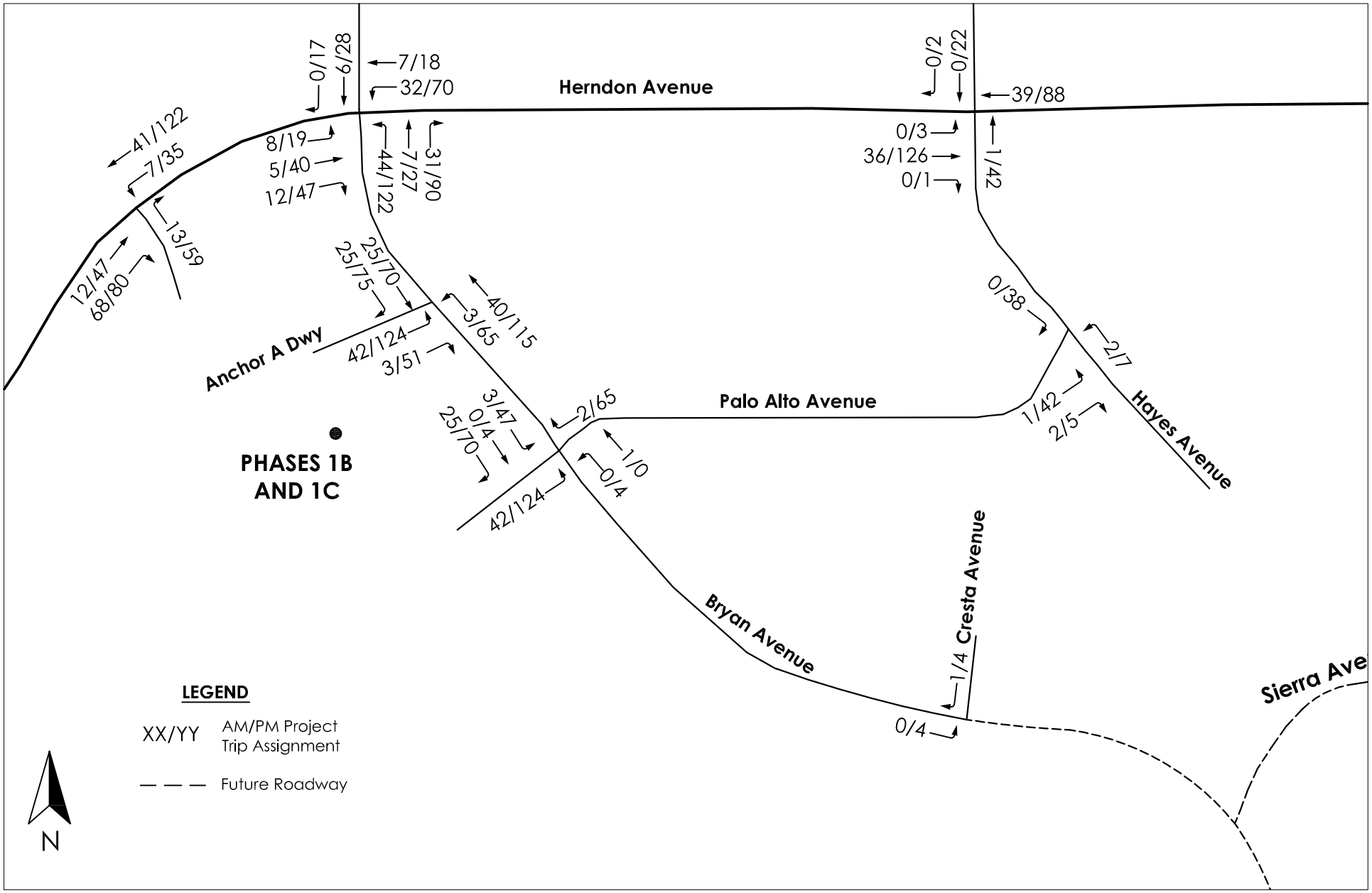

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Figure 4
Scenario 2 (Phases 1B and 1C) Trip Assignment at Adjacent Intersections

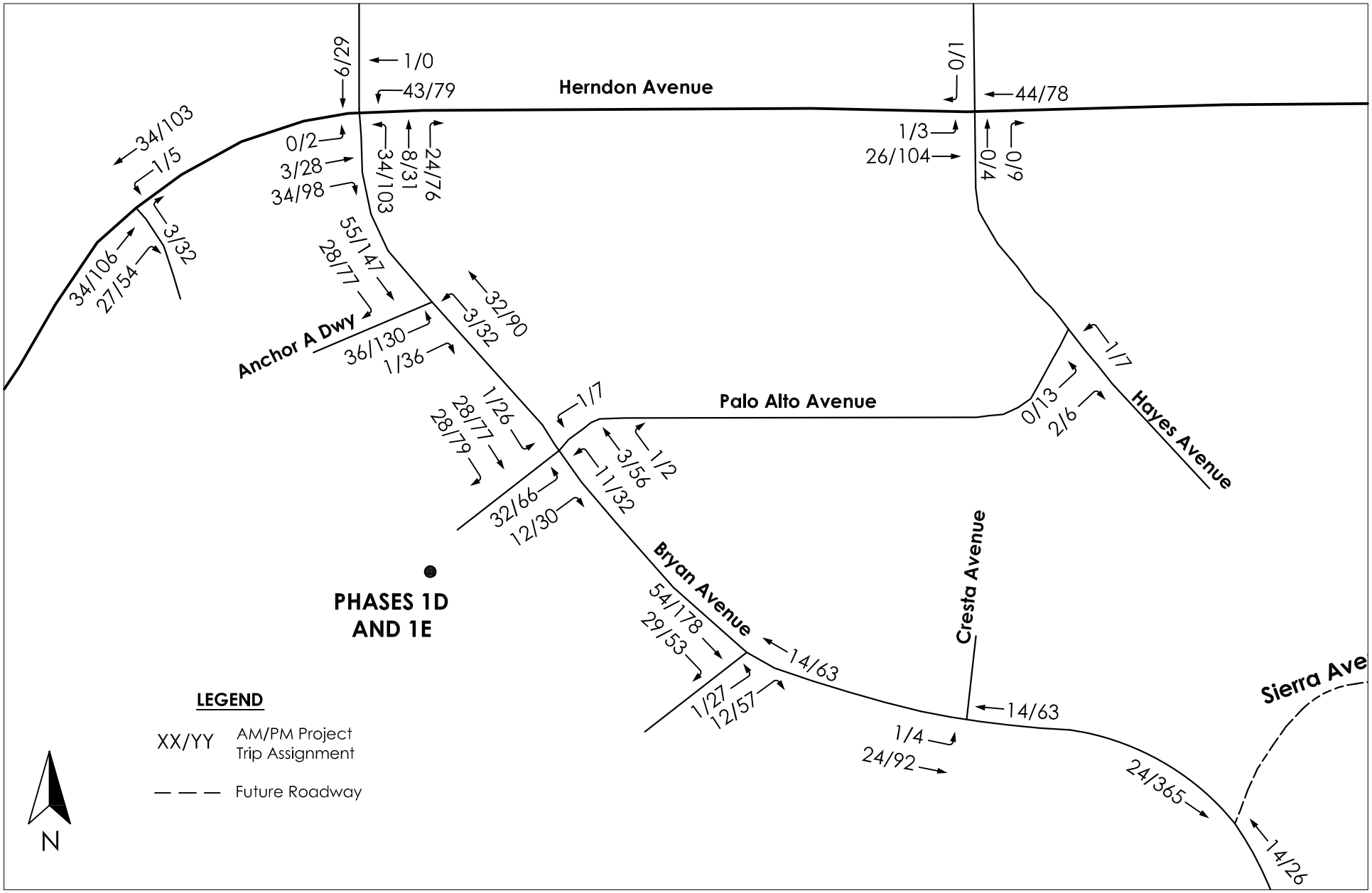

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Figure 5
Scenario 3 (Phases 1D and 1E) Trip Assignment
at Adjacent Intersections

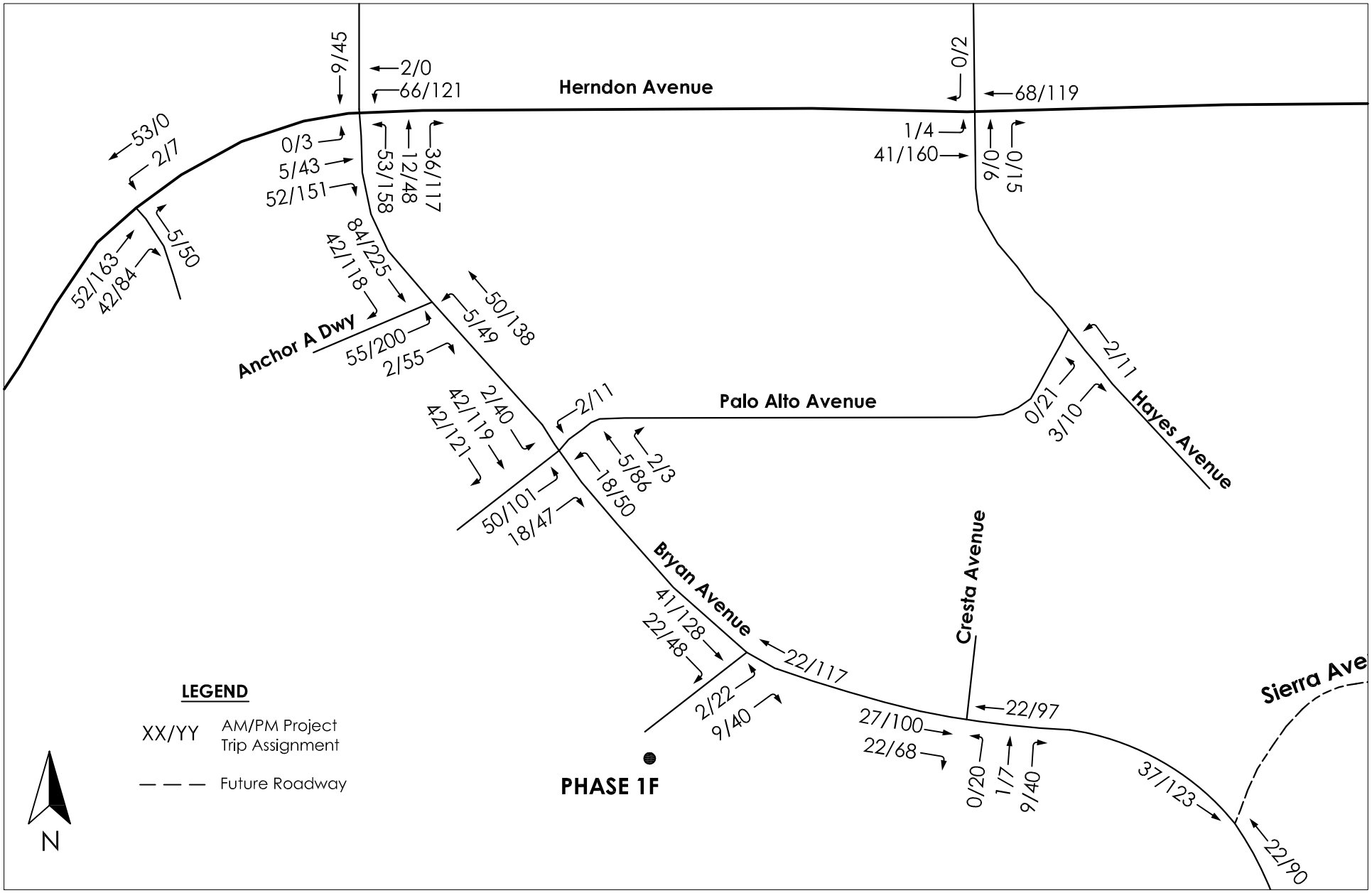

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Figure 6
Scenario 4 (Phase 1F) Trip Assignment
at Adjacent Intersections

Table A – Phase 1 Trip Generation Estimates per Sub-Phase

Land Use	%	Size	Daily	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
TRIP RATES									
Shopping Center		per TSF	*ITE*	*ITE equation*			*ITE equation*		
Free-Standing Discount Superstore		per TSF	49.21	0.94	0.90	1.84	1.90	1.97	3.87
Home Improvement Superstore		per TSF	29.80	0.65	0.55	1.20	1.15	1.30	2.45
Free-Standing Discount Store		per TSF	56.02	0.57	0.27	0.84	2.53	2.53	5.06
TRIP GENERATION									
Shopping Center		438.939 TSF	17,762	232	148	380	798	864	1,662
- pass-by trip s (15%)			--	--	--	--	-120	-130	-249
Anchor 1 (Discount Superstore)		186.000 TSF	9,153	175	167	342	353	366	720
Anchor 2 (Discount Store)		98.844 TSF	5,537	56	27	83	250	250	500
Anchor 3 (Home Improvement Superstore)		183.005 TSF	5,454	119	101	220	210	238	448
Net Trip Generation Phase 1		**906.788 TSF**	**37,906**	**582**	**443**	**1,025**	**1,492**	**1,589**	**3,081**
SUB-PHASE TRIP GENERATION									
- Phase 1A	22.1%	200.000 TSF	8,361	128	98	226	329	350	680
- Phase 1B	11.0%	100.000 TSF	4,180	64	49	113	165	175	340
- Phase 1C	11.0%	100.000 TSF	4,180	64	49	113	165	175	340
- Phase 1D	11.0%	100.000 TSF	4,180	64	49	113	165	175	340
- Phase 1E	11.0%	100.000 TSF	4,180	64	49	113	165	175	340
- Phase 1F	33.8%	306.788 TSF	12,825	197	150	347	505	538	1,042
Net Trip Generation Phase 1	**100%**	**906.788 TSF**	**37,906**	**582**	**443**	**1,025**	**1,492**	**1,589**	**3,081**

Note: Trip rates and equations based on *Trip Generation, 7th Edition*, ITE, 2003.

SCENARIO 1 – PHASE 1A (INITIAL PHASE 1 DEVELOPMENT)

Intersection Levels of Service

Table B presents the results of the intersection level of service (LOS) analysis for Phase 1A. According to the table and based on the City's significance criteria, the following study intersections would be significantly impacted by the addition of Phase 1A traffic to 2010 baseline traffic. Therefore, Phase 1A would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or greater at LOS E and F) at the following study intersections:

- Parkway Drive/Herndon Avenue (additional delay ≥5 seconds to LOS F in a.m. and p.m.)
- Bryan Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS E in a.m.)
- Bryan Avenue/(future) Anchor A Driveway (LOS F in both peak hours)
- SR 99 northbound off-ramp/Herndon Avenue (additional delay ≥5 seconds to LOS F in a.m. and p.m.)
- Grantland Avenue/Parkway Drive (additional delay ≥5 seconds to LOS F in a.m. and p.m.)
- Grantland Avenue/Bullard Avenue (LOS D to E in a.m.)
- Golden State Boulevard/Carnegie Avenue (additional delay ≥5 seconds to LOS F in a.m.)

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Table B - 2010 plus Phase 1A (Scenario 1)

		2010 Baseline				2010 + Project Scenario 1			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	unsignalized	**>50**	**F**	**>50**	**F**	**>50**	**F**	**>50**	**F**
2 99 SB Ramps/Herndon	unsignalized	**>50**	**F**	**>50**	**F**	--	--	--	--
3 99 NB Ramps/Herndor	signal	**>50**	**F**	**>50**	**F**	51.7	D	48.8	D
4 Golden State/Herndo	signal	26.9	C	28.5	C	28.5	C	52.6	D
5 Weber/Herndon	unsignalized	**>50**	**F**	**>50**	**F**	15.9	C	26.2	D
6 Bryan/Herndon	signal	**62.4**	**E**	42.9	D	**68.5**	**E**	51.1	D
7 Hayes/Herndon	signal	23.0	C	26.3	C	25.0	C	28.6	C
8 Veterans/Herndon	--	--	--	--	--	--	--	--	--
9 Polk/Herndon	signal	22.9	C	29.2	C	27.2	C	38.9	D
10 Milburn/Herndon	signal	27.4	C	41.9	D	36.2	D	41.1	D
11 Blythe/Herndon	signal	18.0	B	21.3	C	11.4	B	11.9	B
12 Brawley/Herndon	signal	**>80**	**F**	**>80**	**F**	**72.3**	**E**	**>80**	**F**
13 Marks/Herndon	signal	**60.0**	**E**	**67.6**	**E**	**73.7**	**E**	**71.7**	**E**
14 West/Herndon	signal	**69.7**	**E**	**>80**	**F**	**67.6**	**E**	**64.4**	**E**
15 Palm/Herndon	signal	52.4	D	**>80**	**F**	48.7	D	**>80**	**F**
16 Blackstone/Herndon	signal	28.1	C	37.1	D	28.9	C	39.6	D
17 Grantland/Parkway	unsignalized	**>50**	**F**	**11.7**	**F**	**>50**	**F**	**>50**	**F**
18 Bryan/Palo Alto	unsignalized	11.2	B	8.7	A	11.2	B	12.0	B
19 Hayes/Palo Alto	unsignalized	12.3	B	7.9	A	12.4	B	8.4	A
20 Veterans/Hayes	--	--	--	--	--	--	--	--	--
21 Veterans/Bryan	--	--	--	--	--	--	--	--	--
22 Bryan/Sierra	--	--	--	--	--	--	--	--	--
23 Polk/Sierra	unsignalized	12.6	B	13.9	B	12.1	B	14.4	B
24 Golden State/Veteran	--	--	--	--	--	--	--	--	--
25 Grantland/Bullard	unsignalized	29.6	D	23.7	C	**37.0**	**E**	26.7	D
26 99 NB Ramps/Veteran	--	--	--	--	--	--	--	--	--
27 99 SB Ramps/Veterans	--	--	--	--	--	--	--	--	--
28 Carnegie/Bullard	unsignalized	**41.6**	**E**	**>50**	**F**	**45.1**	**E**	**>50**	**F**
29 Golden State/Carneg	unsignalized	**>50**	**F**	**>50**	**F**	**>50**	**F**	**>50**	**F**
30 Dante/Bullard	unsignalized	12.1	B	12.6	B	12.1	B	12.7	B
31 Palm/Bullard	signal	42.3	D	**62.8**	**E**	42.3	D	**62.8**	**E**
32 Veterans/Bryan	--	--	--	--	--	--	--	--	--
33 Grantland/Barstow	unsignalized	19.5	C	19.6	C	24.3	C	23.0	C
34 99 SB Ramps/Shaw	signal	**66.0**	**E**	38.5	D	**67.1**	**E**	39.1	D
35 99 NB Ramps/Shaw	signal	19.2	B	25.7	C	19.0	B	26.1	C
36 Golden State/Shaw	signal	51.0	D	**>80**	**F**	53.1	D	**>80**	**F**
37 Brawley/Shaw	signal	23.9	C	53.3	D	24.1	C	50.6	D
38 Marks/Shaw	signal	30.7	C	48.2	D	30.7	C	48.3	D
39 West/Shaw	signal	26.4	C	31.8	C	26.5	C	32.7	C
40 99 SB Ramps/Ashlan	signal	25.7	C	24.2	C	25.1	C	24.3	C
41 99 NB Ramps/Ashlan	signal	35.6	D	**>80**	**F**	35.6	D	**>80**	**F**

Notes:

XXX Denotes delay that exceeds thresholds

Roadway Level of Service Analysis

Table C presents the results of the 2010 plus Phase 1A roadway level of service analysis for the a.m. and p.m. peak hours. Per the City's General Plan Transportation Policy B-3:

> *Further substantial degradation is defined as an increase in the peak hour vehicle/capacity (v/c) ratio of 0.15 or greater for roadway segments whose v/c ratio is estimated to be 1.00 or higher (in 2025 by the General Plan EIR traffic analysis).*

According to the table, the addition of the Phases 1B and 1C trips to the study area roadway segments would create significant impacts at the following intersections as impacted (LOS E or F) roadway segment V/C ratios would be increased by 0.15 V/C or higher.

- Herndon Avenue, Weber Avenue to Bryan Avenue
- Bryan Avenue, Herndon Avenue to Phase 1A southern boundary
- Palo Alto Avenue, Bryan Avenue to Hayes Avenue

SCENARIO 2 – PHASES 1B AND 1C (BRYAN AVENUE AND HERNDON AVENUE IMPROVEMENTS PLUS PARKWAY DRIVE SIGNALS)

Intersection Levels of Service

Table D presents the results of the intersection level of service (LOS) analysis for Phases 1B and 1C. According to the table and based on the City's significance criteria, the following study intersections would be significantly impacted by the addition of Phases 1B and 1C traffic to 2010 baseline traffic (which includes Phase 1A traffic and conditioned improvements). Therefore, Phases 1B and 1C would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or greater at LOS E and F) at the following study intersections:

- Bryan Avenue/Palo Alto Avenue (LOS B to LOS F in a.m. and p.m.)
- Hayes Avenue/Herndon Avenue (LOS C to E in p.m.)
- Polk Avenue/Herndon Avenue (LOS D to F in p.m.)
- Milburn Avenue/Herndon Avenue (LOS D to F in p.m.)
- West Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS E and F in a.m. and p.m., respectively)
- Palm Avenue/Herndon Avenue (additional delay ≥5 seconds to LOS F in p.m.)

Roadway Level of Service Analysis

Table E presents the results of the 2010 plus Phases 1B and 1C roadway level of service analysis for the a.m. and p.m. peak hours. According to the table, the addition of the Phases 1B and 1C trips to the study area roadway segments would create significant impacts at the following intersections as impacted (LOS E or F) roadway segment V/C ratios would be increased by 0.15 V/C or higher.

- Bryan Avenue
  - Phase 1A boundary to Phase 1C boundary
- Herndon Avenue
  - Parkway Drive to SR 99 southbound ramps: WB p.m. peak hour, 0.25 V/C increase at LOS F
  - SR 99 northbound ramps to Golden State Boulevard: EB p.m. peak hour, 0.26 V/C increase at LOS F; WB p.m. peak hour, 0.25 V/C increase at LOS F

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Table C - 2010 plus Phase 1A (Scenario 1)

		2010 plus Phase 1											
		AM Peak Hour						PM Peak Hour					
Roadway Segment	No. of Lanes	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]
Herndon Avenue													
Parkway to SR 99 SB Ramps	1	600	D		**1,356**	**F**	**0.04**	543	C		**1,366**	**F**	**0.13**
SR 99 SB Ramps to SR 99 NB Ramps	1	626	D		**1,321**	**F**		594	D		**1,299**	**F**	
SR 99 NB Ramps to Golden State	1	**1,315**	**F**	**0.07**	**1,285**	**F**	**0.04**	**1,547**	**F**	**0.13**	**1,214**	**F**	**0.13**
Golden State to Weber	2	1,493	D	0.04	**1,757**	**E**	**0.02**	**1,991**	**F**	**0.08**	1,583	D	0.08
Weber to Bryan	3-2	1,586	C	0.01	**1,765**	**E**	**-0.11**	2,041	C	**0.06**	1,591	D	-0.07
Bryan to Hayes	2	1,360	C		1,674	D	0.02	**1,864**	**F**	**0.07**	1,589	D	0.05
Hayes to Veterans	2	1,264	C		1,436	D		1,575	D	0.07	1,464	D	0.06
Veterans to Polk	2	1,264	C		1,436	D		1,575	D	0.07	1,470	D	0.06
Polk to Milburn	2	**1,643**	**D**	**0.02**	1,459	D		**1,883**	**F**	**0.07**	**1,869**	**F**	**0.05**
Milburn to Blythe	3	1,858	C		1,372	C		1,879	C		1,986	C	
Blythe to Brawley	2	1,933	C		1,429	C		1,973	C		2,119	D	
Brawley to Marks	2	**2,407**	**F**	**0.01**	1,663	D	0.02	**2,168**	**F**	**0.04**	**2,594**	**F**	**0.03**
Marks to West	3	**2,876**	**F**	**0.01**	2,058	C		2,377	D	0.02	**3,052**	**F**	**0.02**
West to Palm	3	**3,213**	**F**	**0.01**	2,383	D		**2,775**	**F**	**0.02**	**3,359**	**F**	**0.01**
Palm to Blackstone	3	2,552	D	0.00	1,952	C		2,380	D		**2,627**	**E**	**0.01**
e/o Blackstone	3	2,305	D		1,945	C		2,150	D		2,020	C	
Parkway Drive													
Herndon and Grantland	1	555	D		**1,219**	**F**	**0.04**	490	D		**1,234**	**F**	**0.13**
Bryan Avenue													
Herndon to Palo Alto	2	540	C		417	C		341	C		275	C	
Palo Alto to Veterans	1	52	C		13	C		15	C		47	C	
Veterans to Sierra	--	--	--		--	--		--	--		--	--	
Sierra and Carnegie	1	223	C		188	C		130	C		52	C	
Carnegie to Dante	2	664	C		253	C		403	C		762	C	
Palo Alto Avenue													
Bryan to Hayes	1	334	C		401	C		114	C		162	C	
Hayes Avenue													
Herndon to Palo Alto	1	201	C		300	C		134	C		150	C	
Palo Alto to Veterans	1	229	C		155	C		79	C		109	C	
Veterans Avenue													
Hayes to Herndon	--	--	--		--	--		--	--		--	--	
Bryan to Hayes	--	--	--		--	--		--	--		--	--	
Golden State to Bryan	--	--	--		--	--		--	--		--	--	
SR 99 NB Ramps to GS	--	--	--		--	--		--	--		--	--	
SR 99 SB Ramps to SR 99 NB Ramps	--	--	--		--	--		--	--		--	--	
Bryan(2) to SR 99 SB Ramps	--	--	--		--	--		--	--		--	--	
Sierra Avenue													
Bryan to Polk	1	228	C		178	C		98	C		160	C	
Polk Avenue													
Herndon to Sierra	1	478	C		280	C		514	D		470	C	
Golden State Boulevard													
Herndon to Veterans	1	348	C		**798**	**E**	**0.00**	456	C		728	D	0.01
Veterans to Carnegie	1	316	C		267	C		329	C		361	C	
Carnegie to Shaw	1	500	D		626	D		**919**	**F**	**0.02**	532	D	
Shaw to Ashlan	1	**844**	**F**	**0.00**	580	D		**1,530**	**F**	**0.01**	611	D	
Shaw Avenue													
w/o SR 99 SB Ramps	1	**1,385**	**F**	**0.00**	**913**	**F**	**0.00**	**1,087**	**F**	**0.00**	**1,597**	**F**	**0.01**
SR 99 SB Ramps to SR 99 NB Ramps	1-2	**1,165**	**F**		1,417	D		**1,151**	**F**		**1,999**	**F**	
SR 99 NB Ramps to Golden State	2	1,178	D		1,418	D		1,412	D		**2,010**	**F**	**0.00**
Golden State to Brawley	3	1,747	D		1,661	C		2,415	D		**2,462**	**E**	**0.00**
Brawley to Marks	3	1,780	D		1,529	C		2,292	D		2,370	D	
Marks to West	3	2,095	D		1,424	C		1,881	D		1,994	D	
e/o West	3	1,993	D		1,288	C		1,680	C		1,954	D	
Grantland Avenue													
Parkway to Bullard	1	738	D	0.02	376	C		552	D		614	D	0.05
Bullard to Barstow	1	475	C		427	C		365	C		503	D	
Palm Avenue													
Herndon to Bullard	2	1,174	D		1,212	D		1,239	D		1,107	C	
Dante Avenue													
Polk to Bullard	1	188	C		178	C		174	C		169	C	
Carnegie Avenue													
Golden State to Bullard	1	312	C		700	D		**854**	**F**	**0.00**	417	C	
Ashlan Avenue													
SR 99 SB Ramps to SR 99 NB Ramps	2	**2,035**	**F**		1,009	C		**1,701**	**E**		**1,886**	**F**	

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* , for State Two-Way Arterials (Class II) & Non-State Roadways.

[2] V/C based on LOS F capacities in the Florida Tables

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact (v/c ≥ 0.15 per the City of Fresno General Plan Transportation Policy B-3)

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Table D - 2010 plus Phases 1B and 1C (Scenario 2)

		2010 + Project Scenario 1				2010 + Project Scenario 2			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	unsignalized	**>50**	**F**	**>50**	**F**	31.6	C	31.2	C
2 99 SB Ramps/Herndon	--	--	--	--	--	--	--	--	--
3 99 NB Ramps/Herndon	signal	51.7	D	48.8	D	35.9	D	**>80**	**F**
4 Golden State/Herndon	signal	28.5	C	52.6	D	33.0	C	**71.9**	**E**
5 Weber/Herndon	unsignalized	15.9	C	26.2	D	12.5	B	19.0	C
6 Bryan/Herndon	signal	**68.5**	**E**	51.1	D	39.3	D	37.7	D
7 Hayes/Herndon	signal	25.0	C	28.6	C	44.0	D	**57.8**	**E**
8 Veterans/Herndon	--	--	--	--	--	--	--	--	--
9 Polk/Herndon	signal	27.2	C	38.9	D	25.7	C	**>80**	**F**
10 Milburn/Herndon	signal	36.2	D	41.1	D	29.8	C	**>80**	**F**
11 Blythe/Herndon	signal	11.4	B	11.9	B	5.9	A	8.1	A
12 Brawley/Herndon	signal	**72.3**	**E**	**>80**	**F**	48.4	D	**>80**	**F**
13 Marks/Herndon	signal	**73.7**	**E**	**71.7**	**E**	**69.5**	**E**	**75.5**	**E**
14 West/Herndon	signal	**67.6**	**E**	**64.4**	**E**	**74.8**	**E**	**>80**	**F**
15 Palm/Herndon	signal	48.7	D	**>80**	**F**	54.1	D	**>80**	**F**
16 Blackstone/Herndon	signal	28.9	C	39.6	D	28.3	C	47.0	D
17 Grantland/Parkway	unsignalized	**>50**	**F**	**>50**	**F**	11.7	B	30.1	C
18 Bryan/Palo Alto	signal	11.2	B	12.0	B	15.5	B	12.9	B
19 Hayes/Palo Alto	unsignalized	12.4	B	8.4	A	12.5	B	9.0	A
20 Veterans/Hayes	--	--	--	--	--	--	--	--	--
21 Veterans/Bryan	--	--	--	--	--	--	--	--	--
22 Bryan/Sierra	--	--	--	--	--	--	--	--	--
23 Polk/Sierra	unsignalized	12.1	B	14.4	B	12.7	B	14.9	B
24 Golden State/Veteran	--	--	--	--	--	--	--	--	--
25 Grantland/Bullard	unsignalized	**37.0**	**E**	26.7	D	**41.0**	**E**	33.1	D
26 99 NB Ramps/Veteran	--	--	--	--	--	--	--	--	--
27 99 SB Ramps/Veterans	--	--	--	--	--	--	--	--	--
28 Carnegie/Bullard	unsignalized	**45.1**	**E**	**>50**	**F**	**43.1**	**E**	**>80**	**F**
29 Golden State/Carneg	unsignalized	**>50**	**F**	**>50**	**F**	**77.6**	**E**	**75.2**	**F**
30 Dante/Bullard	unsignalized	12.1	B	12.7	B	12.1	B	12.7	B
31 Palm/Bullard	signal	42.3	D	**62.8**	**E**	42.3	D	**>80**	**F**
32 Veterans/Bryan	--	--	--	--	--	--	--	--	--
33 Grantland/Barstow	unsignalized	24.3	C	23.0	C	21.4	C	27.4	C
34 99 SB Ramps/Shaw	signal	**67.1**	**E**	39.1	D	**66.4**	**E**	39.5	D
35 99 NB Ramps/Shaw	signal	19.0	B	26.1	C	17.8	B	27.6	C
36 Golden State/Shaw	signal	53.1	D	**>80**	**F**	51.9	D	**>80**	**F**
37 Brawley/Shaw	signal	24.1	C	50.6	D	24.0	C	**>80**	**F**
38 Marks/Shaw	signal	30.7	C	48.3	D	29.6	C	**>80**	**F**
39 West/Shaw	signal	26.5	C	32.7	C	25.7	C	42.4	D
40 99 SB Ramps/Ashlan	signal	25.1	C	24.3	C	25.9	C	**66.5**	**E**
41 99 NB Ramps/Ashlan	signal	35.6	D	**>80**	**F**	35.0	C	**>80**	**F**

Notes:

XXX Denotes delay that exceeds thresholds

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Table E - 2010 plus Phases 1B and 1C (Scenario 2)

		2010 plus Phase 1											
		AM Peak Hour						PM Peak Hour					
Roadway Segment	No. of Lanes	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]
Herndon Avenue													
Parkway to SR 99 SB Ramps	1	615	D		**1,388**	**F**	**0.08**	590	C		**1,473**	**F**	**0.25**
SR 99 SB Ramps to SR 99 NB Ramps	1	642	D		**1,353**	**F**		642	D		**1,406**	**F**	
SR 99 NB Ramps to Golden State	1	**1,370**	**F**	**0.13**	**1,317**	**F**	**0.08**	**1,657**	**F**	**0.26**	**1,321**	**F**	**0.25**
Golden State to Weber	2	1,560	D	0.08	**1,798**	**E**	**0.05**	**2,139**	**F**	**0.16**	**1,722**	**E**	**0.15**
Weber to Bryan	3	1,611	C	0.03	1,806	C	-0.09	1,935	C	0.00	1,756	C	0.02
Bryan to Hayes	2	1,396	D		**1,713**	**E**	**0.04**	**1,914**	**F**	**0.10**	1,677	D	0.10
Hayes to Veterans	2	1,304	C		1,485	D		1,702	D	0.14	1,572	D	0.12
Veterans to Polk	2	1,305	C		1,485	D		1,702	D	0.14	1,579	D	0.12
Polk to Milburn	2	1,677	D	0.04	1,504	D		**2,003**	**F**	**0.13**	**1,961**	**F**	**0.10**
Milburn to Blythe	3	1,888	C		1,413	C		1,985	C		2,068	C	
Blythe to Brawley	2	1,962	C		1,470	C		2,078	C		2,200	D	
Brawley to Marks	2	**2,427**	**F**	**0.02**	1,696	D	0.04	**2,243**	**F**	**0.08**	**2,654**	**F**	**0.07**
Marks to West	3	**2,893**	**F**	**0.01**	2,087	C		2,440	D	0.05	**3,097**	**F**	**0.03**
West to Palm	3	**3,227**	**F**	**0.01**	2,410	D		**2,835**	**F**	**0.04**	**3,397**	**F**	**0.03**
Palm to Blackstone	3	2,563	D	0.01	1,972	C		2,419	D		**2,657**	**E**	**0.02**
e/o Blackstone	3	2,314	D		1,960	C		2,182	D		2,038	C	
Parkway Drive													
Herndon and Grantland	1	570	D		**1,250**	**F**	**0.08**	537	D		**1,338**	**F**	**0.26**
Bryan Avenue													
Herndon to Palo Alto	2	622	C		467	C		580	C		326	C	
Palo Alto to Veterans	1	53	C		13	C		19	C		33	C	
Veterans to Sierra	--	--	--		--	--		--	--		--	--	
Sierra and Carnegie	1	223	C		188	C		130	C		52	C	
Carnegie to Dante	2	667	C		253	C		409	C		763	C	
Palo Alto Avenue													
Bryan to Hayes	1	337	C		403	C		161	C		209	C	
Hayes Avenue													
Herndon to Palo Alto	1	202	C		300	C		176	C		173	C	
Palo Alto to Veterans	1	231	C		157	C		86	C		114	C	
Veterans Avenue													
Hayes to Herndon	--	--	--		--	--		--	--		--	--	
Bryan to Hayes	--	--	--		--	--		--	--		--	--	
Golden State to Bryan	--	--	--		--	--		--	--		--	--	
SR 99 NB Ramps to GS	--	--	--		--	--		--	--		--	--	
SR 99 SB Ramps to SR 99 NB Ramps	--	--	--		--	--		--	--		--	--	
Bryan(2) to SR 99 SB Ramps	--	--	--		--	--		--	--		--	--	
Sierra Avenue													
Bryan to Polk	1	228	C		179	C		98	C		164	C	
Polk Avenue													
Herndon to Sierra	1	481	D		284	C		547	D		518	D	
Golden State Boulevard													
Herndon to Veterans	1	355	C		**800**	**E**	**0.01**	483	D		740	D	0.03
Veterans to Carnegie	1	322	C		275	C		351	C		378	C	
Carnegie to Shaw	1	503	D		629	D		**933**	**F**	**0.03**	545	D	
Shaw to Ashlan	1	**844**	**F**	**0.00**	583	D		**1,538**	**F**	**0.02**	623	D	
Shaw Avenue													
w/o SR 99 SB Ramps	1	**1,386**	**F**	**0.00**	**916**	**F**	**0.01**	**1,090**	**F**	**0.01**	**1,604**	**F**	**0.02**
SR 99 SB Ramps to SR 99 NB Ramps	1-2	**1,166**	**F**		**1,417**	**D**		**1,154**	**F**		**2,001**	**F**	
SR 99 NB Ramps to Golden State	2	1,178	D		1,421	D		1,412	D		**2,017**	**F**	**0.01**
Golden State to Brawley	3	1,750	D		1,666	C		2,418	D		**2,471**	**E**	**0.01**
Brawley to Marks	3	1,780	D		1,531	C		2,302	D		2,370	D	
Marks to West	3	2,095	D		1,425	C		1,882	D		1,994	D	
e/o West	3	1,994	D		1,289	C		1,682	C		1,956	D	
Grantland Avenue													
Parkway to Bullard	1	753	D	0.04	386	C		599	D		656	D	0.10
Bullard to Barstow	1	488	D		435	C		403	C		542	D	
Palm Avenue													
Herndon to Bullard	2	1,176	D		1,214	D		1,244	D		1,115	C	
Dante Avenue													
Polk to Bullard	1	190	C		179	C		179	C		170	C	
Carnegie Avenue													
Golden State to Bullard	1	312	C		702	D		**855**	**F**	**0.00**	423	C	
Ashlan Avenue													
SR 99 SB Ramps to SR 99 NB Ramps	2	**2,041**	**F**		1,009	C		**1,713**	**E**		**1,886**	**F**	

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* , for State Two-Way Arterials (Class II) & Non-State Roadways.

[2] V/C based on LOS F capacities in the Florida Tables

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact (v/c ≥ 0.15 per the City of Fresno General Plan Transportation Policy B-3)

- Golden State Boulevard to Weber Avenue: EB p.m. peak hour, 0.16 V/C increase at LOS F; WB p.m. peak hour, 0.15 V/C increase at LOS E

SCENARIO 3 – PHASES 1D AND 1E (BRYAN AVENUE TO BULLARD AVENUE EXTENSION)

Intersection Levels of Service

Table F presents the results of the intersection level of service (LOS) analysis for Phases 1D and 1E. According to the table and based on the City's significance criteria, the following study intersections would be significantly impacted by the addition of Phases 1D and 1E traffic to 2010 baseline traffic (which includes Phases 1A through 1C traffic and conditioned improvements). Therefore, Phases 1D and 1E would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or greater at LOS E and F) at the following study intersections:

- Grantland Avenue/Bullard Avenue (LOS D to E in p.m.)
- Carnegie Avenue/Bullard Avenue (delay ≥5 seconds to LOS F in p.m.)
- Golden State Boulevard/Carnegie Avenue (LOS E to F in a.m.; additional delay ≥5 seconds to LOS F in p.m.)

Roadway Level of Service Analysis

Table G presents the results of the 2010 plus Phases 1D and 1E roadway level of service analysis for the a.m. and p.m. peak hours. According to the table, the addition of the Phases 1D and 1E trips to the study area roadway segments would create significant impacts at the following intersections as impacted (LOS E or F) roadway segment V/C ratios would be increased by 0.15 V/C or higher.

- Bryan Avenue
  - Phase 1C boundary to Phase 1E boundary
- Herndon Avenue
  - Parkway Drive to SR 99 southbound ramps: SB p.m. peak hour, 0.38 V/C increase at LOS F
  - SR 99 northbound ramps to Golden State Boulevard: EB a.m. peak hour, 0.19 V/C increase at LOS F; EB p.m. peak hour, 0.37 V/C increase at LOS F; WB p.m. peak hour, 0.37 V/C increase at LOS F
  - Golden State Boulevard to Weber Avenue: EB p.m. peak hour, 0.21 V/C increase at LOS F; WB p.m. peak hour, 0.18 V/C increase at LOS E
  - west of Polk Avenue: EB p.m. peak hour, 0.16 V/C increase at LOS E
  - Polk Avenue to Milburn Avenue: EB p.m. peak hour, 0.15 V/C increase at LOS F
- Parkway Drive
  - Herndon Avenue to Grantland Avenue: SB p.m. peak hour, 0.38 V/C increase at LOS F

SCENARIO 4 – PHASE 1F

Intersection Levels of Service

Table H presents the results of the intersection level of service (LOS) analysis for the remaining Phases 1F. According to the table and based on the City's significance criteria, the following study intersections would be significantly impacted by the addition of Phase 1F traffic to 2010 baseline traffic (which includes Phases 1A through 1E traffic and conditioned improvements).

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Table F - 2010 plus Phases 1D and 1E (Scenario 3)

		2010 + Project Scenario 2				2010 + Project Scenario 3			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	signal	31.6	C	31.2	C	42.6	D	40.6	D
2 99 SB Ramps/Herndon	--	--	--	--	--	--	--	--	--
3 99 NB Ramps/Herndon	signal	35.9	D	**>80**	**F**	44.5	D	**>80**	**F**
4 Golden State/Herndon	signal	33.0	C	**71.9**	**E**	34.5	C	41.0	D
5 Weber/Herndon	unsignalized	12.5	B	19.0	C	12.6	B	20.3	C
6 Bryan/Herndon	signal	39.3	D	37.7	D	36.5	D	24.6	C
7 Hayes/Herndon	signal	44.0	D	**57.8**	**E**	27.8	C	20.1	C
8 Veterans/Herndon	--	--	--	--	--	--	--	--	--
9 Polk/Herndon	signal	25.7	C	**>80**	**F**	27.7	C	45.1	D
10 Milburn/Herndon	signal	29.8	C	**>80**	**F**	30.8	C	45.6	D
11 Blythe/Herndon	signal	5.9	A	8.1	A	7.0	A	8.2	A
12 Brawley/Herndon	signal	48.4	D	**>80**	**F**	48.6	D	**>80**	**F**
13 Marks/Herndon	signal	**69.5**	**E**	**75.5**	**E**	**70.9**	**E**	**>80**	**F**
14 West/Herndon	signal	**74.8**	**E**	**>80**	**F**	**75.7**	**E**	**>80**	**F**
15 Palm/Herndon	signal	54.1	D	**>80**	**F**	**55.2**	**E**	**>80**	**F**
16 Blackstone/Herndon	signal	28.3	C	47.0	D	28.5	C	39.0	D
17 Grantland/Parkway	unsignalized	11.7	B	30.1	C	8.1	A	25.9	C
18 Bryan/Palo Alto	signal	15.5	B	12.9	B	19.9	B	12.5	B
19 Hayes/Palo Alto	unsignalized	12.5	B	9.0	A	12.5	B	8.4	A
20 Veterans/Hayes	--	--	--	--	--	--	--	--	--
21 Veterans/Bryan	--	--	--	--	--	--	--	--	--
22 Bryan/Sierra	--	--	--	--	--	--	--	--	--
23 Polk/Sierra	unsignalized	12.7	B	14.9	B	12.6	B	14.0	B
24 Golden State/Veteran	signal	--	--	--	--	--	--	--	--
25 Grantland/Bullard	unsignalized	**41.0**	**E**	33.1	D	43.6	D	**38.4**	**E**
26 99 NB Ramps/Veteran	--	--	--	--	--	--	--	--	--
27 99 SB Ramps/Veterans	--	--	--	--	--	--	--	--	--
28 Carnegie/Bullard	unsignalized	**43.1**	**E**	**>80**	**F**	**41.8**	**E**	**>80**	**F**
29 Golden State/Carneg	unsignalized	**77.6**	**E**	**75.2**	**F**	**>80**	**F**	**>80**	**F**
30 Dante/Bullard	unsignalized	12.1	B	12.7	B	12.7	B	19.0	C
31 Palm/Bullard	signal	42.3	D	**>80**	**F**	42.2	D	**65.8**	**E**
32 Veterans/Bryan	--	--	--	--	--	--	--	--	--
33 Grantland/Barstow	unsignalized	21.4	C	27.4	C	22.5	C	31.6	D
34 99 SB Ramps/Shaw	signal	**66.4**	**E**	39.5	D	**66.0**	**E**	39.2	D
35 99 NB Ramps/Shaw	signal	17.8	B	27.6	C	18.0	B	25.6	C
36 Golden State/Shaw	signal	51.9	D	**>80**	**F**	51.7	D	**>80**	**F**
37 Brawley/Shaw	signal	24.0	C	**>80**	**F**	24.3	C	**57.5**	**E**
38 Marks/Shaw	signal	29.6	C	**>80**	**F**	29.7	C	49.6	D
39 West/Shaw	signal	25.7	C	42.4	D	25.9	C	31.0	C
40 99 SB Ramps/Ashlan	signal	25.9	C	**66.5**	**E**	25.9	C	24.2	C
41 99 NB Ramps/Ashlan	signal	35.0	C	**>80**	**F**	35.4	D	**>80**	**F**

Notes:

XXX Denotes delay that exceeds thresholds

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Table G - 2010 plus Phases 1D and 1E (Scenario 3)

		2010 plus Phase 1											
		AM Peak Hour						PM Peak Hour					
Roadway Segment	No. of Lanes	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]
Herndon Avenue													
Parkway to SR 99 SB Ramps	1	629	D		**1,403**	**F**	**0.09**	619	D		**1,578**	**F**	**0.38**
SR 99 SB Ramps to SR 99 NB Ramps	1	**651**	**D**		**1,370**	**F**		672	D		**1,511**	**F**	
SR 99 NB Ramps to Golden State	1	**1,418**	**F**	**0.19**	**1,335**	**F**	**0.10**	**1,749**	**F**	**0.37**	**1,423**	**F**	**0.37**
Golden State to Weber	2	1,587	D	0.09	**1,790**	**E**	**0.04**	**2,222**	**F**	**0.21**	**1,765**	**E**	**0.18**
Weber to Bryan	3	1,235	C	-0.18	1,807	C	-0.09	1,794	C	-0.08	1,742	C	0.01
Bryan to Hayes	3	1,015	C		1,319	C	-0.18	1,593	C	-0.08	1,217	C	-0.16
Hayes to Veterans	2	815	C		1,058	C		976	C	-0.26	818	C	-0.30
Veterans to Polk	2	1,301	C		1,481	D		**1,733**	**E**	**0.16**	1,544	D	0.10
Polk to Milburn	2	1,688	D	0.04	1,526	D		**2,028**	**F**	**0.15**	**2,009**	**F**	**0.13**
Milburn to Blythe	3	1,901	C		1,445	C		2,019	C		2,110	C	
Blythe to Brawley	2	1,976	C		1,502	C		2,109	C		2,252	D	
Brawley to Marks	2	**2,446**	**F**	**0.03**	**1,726**	**E**	**0.05**	**2,295**	**F**	**0.11**	**2,726**	**F**	**0.11**
Marks to West	3	**2,910**	**F**	**0.02**	2,116	D		2,484	D	0.06	**3,174**	**F**	**0.06**
West to Palm	3	**3,243**	**F**	**0.02**	2,436	D		**2,880**	**F**	**0.06**	**3,439**	**F**	**0.04**
Palm to Blackstone	3	**2,573**	**E**	**0.01**	1,993	C		2,441	D		**2,683**	**E**	**0.03**
e/o Blackstone	3	2,320	D		1,976	C		2,208	D		2,058	C	
Parkway Drive													
Herndon and Grantland	1	584	D		**1,266**	**F**	**0.10**	566	D		**1,439**	**F**	**0.38**
Bryan Avenue													
Herndon to Palo Alto	2	644	C		472	C		723	C		760	C	
Palo Alto to Veterans	2	95	C		93	C		218	C		435	C	
Veterans to Sierra	--	--	--		--	--		--	--		--	--	
Sierra and Carnegie	1	280	C		277	C		359	C		357	C	
Carnegie to Dante	2	683	C		301	C		595	C		968	C	
Palo Alto Avenue													
Bryan to Hayes	1	337	C		404	C		160	C		101	C	
Hayes Avenue													
Herndon to Palo Alto	1	186	C		299	C		120	C		115	C	
Palo Alto to Veterans	1	429	C		175	C		93	C		123	C	
Veterans Avenue													
Hayes to Herndon	--	--	--		--	--		--	--		--	--	
Bryan to Hayes	--	--	--		--	--		--	--		--	--	
Golden State to Bryan	--	--	--		--	--		--	--		--	--	
SR 99 NB Ramps to GS	--	--	--		--	--		--	--		--	--	
SR 99 SB Ramps to SR 99 NB Ramps	--	--	--		--	--		--	--		--	--	
Bryan(2) to SR 99 SB Ramps	--	--	--		--	--		--	--		--	--	
Sierra Avenue													
Bryan to Polk	1	228	C		175	C		98	C		563	D	
Polk Avenue													
Herndon to Sierra	1	475	C		277	C		432	C		448	C	
Golden State Boulevard													
Herndon to Veterans	1	328	C		**802**	**E**	**0.01**	485	D		749	D	0.04
Veterans to Carnegie	1	296	C		242	C		342	C		331	C	
Carnegie to Shaw	1	518	D		639	D		**951**	**F**	**0.06**	573	D	
Shaw to Ashlan	1	**846**	**F**	**0.00**	611	D		**1,560**	**F**	**0.05**	650	D	
Shaw Avenue													
w/o SR 99 SB Ramps	1	**1,388**	**F**	**0.01**	**912**	**F**	**0.00**	**1,101**	**F**	**0.02**	**1,591**	**F**	**0.00**
SR 99 SB Ramps to SR 99 NB Ramps	1-2	**1,167**	**F**		1,409	D		**1,164**	**F**		**1,981**	**F**	
SR 99 NB Ramps to Golden State	2	1,183	D		1,413	D		1,409	D		**2,008**	**F**	**0.00**
Golden State to Brawley	3	1,753	D		1,674	C		2,421	D		**2,469**	**E**	**0.01**
Brawley to Marks	3	1,795	D		1,537	C		2,314	D		2,394	D	
Marks to West	3	2,106	D		1,429	C		1,925	D		2,019	D	
e/o West	3	2,000	D		1,295	C		1,714	C		1,968	D	
Grantland Avenue													
Parkway to Bullard	1	**767**	**E**	**0.05**	396	C		628	D		702	D	0.16
Bullard to Barstow	1	501	D		444	C		415	C		580	D	
Palm Avenue													
Herndon to Bullard	2	1,179	D		1,215	D		1,249	D		1,120	C	
Dante Avenue													
Polk to Bullard	1	187	C		175	C		173	C		167	C	
Carnegie Avenue													
Golden State to Bullard	1	334	C		723	D		**876**	**F**	**0.03**	501	D	
Ashlan Avenue													
SR 99 SB Ramps to SR 99 NB Ramps	2	**2,036**	**F**		1,027	C		**1,712**	**E**		**1,887**	**F**	

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* , for State Two-Way Arterials (Class II) & Non-State Roadways.

[2] V/C based on LOS F capacities in the Florida Tables

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact (v/c ≥ 0.15 per the City of Fresno General Plan Transportation Policy B-3)

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Table H - 2010 plus Phase 1F (Scenario 4)

		2010 + Project Scenario 3				2010 + Project Scenario 4			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Name	Control	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1 Parkway/Herndon	signal	42.6	D	40.6	D	54.0	D	39.4	D
2 99 SB Ramps/Herndon	--	--	--	--	--	--	--	--	--
3 99 NB Ramps/Herndon	signal	44.5	D	**>80**	**F**	**58.8**	**E**	**>80**	**F**
4 Golden State/Herndon	signal	34.5	C	41.0	D	33.6	C	38.1	D
5 Weber/Herndon	unsignalized	12.6	B	20.3	C	11.7	B	19.3	C
6 Bryan/Herndon	signal	36.5	D	24.6	C	31.9	C	37.2	D
7 Hayes/Herndon	signal	27.8	C	20.1	C	25.6	C	22.8	C
8 Veterans/Herndon	--	--	--	--	--	--	--	--	--
9 Polk/Herndon	signal	27.7	C	45.1	D	28.0	C	48.4	D
10 Milburn/Herndon	signal	30.8	C	45.6	D	29.2	C	49.8	D
11 Blythe/Herndon	signal	7.0	A	8.2	A	7.1	A	8.1	A
12 Brawley/Herndon	signal	48.6	D	**>80**	**F**	51.9	D	**>80**	**F**
13 Marks/Herndon	signal	**70.9**	**E**	**>80**	**F**	**73.1**	**E**	**>80**	**F**
14 West/Herndon	signal	**75.7**	**E**	**>80**	**F**	**77.4**	**E**	**>80**	**F**
15 Palm/Herndon	signal	**55.2**	**E**	**>80**	**F**	**56.8**	**E**	**>80**	**F**
16 Blackstone/Herndon	signal	28.5	C	39.0	D	28.8	C	41.3	D
17 Grantland/Parkway	unsignalized	8.1	A	25.9	C	8.0	A	38.7	D
18 Bryan/Palo Alto	signal	19.9	B	12.5	B	14.8	B	14.8	B
19 Hayes/Palo Alto	unsignalized	12.5	B	8.4	A	12.7	B	8.8	A
20 Veterans/Hayes	--	--	--	--	--	--	--	--	--
21 Veterans/Bryan	--	--	--	--	--	--	--	--	--
22 Bryan/Sierra	--	--	--	--	--	--	--	--	--
23 Polk/Sierra	unsignalized	12.6	B	14.0	B	12.6	B	14.1	B
24 Golden State/Veteran	signal	--	--	--	--	--	--	--	--
25 Grantland/Bullard	unsignalized	43.6	D	**38.4**	**E**	**47.8**	**E**	**51.5**	**F**
26 99 NB Ramps/Veteran	--	--	--	--	--	--	--	--	--
27 99 SB Ramps/Veterans	--	--	--	--	--	--	--	--	--
28 Carnegie/Bullard	unsignalized	**41.8**	**E**	**>80**	**F**	**43.9**	**E**	**>80**	**F**
29 Golden State/Carneg	unsignalized	**>80**	**F**	**>80**	**F**	**>80**	**F**	**>80**	**F**
30 Dante/Bullard	unsignalized	12.7	B	19.0	C	12.8	B	23.9	C
31 Palm/Bullard	signal	42.2	D	**65.8**	**E**	42.2	D	**65.8**	**E**
32 Veterans/Bryan	--	--	--	--	--	--	--	--	--
33 Grantland/Barstow	unsignalized	22.5	C	31.6	D	24.5	C	**44.2**	**E**
34 99 SB Ramps/Shaw	signal	**66.0**	**E**	39.2	D	**66.3**	**E**	40.2	D
35 99 NB Ramps/Shaw	signal	18.0	B	25.6	C	18.1	B	26.2	C
36 Golden State/Shaw	signal	51.7	D	**>80**	**F**	52.5	D	**>80**	**F**
37 Brawley/Shaw	signal	24.3	C	**57.5**	**E**	24.4	C	**58.8**	**E**
38 Marks/Shaw	signal	29.7	C	49.6	D	29.8	C	50.1	D
39 West/Shaw	signal	25.9	C	31.0	C	25.9	C	31.3	C
40 99 SB Ramps/Ashlan	signal	25.9	C	24.2	C	26.1	C	24.5	C
41 99 NB Ramps/Ashlan	signal	35.4	D	**>80**	**F**	35.6	D	**>80**	**F**

Notes:

XXX Denotes delay that exceeds thresholds

Therefore, Phase 1F would create a significant impact (LOS D to E or F; LOS E to LOS F; or additional delay of 5 seconds or greater at LOS E and F) at the following study intersections:

- Grantland Avenue/Bullard Avenue (LOS D to E in a.m.; LOS E to F in p.m.)
- Carnegie Avenue/Bullard Avenue (delay ≥5 seconds to LOS F in p.m.)
- Golden State Boulevard/Carnegie Avenue (additional delay ≥5 seconds to LOS F in a.m. and p.m.)
- Grantland Avenue/Barstow Avenue (LOS D to E in p.m.)

Roadway Level of Service Analysis

Table I presents the results of the 2010 plus Phase 1F roadway level of service analysis for the a.m. and p.m. peak hours. According to the table, the addition of the Phase 1F trips to the study area roadway segments would create significant impacts at the following intersections as impacted (LOS E or F) roadway segment V/C ratios would be increased by 0.15 V/C or higher.

- Bryan Avenue
  - Phase 1E boundary to Phase 1F boundary
- Herndon Avenue
  - Parkway Drive to SR 99 southbound ramps: SB p.m. peak hour, 0.56 V/C increase at LOS F
  - SR 99 northbound ramps to Golden State Boulevard: EB a.m. peak hour, 0.28 V/C increase at LOS F; WB a.m. peak hour, 0.15 V/C increase at LOS F; EB p.m. peak hour, 0.56 V/C increase at LOS F; WB p.m. peak hour, 0.56 V/C increase at LOS F
  - Bryan Avenue to Hayes Avenue: EB p.m. peak hour, 0.26 V/C increase at LOS F
- Parkway Drive
  - Herndon Avenue to Grantland Avenue: SB a.m. peak hour, 0.15 V/C increase at LOS F; SB p.m. peak hour, 0.57 V/C increase at LOS F
- Grantland Avenue
  - Parkway Drive to Bullard Avenue: WB p.m. peak hour, 0.24 V/C increase at LOS E

MITIGATION MEASURES

All Phase 1 Sub-Phases (1A through 1F) – Payment of City of Fresno Traffic Signal Mitigation Impact Fee and Fresno Major Street Impact Fee and Caltrans Combined Share Fee

TRAF-A Each sub-phase (Phases 1A through 1F) of Phase 1 shall pay its Traffic Signal Mitigation Impact (TSMI) Fee (per average daily trip – ADT) at the time of building permit. This fee is reviewed and updated yearly and the applicant pays the TSMI fee in place at the time of the building permit. This TSMI fee is credited against signal installation and Intelligent Transportation System (ITS) improvements (constructed at their ultimate location) anticipated to buildout of the 2025 General Plan Circulation Element and included in the *Nexus Study* for the TSMI fee. Project specific impacts that are not consistent with the 2025 General Plan, Public Works P69 standards, and/or already incorporated into the TSMI fees infrastructure costs are not

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Table I - 2010 plus Phase 1F (Scenario 4)

		2010 plus Phase 1											
		AM Peak Hour						PM Peak Hour					
Roadway Segment	No. of Lanes	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]	EB/NB Volume	LOS[1]	Increase in V/C[2]	WB/SB Volume	LOS[1]	Increase in V/C[2]
Herndon Avenue													
Parkway to SR 99 SB Ramps	1	652	D		**1,445**	**F**	**0.14**	683	D		**1,736**	**F**	**0.56**
SR 99 SB Ramps to SR 99 NB Ramps	1	675	D		**1,412**	**F**		737	D		**1,669**	**F**	
SR 99 NB Ramps to Golden State	1	**1,500**	**F**	**0.28**	**1,377**	**F**	**0.15**	**1,909**	**F**	**0.56**	**1,581**	**F**	**0.56**
Golden State to Weber	2	1,677	D	0.14	1,838	F	0.07	**2,423**	**F**	**0.32**	**1,936**	**F**	**0.27**
Weber to Bryan	3	1,292	C	-0.15	1,748	C	-0.12	1,967	C	0.02	1,611	C	-0.06
Bryan to Hayes	3	1,057	C		1,521	C	-0.06	1,749	C	0.01	1,358	C	-0.08
Hayes to Veterans	2	815	C		1,058	C		976	C	-0.26	818	C	-0.30
Veterans to Polk	2	1,341	C		1,546	D		**1,907**	**F**	**0.26**	**1,670**	D	0.17
Polk to Milburn	2	**1,729**	**E**	**0.07**	1,591	D		**2,178**	**F**	**0.23**	**2,133**	**F**	**0.20**
Milburn to Blythe	3	1,937	C		1,505	C		2,155	D		2,223	D	
Blythe to Brawley	2	2,012	C		1,562	C		2,244	D		2,362	D	
Brawley to Marks	2	**2,476**	**F**	**0.05**	**1,775**	**E**	**0.08**	**2,400**	**F**	**0.17**	**2,809**	**F**	**0.15**
Marks to West	3	**2,935**	**F**	**0.03**	2,160	D		**2,571**	**E**	**0.09**	**3,243**	**F**	**0.09**
West to Palm	3	**3,265**	**F**	**0.02**	2,478	D		**2,963**	**F**	**0.09**	**3,500**	**F**	**0.07**
Palm to Blackstone	3	**2,591**	**E**	**0.02**	2,022	C		2,504	D		**2,727**	**F**	**0.05**
e/o Blackstone	3	2,335	D		1,998	C		2,255	D		2,084	C	
Parkway Drive													
Herndon and Grantland	1	607	D		**1,308**	**F**	**0.15**	629	D		**1,592**	**F**	**0.57**
Bryan Avenue													
Herndon to Palo Alto	2	746	C		728	C		1,043	C		1,073	C	
Palo Alto to Veterans	2	117	C		160	C		424	C		544	C	
Veterans to Sierra	--	--	--		--	--		--	--		--	--	
Sierra and Carnegie	1	302	C		313	C		448	C		479	C	
Carnegie to Dante	2	693	C		318	C		669	C		1,045	C	
Palo Alto Avenue													
Bryan to Hayes	1	341	C		406	C		196	C		77	C	
Hayes Avenue													
Herndon to Palo Alto	1	186	C		299	C		141	C		115	C	
Palo Alto to Veterans	1	234	C		78	C		103	C		103	C	
Veterans Avenue													
Hayes to Herndon	--	--	--		--	--		--	--		--	--	
Bryan to Hayes	--	--	--		--	--		--	--		--	--	
Golden State to Bryan	--	--	--		--	--		--	--		--	--	
SR 99 NB Ramps to GS	--	--	--		--	--		--	--		--	--	
SR 99 SB Ramps to SR 99 NB Ramps	--	--	--		--	--		--	--		--	--	
Bryan(2) to SR 99 SB Ramps	--	--	--		--	--		--	--		--	--	
Sierra Avenue													
Bryan to Polk	1	228	C		205	C		98	C		776	E	
Polk Avenue													
Herndon to Sierra	1	475	C		277	C		434	C		470	C	
Golden State Boulevard													
Herndon to Veterans	1	329	C		**806**	**E**	**0.01**	522	D		**765**	**E**	**0.06**
Veterans to Carnegie	1	296	C		242	C		372	C		333	C	
Carnegie to Shaw	1	527	D		655	D		**974**	**F**	**0.09**	602	D	
Shaw to Ashlan	1	**846**	**F**	**0.00**	626	D		**1,575**	**F**	**0.07**	676	D	
Shaw Avenue													
w/o SR 99 SB Ramps	1	**1,390**	**F**	**0.01**	**916**	**F**	**0.01**	**1,110**	**F**	**0.03**	**1,600**	**F**	**0.01**
SR 99 SB Ramps to SR 99 NB Ramps	1-2	**1,169**	**F**		1,409	D		**1,173**	**F**		**1,981**	**F**	
SR 99 NB Ramps to Golden State	2	1,183	D		1,413	D		1,410	D		**2,010**	**F**	**0.00**
Golden State to Brawley	3	1,762	D		1,683	C		2,430	D		**2,476**	**E**	**0.01**
Brawley to Marks	3	1,800	D		1,542	C		2,336	D		2,404	D	
Marks to West	3	2,111	D		1,433	C		1,941	D		2,028	D	
e/o West	3	2,004	D		1,299	C		1,726	C		1,975	D	
Grantland Avenue													
Parkway to Bullard	1	**790**	**E**	**0.08**	412	C		691	D		**768**	**E**	**0.24**
Bullard to Barstow	1	521	D		457	C		461	C		640	D	
Palm Avenue													
Herndon to Bullard	2	1,182	D		1,218	D		1,258	D		1,129	D	
Dante Avenue													
Polk to Bullard	1	187	C		175	C		175	C		167	C	
Carnegie Avenue													
Golden State to Bullard	1	346	C		742	D		**891**	**F**	**0.05**	546	D	
Ashlan Avenue													
SR 99 SB Ramps to SR 99 NB Ramps	2	**2,042**	**F**		1,036	C		**1,722**	**F**		**1,894**	**F**	

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* , for State Two-Way Arterials (Class II) & Non-State Roadways.

[2] V/C based on LOS F capacities in the Florida Tables

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

XXX Denotes significant project impact (v/c ≥ 0.15 per the City of Fresno General Plan Transportation Policy B-3)

reimbursable unless the City Engineer and City Traffic Engineer include the new traffic signal and/or ITS infrastructure in the next update, and the applicant agrees to pay the new calculated TSMI fee that includes the new infrastructure.

TRAF-B Each sub-phase (Phases 1A through 1F) of Phase 1 shall pay its Fresno Major Street Impact (FMSI) Fee which will be determined at time of building permit on a "per acre" basis. Effective July 1, 2008, the appropriate FMSI fees would contain the City Wide Street Impact Fee plus the New Growth Area Major Street Impact Fee. This FMSI fee is creditable towards major street roadway improvements included in the *Nexus Study* for the FMSI fee.

TRAF-C Prior to obtaining a Building Permit, all sub-phases of Phase 1 shall pay their fair-share contribution towards improvements to Caltrans facilities noted below. The fair-share contribution shall be calculated per the February 2006 *Mutual Release and Settlement Agreement* between the City of Fresno and Caltrans District 6 (otherwise known as the "Interim Agreement"). This Interim Agreement provides guidance on the method for calculating a fair share to mitigate for impacts to State highways. Since Phase 1 will require a General Plan Amendment (GPA), and the GPA will increase trips over the existing use, the "Combined Formula" was used to calculate fair share. The Combined Formula is provided below:

P = (P1/F1) + (P2 – P1)/F2, where:

P = fair share percentage
P1 = the higher of the a.m. or p.m. peak hour project trips without GPA
P2 = the higher of the a.m. or p.m. peak hour project trips with GPA
F1 = total 2025 corresponding future peak hour traffic without project
F2 = total 2025 corresponding future peak hour traffic with project

SCENARIO 1 – PHASE 1A (INITIAL PHASE 1 DEVELOPMENT)

Intersection Levels of Service

TRAF-D Prior to obtaining a Building Permit, Phase 1A shall construct the traffic improvements listed below. These improvements are the minimum improvements needed to mitigate significant Phase 1A traffic impacts back to 2010 baseline conditions or better.

Parkway Drive/Herndon Avenue: Phase 1A would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to LOS F in the a.m. and p.m. peak hours. Phase 1A would be required to install a traffic signal (ITS interconnect with a 2070 controller per the PW ITS Standards and an ITS camera for operation monitoring) and construct the intersection to the lane configurations of dual left-turn lanes and a right-turn lane on the Herndon Avenue approach along with removing the southbound SR 99 off-ramp to Herndon Avenue – Grantland Parkway. The installation of traffic signal at this intersection is included in the TSMI fee and can be credited/reimbursed. With the implementation of the improvement the intersection will operate with LOS B in both peak hours. It should be noted that the City has conditioned Phase 1B to construct this measure and therefore the Phase 1A impact would be temporary until Phase 1B is constructed.

SR 99 northbound off-ramp/Herndon Avenue: Phase 1A would create a significant impact as the intersection LOS would decrease from LOS D to LOS F in the p.m. peak hour. Phase 1A will be required to improve the westbound segment of Herndon Avenue, including the approach to this intersection, by restriping (no widening of

the mainline structure required per Caltrans) to two lanes, while one eastbound through lane will remain. The length of the additional right-turn lane shall be calculated based on the 95th percentile queue in 2025 (510 feet). With the implementation of the improvement the intersection will operate with LOS B in the a.m. peak hour and LOS D in the p.m. peak hour. However, with mitigation, this intersection would still operate with unsatisfactory LOS (LOS D) per Caltrans significance criteria.

Bryan Aven ue/Herndon Avenue : Phase 1A would contribute to a significant cumulative impact in the a.m. peak hour as it would add ≥ 5 seconds of delay to LOS E in the a.m. peak hour. Phase 1A would be required to modify the existing Bryan Avenue/Herndon Avenue traffic signal with ITS interconnect with a 2070 controller per the PW ITS Standards and an ITS camera for operation monitoring; and construct the intersection to the ultimate lane configurations of dual left-turn lanes, three through lanes, and a right-turn lane on Herndon Avenue approaches and dual left-turn lanes, one through lane, and a right-turn lane on Bryan Avenue approaches. Per the roadway segment mitigation measures, the Herndon Avenue will be widened to six lanes. The FMSI fee assumes that a left-turn pocket is 250 feet. So if it is necessary to extend the left-turn pockets beyond 250 feet to mitigate the impacts then this would be a project specific impact and not reimbursable/credited towards the FMSI fee. Based on the queuing analysis, with other mitigation measures implemented, a 250 foot left-turn pocket would be adequate at all approaches. This traffic signal is included in the TSMI Fee and can be credited/reimbursed. With the implementation of the improvement the intersection will operate with LOS C in the a.m. peak hour.

Grantland Avenue/Par kway Drive : Phase 1A would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to the a.m. and p.m. peak hours. Phase 1A will be required to install the following: a traffic signal (ITS interconnect with a 2070 controller per the PW ITS Standards and an ITS camera for operation monitoring); 2) construct the intersection with a left-turn lane and a right-turn lane on the Grantland Avenue approach; and, 3) the Parkway Drive eastbound approach lane configurations shall be two through lanes and a right-turn lane. As part of this traffic signal installation Phase 1 will also be required to construct the southbound SR 99 on-ramp to have an additional on-ramp lane (total of two lanes) along with ramp metering. The FMSI fee assumes that a left-turn pocket is 250 feet. This traffic signal is included in the TSMI Fee and can be credited/reimbursed. With the implementation of the improvement the intersection would operate at LOS B in both peak hours. It should be noted that the City has conditioned Phase 1B to construct this measure and therefore the Phase 1A impact would be temporary until Phase 1B is constructed.

Grantland Avenue/Bullard Avenu e: Phase 1A would contribute to a significant cumulative impact as it would cause the intersection to operate from LOS D to LOS E in the a.m. peak hour. Phase 1A will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. The installation of a traffic signal would improve LOS to satisfactory conditions. With the implementation of the improvement, the intersection would operate at LOS A in both peak hours. The Phase 1A maximum contribution to this intersection is greater than 10 percent in the a.m. peak hour which would be cumulatively considerable.

Golden Sta te Boule vard/Carnegie Avenue : Phase 1A would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to LOS F in the

a.m. peak hour. Phase 1A will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. The installation of a traffic signal would improve LOS to satisfactory conditions. With the implementation of the improvement, the intersection would operate at LOS C in the a.m. peak hour. The project's maximum contribution to this intersection is greater than 10 percent in the a.m. peak hour which would be cumulatively considerable.

Roadway Level of Service Analysis

TRAF-E Prior to obtaining a Building Permit, Phase 1A shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study roadway segments in the 2010 plus Phase 1A condition:

Herndon Avenue, Weber Avenue to Bryan Avenue: Full frontage improvements on south side of Herndon Avenue (three lanes in eastbound direction), raised median island and landscaping on Herndon Avenue. Maintain two westbound lanes on Herndon Avenue.

Bryan Avenue, Herndon Avenue to Phase 1A southern boundary: Full Bryan Avenue frontage improvements on the west side (two lanes in southbound direction) and median island down to Palo Alto Avenue plus transition paving. Construct two northbound lanes with AC dike on east side of Bryan Avenue (two 12 foot travel lanes and one 5 foot shoulder/bike lane).

Palo Alto Avenue, Bryan Avenue to Hayes Avenue: Install two residential street traffic circles on Palo Alto Avenue between Hayes Avenue and Bryan Avenue at the major access points to the subdivision on the south side of Palo Alto Avenue. These two calming devices will ensure any project related traffic will drive on Palo Alto Avenue slowly and provide turn around locations for parent/student drop-offs on Palo Alto Avenue. Consideration for bus access needs to be provided.

SCENARIO 2 – PHASES 1B AND 1C (BRYAN AVENUE AND HERNDON AVENUE IMPROVEMENTS PLUS PARKWAY DRIVE SIGNALS)

Intersection Levels of Service

TRAF-F Prior to obtaining a Building Permit, Phases 1B and 1C shall construct the traffic improvements listed below. These improvements are the minimum improvements needed to mitigate significant Phase 1B and 1C traffic impacts back to 2010 baseline (including Phase 1A) conditions or better.

Bryan Avenue/Palo Alto Avenue: Install traffic signal at Bryan Avenue/Palo Alto Avenue to facilitate access between school and shopping center and residential. Install diverters (pork chops) on the eastbound and westbound approaches on Palo Alto Avenue and shopping center driveway to prohibit east- and westbound through traffic. Coordinate traffic signals on Bryan Avenue.

Hayes Avenue/Herndon Avenue: Phases 1B and 1C would create a significant project impact in the p.m. peak hour. To mitigate impacts of Phases 1B and 1C, Bryan Avenue would need to be extended from North Cresta Avenue to the existing terminus of Bullard Avenue north of Carnegie Avenue with one lane in each direction. In addition, the restricted access at Bryan Avenue/Palo Alto Avenue will reduce cut-through traffic at this intersection. Herndon Avenue would also need to widened to six lanes. With the extension of Bryan Avenue and the restriction of through traffic on Palo Alto Avenue from Phase 1, impacts from Phases 1B and 1C to

this intersection would be mitigated to 2010 baseline conditions (or better). With the implementation of the improvements noted above, the intersection would operate at LOS C in the p.m. peak hour. It should be noted that the City has conditioned Phase 1D to construct the Bryan Avenue extension to Bullard Avenue and therefore the impact from Phases 1B and 1C would be temporary until Phase 1D is constructed.

Polk Avenue/Herndon Avenue: Phases 1B and 1C would create a significant project impact in the p.m. peak hour. To mitigate opening-day impacts of Phases 1B and 1C, Bryan Avenue would need to be extended from North Cresta Avenue to the existing terminus of Bullard Avenue north of Carnegie Avenue with one lane in each direction. With the extension of Bryan Avenue, the impacts from Phases 1B and 1C to this intersection would be mitigated to 2010 baseline conditions (or better). With the implementation of this improvement, the intersection would operate at LOS C in the p.m. peak hour. It should be noted however that the City has conditioned Phase 1D to construct the Bryan Avenue extension to Bullard Avenue and therefore the impact from Phases 1B and 1C would be temporary until Phase 1D is constructed.

Millburn Avenue/Hernd on Avenue : Phases 1B and 1C would create a significant project impact in the p.m. peak hour. To mitigate opening-day impacts of Phases 1B and 1C, Bryan Avenue would need to be extended from North Cresta Avenue to the existing terminus of Bullard Avenue north of Carnegie Avenue with one lane in each direction. With the extension of Bryan Avenue, the Phase 1 impacts to this intersection would be mitigated to 2010 baseline conditions (or better). With the implementation of this improvement, the intersection would operate at LOS D in the p.m. peak hour. It should be noted that the City has conditioned Phase 1D to construct the Bryan Avenue extension to Bullard Avenue and therefore the impact from Phases 1B and 1C would be temporary until Phase 1D is constructed.

Palm Avenue/Herndon Avenue: Phases 1B and 1C would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to the p.m. peak hour. This intersection is built to its ultimate General Plan configuration and there are no feasible mitigation measures that could mitigate the project's impact to less than significant levels. Therefore, the impact from Phases 1B and 1C to this intersection is considered significant and unavoidable.

Roadway Level of Service Analysis

TRAF-G Prior to obtaining a Building Permit, Phases 1B and 1C shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study roadway segments in the 2010 plus Phases 1B and 1C condition:

Herndon Avenue, Parkway Dri ve t o Golden State Boul evard: Phase 1A would contribute to a significant cumulative impact on this roadway segment. Phase 1A will construct (primarily slurry and restripe) Herndon Avenue to have two westbound lanes and one eastbound lane between Parkway Drive and the SR 99 northbound ramps. Between the SR 99 northbound ramps and Golden State Boulevard, Phase 1 will construct two additional through lanes for a total of three eastbound lanes. Based on comments from Caltrans District 6 this would be a feasible improvement resulting in six foot shoulders underneath the mainline structure. This improvement mainly requires slurry and restriping of the roadway with minor roadway work on either end of the structure. With the implementation of this improvement, the

westbound segment from Parkway Drive to the mainline structure would continue to operate with unsatisfactory LOS (LOS E), and the Caltrans-controlled segment underneath the mainline would also continue to operate with unsatisfactory LOS in both directions (LOS D eastbound, and LOS E westbound).

Herndon Avenue, W eber Avenue to Bryan Avenue: Phases 1B and 1C would contribute to a significant cumulative impact on this roadway segment. Phases 1B and 1C will construct westbound Herndon Avenue to three lanes. This roadway segment is part of the FMSI fee, and this improvement can be reimbursed/credited. With the implementation of this improvement, this roadway segment would operate with satisfactory LOS (LOS C and LOS D).

SCENARIO 3 – PHASES 1D AND 1E (BRYAN AVENUE TO BULLARD AVENUE EXTENSION)

Intersection Levels of Service

TRAF-H Prior to obtaining a Building Permit, Phases 1D and 1E shall construct the traffic improvements listed below. These improvements are the minimum improvements needed to mitigate significant Phase 1D and 1E traffic impacts back to 2010 baseline (including Phases 1A through 1C) conditions or better.

Grantland Avenue/Bullar d Avenue : Phases 1D and 1E would create a significant impact as it would cause the intersection LOS to degrade from LOS D to LOS E in the p.m. peak hour. Phases 1D and 1E will be required to pay the City's TSMI and FMSI fees to mitigate their proportional share of cumulative impacts. The installation of a traffic signal would improve LOS to satisfactory conditions. With the implementation of the improvement, the intersection would operate at LOS A in both peak hours. The maximum contribution from Phases 1D and 1E to this intersection is greater than 10 percent in the a.m. peak hour which would be cumulatively considerable.

Bullard Avenue/Carnegie Avenue: Phases 1D and 1E would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to LOS F in the p.m. peak hour. Phases 1D and 1E will be required to pay the City's TSMI and FMSI fees to mitigate their proportional share of cumulative impacts. The installation of a traffic signal would improve LOS to satisfactory conditions. With the implementation of the improvement, the intersection would operate at LOS A in both peak hours. The project's maximum contribution to this intersection is greater than 10 percent in the p.m. peak hour which would be cumulatively considerable.

Golden State Boulevard/Carnegie Avenue: Phases 1D and 1E would contribute to a significant cumulative impact as it would degrade LOS from LOS E to LOS F in the a.m. peak hour; and, add ≥ 5 seconds of delay to LOS F in the p.m. peak hour. Phases 1D and 1E will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. The installation of a traffic signal would improve LOS to satisfactory conditions. With the implementation of the improvement, the intersection would operate at LOS C in the a.m. peak hour. The project's maximum contribution to this intersection is greater than 10 percent in the a.m. peak hour which would be cumulatively considerable.

Roadway Level of Service Analysis

TRAF-I Prior to obtaining a Building Permit, Phases 1D and 1E shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study roadway segments in the 2010 plus Phases 1D and 1E condition:

Herndon Avenue, Bryan Avenue to Hayes Avenue: Phases 1D and 1E would contribute to a significant cumulative impact on this roadway segment. Phases 1D and 1E will be required to pay the City's TSMI and FMSI fees to mitigate their proportional share of cumulative impacts. Widen the westbound direction of Herndon Avenue to three lanes between Bryan Avenue and Hayes Avenue.

Herndon Avenue, Hayes Avenue to Polk Avenue : Phases 1D and 1E would contribute to a significant cumulative impact on this roadway segment. Phases 1D and 1E will be required to pay the City's TSMI and FMSI fees to mitigate their proportional share of cumulative impacts. Herndon Avenue would need to be widened to six lanes with a raised landscaped median island in this segment. With implementation of this improvement, the roadway segment would operate with satisfactory LOS (LOS C). The project's maximum contribution to this segment is 0.16 V/C in the eastbound direction in the p.m. peak hour which would be cumulatively considerable. In order to effectively provide a third eastbound through lane, the eastbound return lane, east of Polk Avenue would need to be constructed. The return lane would be located on a section of the existing four lane overpass to the BNSF railroad tracks.

Herndon Avenue, Polk Avenue to Milburn Avenue: Phases 1D and 1E would contribute to a significant cumulative impact on this roadway segment. Phases 1D and 1E will be required to pay the City's TSMI and FMSI fees to mitigate their proportional share of cumulative impacts. Herndon Avenue would need to be widened to six lanes with a raised landscaped median island in this segment. With implementation of this improvement, the roadway segment would operate with satisfactory LOS (LOS C and LOS D). The project's maximum contribution to this segment is 0.15 V/C in the eastbound direction in the p.m. peak hour which would be cumulatively considerable. In order to effectively provide a third eastbound through lane, the eastbound return lane, east of Polk Avenue would need to be constructed. The return lane would be located on a section of the existing four lane overpass to the BNSF railroad tracks.

Parkway Drive, Herndon Avenue and Grantland Avenue: Phases 1D and 1E would contribute to a significant cumulative impact on this roadway segment. Phases 1D and 1E will be required to pay the City's TSMI and FMSI fees to mitigate their proportional share of cumulative impacts. Parkway Drive would need to be widened to four lanes in this segment. With implementation of this improvement, the roadway segment would operate with satisfactory LOS (LOS D). The project's maximum contribution to this segment is 0.38 V/C in the southbound direction in the p.m. peak hour which would be cumulatively considerable.

SCENARIO 4 – PHASE 1F

Intersection Levels of Service

TRAF-J Prior to obtaining a Building Permit, Phase1F shall construct the traffic improvements listed below. These improvements are the minimum improvements needed to mitigate significant Phase 1F traffic impacts back to 2010 baseline (including Phases 1A through 1E) conditions or better.

Grantland Avenue/Bullard Avenue: Phase 1F would create a significant impact as it would cause the intersection LOS to degrade from LOS D to LOS E in the a.m. peak hour, and LOS E to LOS F in the p.m. peak hour. Phase 1F will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts.

The installation of a traffic signal would improve LOS to satisfactory conditions. With the implementation of the improvement, the intersection would operate at LOS A in both peak hours. The maximum contribution from Phase 1F to this intersection is greater than 10 percent in the a.m. peak hour which would be cumulatively considerable.

Bullard Avenue/Carneg ie Avenue : Phase 1F would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to LOS F in the p.m. peak hour. Phase 1F will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. The installation of a traffic signal would improve LOS to satisfactory conditions. With the implementation of the improvement, the intersection would operate at LOS A in both peak hours. The project's maximum contribution to this intersection is greater than 10 percent in the p.m. peak hour which would be cumulatively considerable.

Golden Sta te Boul evard/Carnegie Avenue : Phase 1F would contribute to a significant cumulative impact as it would add ≥ 5 seconds of delay to LOS F in the a.m. and p.m. peak hours. Phase 1F will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. The installation of a traffic signal would improve LOS to satisfactory conditions. With the implementation of the improvement, the intersection would operate at LOS C in the a.m. peak hour. The project's maximum contribution to this intersection is greater than 10 percent in the a.m. peak hour which would be cumulatively considerable.

Grantland Avenue/Barstow Avenue: Phase 1F would create a significant project impact in the p.m. peak hour. Phase 1F would be required to convert the intersection traffic control from a two-way stop controlled intersection to an all-way stop controlled intersection to mitigate the significant project impact. With the implementation of the improvement the intersection would operate with LOS C in both peak hours.

Roadway Level of Service Analysis

TRAF-K Prior to obtaining a Building Permit, Phase 1F shall construct the traffic improvements listed below. The following are improvements for the significantly impacted study roadway segments in the 2010 plus Phase 1F condition:

Herndon Avenue, Bryan Avenue to Hayes Avenue: Phase 1F would contribute to a significant cumulative impact on this roadway segment. Phase 1F will be required to pay the City's TSMI and FMSI fees to mitigate their proportional share of cumulative impacts. Restripe the eastbound direction of Herndon Avenue to three lanes between Bryan Avenue and Hayes Avenue.

Herndon Avenue, Parkway Drive to Golden State Boulevard : Phase 1F would contribute to a significant cumulative impact on this roadway segment. Phases 1B and 1C will construct (primarily slurry and restripe) Herndon Avenue to have two westbound lanes and one eastbound lane between Parkway Drive and the SR 99 northbound ramps. Between the SR 99 northbound ramps and Golden State Boulevard, Phases 1B and 1C will construct two additional through lanes for a total of three eastbound lanes. With the implementation of this improvement, the westbound segment from Parkway Drive to the mainline structure would continue to operate with unsatisfactory LOS (LOS E), and the Caltrans-controlled segment underneath the mainline would also continue to operate with unsatisfactory LOS in

both directions (LOS D eastbound, and LOS E westbound). Therefore, Phase 1F would contribute to a significant unavoidable impact.

Grantland Avenue, Parkway Dr ive t o Bullard Avenue : Phase 1F would create a significant impact on this roadway segment. Phase 1F will be required to pay the City's TSMI and FMSI fees to mitigate its proportional share of cumulative impacts. The construction of Grantland Avenue to two southbound travel lanes with a raised landscaped median would improve LOS to LOS C. The project's maximum contribution to this segment is 0.24 V/C for the westbound direction which is cumulatively considerable. In addition to the need for a second southbound travel lane, a traffic signal is also required at Grantland Avenue/Bullard Avenue where Phase 1 would also create a significant project impact.

This concludes the traffic analysis for the sub-phasing (Phases 1A through 1F) of Phase 1 of the El Paseo Master Plan.

Attachments: Attachment A – 2010 Baseline Traffic Data from October 2008 DKS TIS
Attachment B – Synchro LOS and Queuing Worksheets

ATTACHMENT A – 2010 BASELINE TRAFFIC DATA FROM OCTOBER 2008 DKS TIS

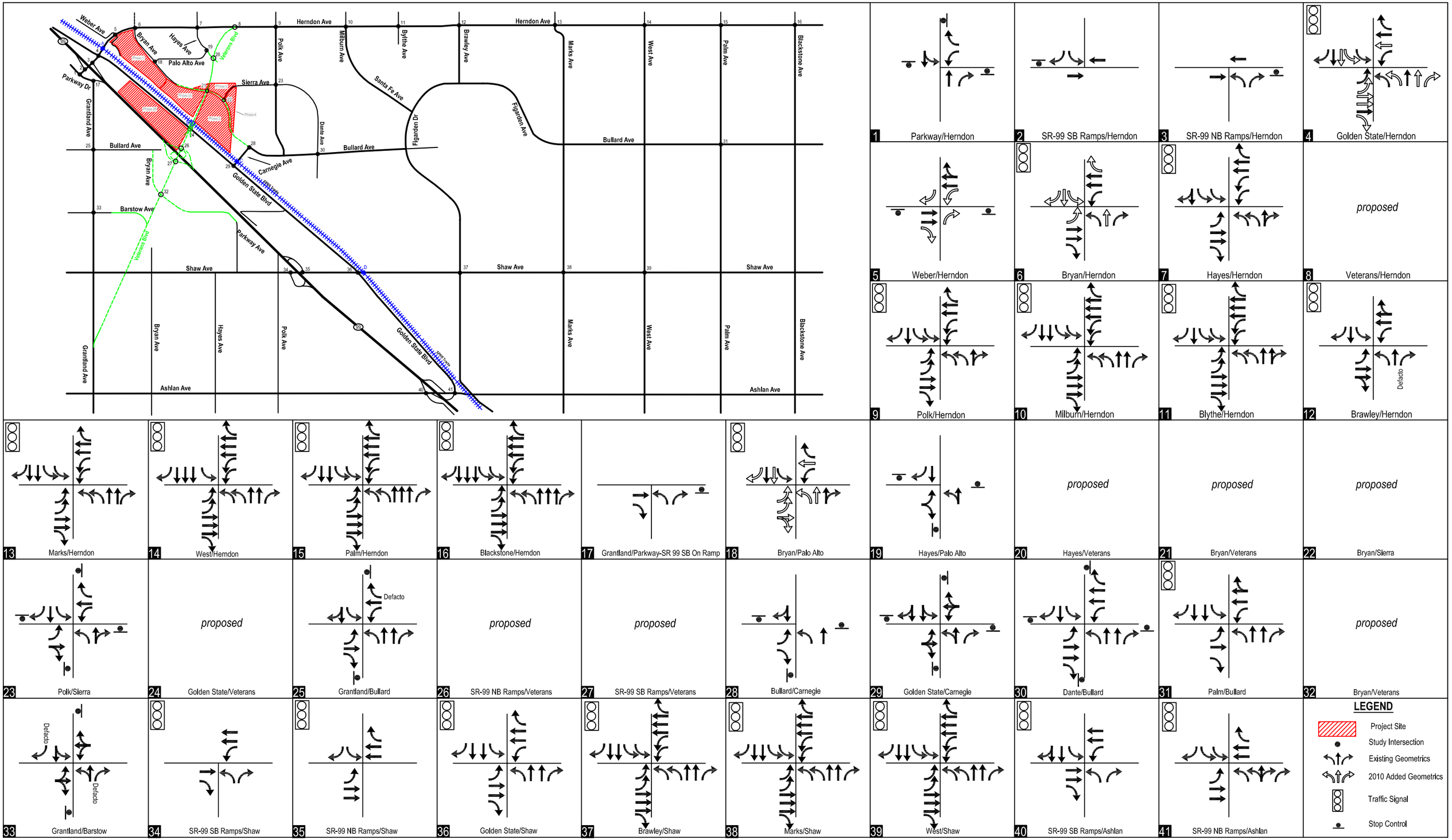

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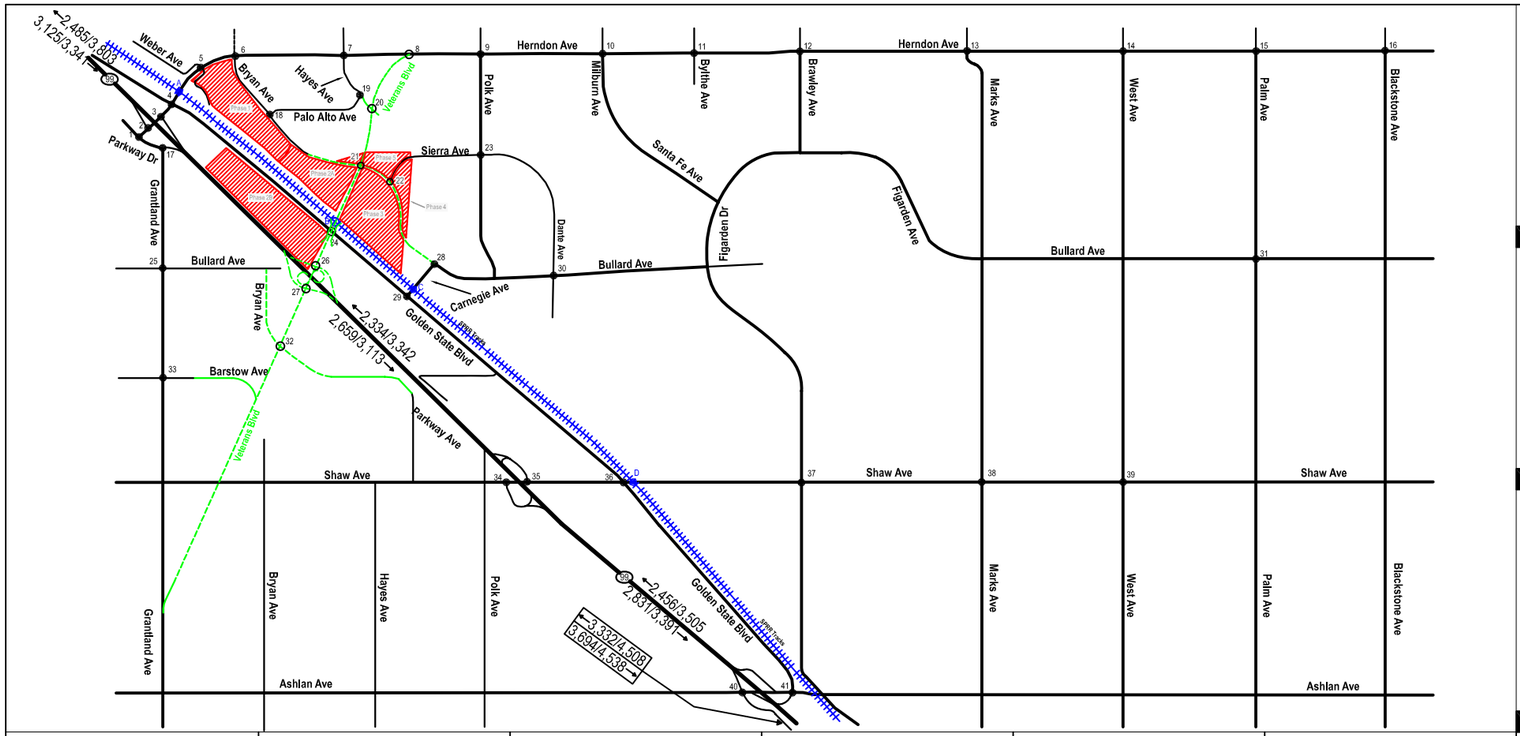
Figure 9-3
Year 2010 + Phase 1 Intersection Geometrics and Traffic Control



1 Parkway/Herndon
32/35 105/95 154/133 1054/1055 12/14 478/400

2 SR-99 SB Ramps/Herndon
39/74 26/45 1285/1185 585/493

3 SR-99 NB Ramps/Herndon
1234/1107 604/545 55/85 654/891

4 Golden State/Herndon
246/127 114/200 361/537 615/442 945/887 114/112 190/153 985/1148 66/75 62/82 200/193 79/153

5 Weber/Herndon
0/5 0/0 0/0 0/0 1714/1439 3/1 2/2 1403/1838 0/3 1/1 0/0 2/2

6 Bryan/Herndon
312/322 21/10 206/224 223/188 1353/1311 59/2 310/310 964/1507 287/118 299/88 5/11 154/3

7 Hayes/Herndon
144/48 129/12 21/18 12/27 1212/1238 162/81 67/123 1026/1375 9/34 54/27 32/13 114/52

8 Veterans/Herndon
proposed

9 Polk/Herndon
27/27 67/78 171/210 99/202 1205/1198 110/377 7/9 1113/1286 104/143 134/138 32/84 308/262

10 Milburn/Herndon
273/330 397/494 487/571 268/523 970/1258 90/102 255/458 1186/1138 169/167 150/173 286/547 147/65

11 Blythe/Herndon
1/10 0/1 56/66 56/66 1330/1892 2/4 0/1 1827/1767 1/1 0/2 1/0 0/4

12 Brawley/Herndon
45/61 94/84 66/28 25/63 1147/1650 370/484 74/58 1633/1459 196/352 155/327 98/95 421/410

13 Marks/Herndon
150/342 159/231 222/278 248/390 1338/2002 228/332 119/221 2176/1749 90/124 142/191 137/246 263/254

14 West/Herndon
48/161 103/151 250/214 130/308 1890/2684 335/305 62/99 2621/2040 176/175 91/163 77/143 306/461

15 Palm/Herndon
783/1044 728/818 173/309 375/217 1284/2104 247/276 943/933 2148/1669 108/66 153/172 800/882 219/180

16 Blackstone/Herndon
223/475 383/798 219/287 238/261 1583/1563 109/179 229/250 1953/1733 139/358 126/219 255/613 123/97

17 Grantland/Parkway-SR 99 SB On Ramp
822/559 365/571 540/443 183/62

18 Bryan/Palo Alto
11/23 330/65 397/77 2/2 50/9 1/2

19 Hayes/Palo Alto
286/89 11/49 175/90 142/55 186/45 41/27

20 Hayes/Veterans
proposed

21 Bryan/Veterans
proposed

22 Bryan/Sierra
proposed

23 Polk/Sierra
28/52 189/294 60/93 71/78 65/66 40/12 54/35 104/51 70/12 52/53 238/276 23/24

24 Golden State/Veterans
proposed

25 Grantland/Bullard
20/41 221/391 62/68 190/72 4/5 10/14 67/44 4/3 7/3 8/7 449/293 5/28

26 SR-99 NB Ramps/Veterans
proposed

27 SR-99 SB Ramps/Veterans
proposed

28 Bullard/Carnegie
144/39 44/13 103/105 209/747 542/373 120/25

29 Golden State/Carnegie
8/14 187/175 67/154 182/104 6/13 509/277 2/16 1/19 4/9 4/8 125/185 229/640

30 Dante/Bullard
52/30 14/15 103/34 33/49 289/296 28/62 19/112 177/498 40/62 185/62 12/7 20/10

31 Palm/Bullard
69/124 461/826 86/83 95/72 545/903 104/165 170/193 894/736 81/80 49/178 432/839 82/163

32 Bryan/Veterans
proposed

33 Grantland/Barstow
25/55 163/197 38/68 58/82 18/60 4/4 59/37 29/25 11/6 8/12 307/178 6/2

34 SR-99 SB Ramps/Shaw
846/1494 571/502 896/808 487/275 65/96 267/292

35 SR-99 NB Ramps/Shaw
254/323 145/328 259/359 1157/1644 112/63 1033/1084

36 Golden State/Shaw
30/40 379/270 213/207 161/277 1126/1743 370/434 36/45 1004/1312 38/52 17/46 301/583 526/892

37 Brawley/Shaw
145/170 684/438 235/427 94/245 1127/1816 121/205 103/290 1191/1703 73/151 170/276 230/769 64/151

38 Marks/Shaw
403/425 509/441 279/219 59/171 943/1512 144/310 247/573 1432/1472 101/222 181/432 408/670 384/189

39 West/Shaw
158/175 419/489 148/134 67/116 1065/1572 155/264 122/224 1578/1414 146/125 200/232 538/353 266/130

40 SR-99 SB Ramps/Ashlan
73/90 27/103 161/153 501/1202 137/382 1466/1043 35/65 20/51 403/495

41 SR-99 NB Ramps/Ashlan
210/374 179/201 295/698 537/930 344/240 1103/1116 262/582 15/21 487/841

LEGEND

Project Site

Study Intersection

XX/YY AM/PM Peak Hour Volumes

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Figure 7-3A
Year 2010 Baseline Weekday AM and PM Peak Hour Traffic Volumes

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2010 Baseline Weekday Intersection Queuing Analysis Summary

Signalized Intersection		Storage & 95th Percentile Queue Lengths (ft)							
		NBL	NBR	SBL	SBR	EBL	EBR	WBL	WBR
2 99 SB Ramps/Herndon	Storage Length[1]	--	--	1,400	60	--	--	--	--
	AM Queue[1]	--	--			--	--	--	--
	PM Queue[1]	--	--			--	--	--	--
3 99 NB Ramps/Herndon	Storage Length[1]	1,400	--	--	--	--	--	--	--
	AM Queue[1]		--	--	--	--	--	--	--
	PM Queue[1]		--	--	--	--	--	--	--
4 Golden State/Herndon	Storage Length[1]	145	--	150	145	255	365	165	80
	AM Queue[1]	32	0	161	74	74	26	98	302
	PM Queue[1]	42	65	218	36	70	30	114	62
6 Bryan/Herndon	Storage Length[1]	150	150	250	250	165	165	165	165
	AM Queue[1]	468	62	295	204	479	79	96	132
	PM Queue[1]	125	9	366	112	467	48	11	106
7 Hayes/Herndon	Storage Length[1]	140	--	100	--	350	250	250	125
	AM Queue[1]	30	--	15	--	98	8	58	1
	PM Queue[1]	19	--	14	--	154	14	43	16
9 Polk/Herndon	Storage Length[1]	140	--	200	160	225	100	250	100
	AM Queue[1]	64	--	89	19	3	11	59	39
	PM Queue[1]	72	--	131	23	11	36	145	21
10 Milburn/Herndon	Storage Length[1]	185	50	260	150	100	80	80	480
	AM Queue[1]	59	40	192	86	120	41	41	53
	PM Queue[1]	87	42	288	121	150	13	36	359
11 Blythe/Herndon	Storage Length[1]	235	235	120	120	220	140	220	140
	AM Queue[1]	0	0	37	0	0	2	4	15
	PM Queue[1]	4	0	42	14	0	0	6	29
12 Brawley/Herndon	Storage Length[1]	105	75	80	80	290	--	310	--
	AM Queue[1]	295	362	155	36	112	--	581	--
	PM Queue[1]	484	197	43	35	112	--	700	--
13 Marks/Herndon	Storage Length[1]	245	125	160	160	145	50	280	190
	AM Queue[1]	115	315	202	92	45	11	204	26
	PM Queue[1]	169	255	224	427	189	75	243	141
14 West/Herndon	Storage Length[1]	175	65	185	350	260	200	275	140
	AM Queue[1]	68	368	421	33	27	19	269	55
	PM Queue[1]	106	576	372	131	103	84	227	164
15 Palm/Herndon	Storage Length[1]	145	280	250	230	245	190	210	145
	AM Queue[1]	122	119	117	779	487	42	171	333
	PM Queue[1]	172	63	267	1,428	604	34	163	156
16 Blackstone/Herndon	Storage Length[1]	250	110	240	90	250	160	250	100
	AM Queue[1]	65	47	120	110	114	40	64	79
	PM Queue[1]	129	37	143	393	140	130	112	103
17 Parkway/Grantland	Storage Length[1]	420	80	--	--	--	--	--	--
	AM Queue[1]			--	--	--	--	--	--
	PM Queue[1]			--	--	--	--	--	--
18 Bryan/Palo Alto	Storage Length[1]	--	--	180	--	--	--	730	150
	AM Queue[1]	--	--		--	--	--		
	PM Queue[1]	--	--		--	--	--		
31 Palm/Bullard	Storage Length[1]	120	55	90	70	150	150	140	--
	AM Queue[1]	92	57	149	48	164	23	171	--
	PM Queue[1]	300	127	166	103	257	41	275	--
34 99 SB Ramps/Shaw	Storage Length[1]	1,330	50	--	--	--	200	110	--
	AM Queue[1]	96	82	--	--	--	209	799	--
	PM Queue[1]	132	85	--	--	--	101	670	--
35 99 NB Ramps/Shaw	Storage Length[1]	--	--	1,300	50	120	--	--	230
	AM Queue[1]	--	--	109	85	127	--	--	33
	PM Queue[1]	--	--	350	247	96	--	--	37
36 Golden State/Shaw	Storage Length[1]	140	140	165	165	180	180	190	190
	AM Queue[1]	34	371	305	23	59	30	461	43
	PM Queue[1]	81	1,076	392	26	115	51	719	152
37 Brawley/Shaw	Storage Length[1]	260	100	220	130	220	130	200	120
	AM Queue[1]	71	25	96	36	42	25	54	28
	PM Queue[1]	151	109	277	80	210	83	154	143
38 Marks/Shaw	Storage Length[1]	190	105	240	270	235	135	275	155
	AM Queue[1]	96	233	135	216	114	36	83	25
	PM Queue[1]	244	85	139	295	302	78	163	70
39 West/Shaw	Storage Length[1]	240	75	185	115	240	155	210	125
	AM Queue[1]	98	111	66	48	51	34	82	24
	PM Queue[1]	117	39	58	47	111	33	125	40
40 99 SB Ramps/Ashlan	Storage Length[1]	100	100	360	110	--	100	575	--
	AM Queue[1]	25	247	122	0	--	18	162	--
	PM Queue[1]	54	125	128	0	--	37	351	--
41 99 NB Ramps/Ashlan	Storage Length[1]	240	520	210	210	320	--	--	85
	AM Queue[1]	254	221	87	61	361	--	--	137
	PM Queue[1]	700	615	172	372	412	--	--	786

Notes:

[1] Storage length determined by field measurement and review of scaled aerial photography. AM & PM queue lengths determined in *Synchro*.

XXX-Denotes 95th percentile queue that would exceed the lane's storage capacity.

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Year 2010 Baseline Roadway Segment Level of Service Summary

Roadway Segment	No. of Lanes	2010 Baseline							
		AM Peak Hour				PM Peak Hour			
		EB/NB Volume	LOS[1]	WB/SB Volume	LOS[1]	EB/NB Volume	LOS[1]	WB/SB Volume	LOS[1]
Herndon Avenue									
Parkway to SR 99 SB Ramps	1	585	C	**1,324**	**F**	495	C	**1,259**	**F**
SR 99 SB Ramps to SR 99 NB Ramps	1	611	D	**1,289**	**F**	545	C	**1,192**	**F**
SR 99 NB Ramps to Golden State	1	**1,258**	**F**	**1,253**	**F**	**1,436**	**F**	**1,107**	**F**
Golden State to Weber	2	1,425	D	**1,715**	**E**	**1,843**	**F**	1,445	D
Weber to Bryan	2	1,561	D	**1,964**	**F**	**1,935**	**F**	**1,721**	**E**
Bryan to Hayes	2	1,324	C	1,635	D	**1,734**	**E**	1,501	D
Hayes to Veterans	2	1,224	C	1,388	D	1,448	D	1,355	C
Veterans to Polk	2	1,224	C	1,388	D	1,448	D	1,361	D
Polk to Milburn	2	1,610	D	1,414	D	**1,763**	**E**	**1,777**	**E**
Milburn to Blythe	3	1,828	C	1,331	C	1,774	C	1,904	C
Blythe to Brawley	2	1,903	C	1,388	C	1,869	C	2,038	C
Brawley to Marks	2	**2,385**	**F**	1,630	D	**2,094**	**F**	**2,535**	**F**
Marks to West	3	**2,859**	**F**	2,029	C	2,314	D	**3,008**	**F**
West to Palm	3	**3,199**	**F**	2,355	D	**2,715**	**F**	**3,320**	**F**
Palm to Blackstone	3	2,540	D	1,932	C	2,341	D	**2,597**	**E**
e/o Blackstone	3	2,295	D	1,930	C	2,117	D	2,003	C
Parkway Drive									
Herndon and Grantland	1	540	D	**1,187**	**F**	443	C	**1,130**	**F**
Bryan Avenue									
Herndon to Palo Alto	1	458	C	531	D	102	C	316	C
Palo Alto to Veterans	1	51	C	408	C	11	C	25	C
Veterans to Sierra	--	--	--	--	--	--	--	--	--
Sierra and Carnegie	1	223	C	188	C	130	C	52	C
Carnegie to Dante	2	662	C	253	C	398	C	760	C
Palo Alto Avenue									
Bryan to Hayes	1	331	C	399	C	145	C	79	C
Hayes Avenue									
Herndon to Palo Alto	1	216	C	297	C	117	C	138	C
Palo Alto to Veterans	1	227	C	153	C	72	C	104	C
Veterans Avenue									
Hayes to Herndon	--	--	--	--	--	--	--	--	--
Bryan to Hayes	--	--	--	--	--	--	--	--	--
Golden State to Bryan	--	--	--	--	--	--	--	--	--
SR 99 NB Ramps to GS	--	--	--	--	--	--	--	--	--
SR 99 SB Ramps to SR 99 NB Ramps	--	--	--	--	--	--	--	--	--
Bryan(2) to SR 99 SB Ramps	--	--	--	--	--	--	--	--	--
Sierra Avenue									
Bryan to Polk	1	228	C	176	C	98	C	156	C
Polk Avenue									
Herndon to Sierra	1	474	C	277	C	482	D	439	C
Golden State Boulevard									
Herndon to Veterans	1	341	C	**795**	**E**	428	C	717	D
Veterans to Carnegie	1	309	C	262	C	305	C	343	C
Carnegie to Shaw	1	498	D	622	D	**905**	**F**	517	D
Shaw to Ashlan	1	**844**	**F**	578	D	**1,521**	**F**	599	D
Shaw Avenue									
w/o SR 99 SB Ramps	1	**1,383**	**F**	**911**	**F**	**1,083**	**F**	**1,590**	**F**
SR 99 SB Ramps to SR 99 NB Ramps	1-2	**1,163**	**F**	1,417	D	**1,147**	**F**	**1,996**	**F**
SR 99 NB Ramps to Golden State	2	1,178	D	1,416	D	1,412	D	**2,003**	**F**
Golden State to Brawley	3	1,743	D	1,657	C	2,411	D	**2,454**	**E**
Brawley to Marks	3	1,780	D	1,527	C	2,281	D	2,369	D
Marks to West	3	2,095	D	1,423	C	1,880	D	1,993	D
e/o West	3	1,992	D	1,287	C	1,678	C	1,952	D
Grantland Avenue									
Parkway to Bullard	1	723	D	365	C	505	D	571	D
Bullard to Barstow	1	462	C	418	C	328	C	466	C
Palm Avenue									
Herndon to Bullard	2	1,172	D	1,211	D	1,234	D	1,101	C
Dante Avenue									
Polk to Bullard	1	187	C	176	C	168	C	168	C
Carnegie Avenue									
Golden State to Bullard	1	312	C	697	D	**852**	**F**	412	C
Ashlan Avenue									
SR 99 SB Ramps to SR 99 NB Ramps	2	**2,030**	**F**	1,009	C	**1,691**	**E**	**1,886**	**F**

Notes:

[1] Florida Tables, Table 4-7: *Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas* , for State Two-Way Arterials (Class II) & Non-State Roadways.

-- Denotes proposed roadway segment.

XXX Denotes segment that exceeds thresholds

ATTACHMENT B – SYNCHRO WORKSHEETS

2010 Baseline

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	105	32	12	478	1054	154
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	114	35	13	520	1146	167

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	149	13	520	1146	167
Volume Left (vph)	114	0	0	1146	0
Volume Right (vph)	0	0	520	0	167
Hadj (s)	0.19	0.03	-0.67	0.53	-0.67
Departure Headway (s)	7.4	6.9	6.2	7.1	5.9
Degree Utilization, x	0.31	0.03	0.90	2.27	0.28
Capacity (veh/h)	474	508	574	513	589
Control Delay (s)	13.6	8.9	40.2	594.5	10.0
Approach Delay (s)	13.6	39.4		520.0	
Approach LOS	B	E		F	

Intersection Summary			
Delay	353.9		
HCM Level of Service	F		
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	26	39	0	585	1285	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	42	0	636	1397	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1082	
pX, platoon unblocked	0.60	0.60	0.60			
vC, conflicting volume	2033	1397	1397			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2388	1328	1328			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	63	100			
cM capacity (veh/h)	22	114	312			

Direction, Lane #	SE 1	NE 1	SW 1
Volume Total	71	636	1397
Volume Left	28	0	0
Volume Right	42	0	0
cSH	56	1700	1700
Volume to Capacity	1.26	0.37	0.82
Queue Length 95th (ft)	153	0	0
Control Delay (s)	244.9	0.0	0.0
Lane LOS	F		
Approach Delay (s)	244.9	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	115.1%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	55	654	604	0	0	1234
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	711	657	0	0	1341
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						591
pX, platoon unblocked	0.63					
vC, conflicting volume	1998	657			657	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2286	657			657	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	0			100	
cM capacity (veh/h)	28	465			931	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	771	657	1341
Volume Left	60	0	0
Volume Right	711	0	0
cSH	208	1700	1700
Volume to Capacity	3.70	0.39	0.79
Queue Length 95th (ft)	Err	0	0
Control Delay (s)	Err	0.0	0.0
Lane LOS	F		
Approach Delay (s)	Err	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	2783.4		
Intersection Capacity Utilization	115.1%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	361	114	246	62	200	79	190	985	66	114	945	615
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	392	124	267	67	217	86	207	1071	72	124	1027	668
RTOR Reduction (vph)	0	0	162	0	0	72	0	0	46	0	0	268
Lane Group Flow (vph)	392	124	105	67	217	14	207	1071	26	124	1027	400
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.3	18.1	18.1	2.4	11.2	11.2	9.3	25.0	25.0	8.5	24.2	24.2
Effective Green, g (s)	9.3	18.1	18.1	2.4	11.2	11.2	9.3	25.0	25.0	8.5	24.2	24.2
Actuated g/C Ratio	0.13	0.26	0.26	0.03	0.16	0.16	0.13	0.36	0.36	0.12	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	456	915	409	118	566	253	456	1816	565	215	1223	547
v/s Ratio Prot	c0.11	0.04		0.02	c0.06		0.06	0.21		c0.07	c0.29	
v/s Ratio Perm			0.07			0.01			0.02			0.25
v/c Ratio	0.86	0.14	0.26	0.57	0.38	0.05	0.45	0.59	0.05	0.58	0.84	0.73
Uniform Delay, d1	29.7	19.9	20.6	33.3	26.3	24.9	28.0	18.3	14.7	29.1	21.1	20.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.9	0.1	0.3	6.1	0.4	0.1	0.7	1.4	0.2	3.7	7.0	8.4
Delay (s)	44.6	20.0	20.9	39.4	26.7	25.0	28.7	19.7	14.9	32.8	28.1	28.4
Level of Service	D	C	C	D	C	C	C	B	B	C	C	C
Approach Delay (s)		32.6			28.6			20.9			28.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #1 Weber/Herndon
*******************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: F[ 61.8]
*******************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  1  1  0  1    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1    0     2     0    0     0     2 1403     0     3 1714     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    1    0     2     0    0     0     2 1403     0     3 1714     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     1    0     2     0    0     0     2 1525     0     3 1863     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    1    0     2     0    0     0     2 1525     0     3 1863     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8  6.5   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 2467 3399   763  2636 3399   932  1863 xxxx xxxxx  1525 xxxx xxxxx
Potent Cap.:   26    8   352    12    8   272   328 xxxx xxxxx   443 xxxx xxxxx
Move Cap.:     25    7   352    12    7   272   328 xxxx xxxxx   443 xxxx xxxxx
Volume/Cap:  0.04 0.00  0.01  0.00 0.00  0.00  0.01 xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  16.0 xxxx xxxxx  13.2 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     C    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx   67 xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.2 xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 61.8 xxxxx xxxxx xxxx xxxxx  16.0 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    F     *     *    *     *     C    *     *     *    *     *
ApproachDel:      61.8           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         F                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	310	964	287	59	1353	223	299	5	154	206	21	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	337	1048	312	64	1471	242	325	5	167	224	23	339
RTOR Reduction (vph)	0	0	123	0	0	71	0	0	142	0	0	215
Lane Group Flow (vph)	337	1048	189	64	1471	171	325	5	25	224	23	124
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.0	60.8	60.8	7.0	46.8	46.8	20.0	18.3	18.3	17.9	16.2	16.2
Effective Green, g (s)	21.0	60.8	60.8	7.0	46.8	46.8	20.0	18.3	18.3	17.9	16.2	16.2
Actuated g/C Ratio	0.18	0.51	0.51	0.06	0.39	0.39	0.17	0.15	0.15	0.15	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	310	1793	802	103	1380	617	295	284	241	264	252	214
v/s Ratio Prot	c0.19	0.30		0.04	c0.42		c0.18	0.00		0.13	0.01	
v/s Ratio Perm			0.12			0.11			0.02			c0.08
v/c Ratio	1.09	0.58	0.24	0.62	1.07	0.28	1.10	0.02	0.11	0.85	0.09	0.58
Uniform Delay, d1	49.5	20.7	16.6	55.2	36.6	25.0	50.0	43.2	43.8	49.7	45.5	48.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	76.4	0.5	0.2	11.1	43.9	0.2	82.5	0.1	0.9	21.6	0.2	4.0
Delay (s)	125.9	21.2	16.7	66.3	80.5	25.3	132.5	43.3	44.7	71.3	45.6	52.7
Level of Service	F	C	B	E	F	C	F	D	D	E	D	D
Approach Delay (s)		41.2			72.5			102.1			59.5	
Approach LOS		D			E			F			E	

Intersection Summary			
HCM Average Control Delay	62.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	1026	9	162	1212	12	54	32	114	21	129	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1645		3433	1715	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	1645		3433	1715	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	1115	10	176	1317	13	59	35	124	23	140	157
RTOR Reduction (vph)	0	0	6	0	0	6	0	89	0	0	55	0
Lane Group Flow (vph)	73	1115	4	176	1317	7	59	70	0	23	242	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	3.2	27.6	27.6	5.0	29.4	29.4	2.4	19.8		1.6	19.0	
Effective Green, g (s)	3.2	27.6	27.6	5.0	29.4	29.4	2.4	19.8		1.6	19.0	
Actuated g/C Ratio	0.05	0.39	0.39	0.07	0.42	0.42	0.03	0.28		0.02	0.27	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	81	1395	624	245	1486	665	118	465		78	466	
v/s Ratio Prot	0.04	0.32		c0.05	c0.37		c0.02	0.04		0.01	c0.14	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.90	0.80	0.01	0.72	0.89	0.01	0.50	0.15		0.29	0.52	
Uniform Delay, d1	33.2	18.8	12.9	31.8	18.8	11.8	33.2	18.8		33.6	21.6	
Progression Factor	1.00	1.00	1.00	1.31	0.58	0.88	1.00	1.00		1.00	1.00	
Incremental Delay, d2	67.6	3.3	0.0	6.4	4.5	0.0	3.3	0.7		2.1	4.1	
Delay (s)	100.8	22.1	12.9	47.9	15.4	10.5	36.5	19.5		35.8	25.7	
Level of Service	F	C	B	D	B	B	D	B		D	C	
Approach Delay (s)		26.8			19.2			24.1			26.4	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1113	104	110	1205	99	134	32	308	171	67	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1610		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1610		3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	1210	113	120	1310	108	146	35	335	186	73	29
RTOR Reduction (vph)	0	0	64	0	0	36	0	106	0	0	0	22
Lane Group Flow (vph)	8	1210	49	120	1310	72	146	264	0	186	73	7
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	30.2	30.2	3.2	32.6	32.6	4.0	15.2		5.4	16.6	16.6
Effective Green, g (s)	0.8	30.2	30.2	3.2	32.6	32.6	4.0	15.2		5.4	16.6	16.6
Actuated g/C Ratio	0.01	0.43	0.43	0.05	0.47	0.47	0.06	0.22		0.08	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	39	1527	683	157	1648	737	196	350		265	442	375
v/s Ratio Prot	0.00	0.34		c0.03	c0.37		0.04	c0.16		c0.05	0.04	
v/s Ratio Perm			0.03			0.05						0.00
v/c Ratio	0.21	0.79	0.07	0.76	0.79	0.10	0.74	0.75		0.70	0.17	0.02
Uniform Delay, d1	34.3	17.2	11.7	33.0	15.9	10.5	32.5	25.6		31.5	21.2	20.5
Progression Factor	1.11	0.80	1.40	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.9	2.1	0.0	19.6	2.7	0.1	14.2	13.9		8.1	0.8	0.1
Delay (s)	40.1	15.8	16.3	52.6	18.6	10.5	46.7	39.6		39.7	22.0	20.5
Level of Service	D	B	B	D	B	B	D	D		D	C	C
Approach Delay (s)		16.0			20.7			41.6			33.3	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	255	1186	169	90	970	268	150	286	147	487	397	273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	277	1289	184	98	1054	291	163	311	160	529	432	297
RTOR Reduction (vph)	0	0	129	0	0	216	0	0	123	0	0	130
Lane Group Flow (vph)	277	1289	55	98	1054	75	163	311	37	529	432	167
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	19.6	19.6	3.2	16.8	16.8	4.8	15.2	15.2	11.0	21.4	21.4
Effective Green, g (s)	6.0	19.6	19.6	3.2	16.8	16.8	4.8	15.2	15.2	11.0	21.4	21.4
Actuated g/C Ratio	0.09	0.30	0.30	0.05	0.26	0.26	0.07	0.23	0.23	0.17	0.33	0.33
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	317	1533	477	169	1314	409	254	828	370	581	1165	521
v/s Ratio Prot	c0.08	c0.25		0.03	0.21		0.05	0.09		c0.15	c0.12	
v/s Ratio Perm			0.04			0.05			0.02			0.11
v/c Ratio	0.87	0.84	0.12	0.58	0.80	0.18	0.64	0.38	0.10	0.91	0.37	0.32
Uniform Delay, d1	29.1	21.2	16.4	30.2	22.5	18.8	29.3	20.9	19.5	26.5	16.7	16.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.3	4.4	0.1	4.8	3.6	0.2	5.5	1.3	0.5	18.5	0.9	1.6
Delay (s)	51.5	25.6	16.5	35.0	26.2	19.0	34.7	22.2	20.1	45.0	17.6	18.0
Level of Service	D	C	B	D	C	B	C	C	C	D	B	B
Approach Delay (s)		28.7			25.3			24.9			29.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1827	1	2	1330	56	0	1	0	56	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor		0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt		1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)		5085	1583	3433	5085	1583		3539		3433		1583
Flt Permitted		1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (perm)		5085	1583	3433	5085	1583		3539		3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1986	1	2	1446	61	0	1	0	61	0	1
RTOR Reduction (vph)	0	0	1	0	0	24	0	0	0	0	0	1
Lane Group Flow (vph)	0	1986	0	2	1446	37	0	1	0	61	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)		44.0	44.0	1.2	49.2	49.2		23.6		5.2		23.3
Effective Green, g (s)		44.0	44.0	1.2	49.2	49.2		23.6		5.2		23.3
Actuated g/C Ratio		0.49	0.49	0.01	0.55	0.55		0.26		0.06		0.26
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)		2486	774	46	2780	865		928		198		410
v/s Ratio Prot		c0.39		0.00	c0.28			c0.00		c0.02		
v/s Ratio Perm			0.00			0.02						0.00
v/c Ratio		0.80	0.00	0.04	0.52	0.04		0.00		0.31		0.00
Uniform Delay, d1		19.3	11.8	43.8	12.9	9.5		24.5		40.7		24.7
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2		1.9	0.0	0.4	0.2	0.0		0.0		0.9		0.0
Delay (s)		21.2	11.8	44.2	13.1	9.5		24.5		41.6		24.7
Level of Service		C	B	D	B	A		C		D		C
Approach Delay (s)		21.2			13.0			24.5			41.3	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	1633	196	370	1147	25	155	98	421	66	94	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3482		1770	3528		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3482		1770	3528		1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	80	1775	213	402	1247	27	168	107	458	72	102	49
RTOR Reduction (vph)	0	7	0	0	1	0	0	0	216	0	0	42
Lane Group Flow (vph)	80	1981	0	402	1273	0	168	107	242	72	102	7
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	8.7	55.8		22.0	69.1		10.0	21.2	21.2	5.0	16.2	16.2
Effective Green, g (s)	8.7	55.8		22.0	69.1		10.0	21.2	21.2	5.0	16.2	16.2
Actuated g/C Ratio	0.07	0.46		0.18	0.58		0.08	0.18	0.18	0.04	0.13	0.13
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	128	1619		325	2032		148	329	280	74	252	214
v/s Ratio Prot	0.05	c0.57		c0.23	0.36		c0.09	0.06		0.04	0.05	
v/s Ratio Perm									c0.15			0.00
v/c Ratio	0.62	1.22		1.24	0.63		1.14	0.33	0.87	0.97	0.40	0.03
Uniform Delay, d1	54.1	32.1		49.0	16.9		55.0	43.2	48.0	57.4	47.5	45.1
Progression Factor	1.00	1.00		1.19	0.47		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.2	106.2		124.6	0.4		114.9	2.6	28.2	94.8	4.8	0.3
Delay (s)	63.2	138.3		183.1	8.3		169.9	45.8	76.2	152.2	52.3	45.3
Level of Service	E	F		F	A		F	D	E	F	D	D
Approach Delay (s)		135.4			50.3			93.2			83.0	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	96.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	2176	90	228	1338	248	142	137	263	222	159	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	2365	98	248	1454	270	154	149	286	241	173	163
RTOR Reduction (vph)	0	0	7	0	0	91	0	0	80	0	0	107
Lane Group Flow (vph)	129	2365	91	248	1454	179	154	149	206	241	173	56
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.8	72.0	72.0	7.0	71.2	71.2	7.0	18.0	18.0	7.0	18.0	18.0
Effective Green, g (s)	7.8	72.0	72.0	7.0	71.2	71.2	7.0	18.0	18.0	7.0	18.0	18.0
Actuated g/C Ratio	0.06	0.60	0.60	0.06	0.59	0.59	0.06	0.15	0.15	0.06	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	223	2123	950	200	2100	939	200	531	237	200	531	237
v/s Ratio Prot	0.04	c0.67		c0.07	0.41		0.04	0.04		c0.07	0.05	
v/s Ratio Perm			0.06			0.11			c0.13			0.04
v/c Ratio	0.58	1.11	0.10	1.24	0.69	0.19	0.77	0.28	0.87	1.20	0.33	0.24
Uniform Delay, d1	54.5	24.0	10.2	56.5	16.8	11.2	55.7	45.3	49.9	56.5	45.6	44.9
Progression Factor	1.23	0.82	0.30	1.01	0.52	0.49	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	52.0	0.0	133.8	0.7	0.1	16.6	1.3	32.6	129.8	1.6	2.3
Delay (s)	67.5	71.7	3.0	191.1	9.4	5.6	72.3	46.6	82.4	186.3	47.2	47.3
Level of Service	E	E	A	F	A	A	E	D	F	F	D	D
Approach Delay (s)		68.9			31.8			70.7			105.3	
Approach LOS		E			C			E			F	

Intersection Summary			
HCM Average Control Delay	60.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	2621	176	335	1890	130	91	77	306	250	103	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	2849	191	364	2054	141	99	84	333	272	112	52
RTOR Reduction (vph)	0	0	49	0	0	36	0	0	94	0	0	40
Lane Group Flow (vph)	67	2849	142	364	2054	105	99	84	239	272	112	12
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	58.8	58.8	11.0	65.8	65.8	6.9	18.2	18.2	16.0	27.3	27.3
Effective Green, g (s)	4.0	58.8	58.8	11.0	65.8	65.8	6.9	18.2	18.2	16.0	27.3	27.3
Actuated g/C Ratio	0.03	0.49	0.49	0.09	0.55	0.55	0.06	0.15	0.15	0.13	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2492	776	315	2788	868	197	537	240	236	1157	360
v/s Ratio Prot	0.02	c0.56		c0.11	0.40		0.03	0.02		c0.15	0.02	
v/s Ratio Perm			0.09			0.07			c0.15			0.01
v/c Ratio	0.59	1.14	0.18	1.16	0.74	0.12	0.50	0.16	1.00	1.15	0.10	0.03
Uniform Delay, d1	57.2	30.6	17.1	54.5	20.5	13.1	54.9	44.2	50.9	52.0	36.6	36.1
Progression Factor	1.01	0.83	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	65.0	0.0	99.8	1.0	0.1	2.0	0.6	56.9	106.0	0.2	0.2
Delay (s)	58.3	90.5	16.8	154.3	21.6	13.2	56.9	44.9	107.7	158.0	36.8	36.2
Level of Service	E	F	B	F	C	B	E	D	F	F	D	D
Approach Delay (s)		85.3			40.0			87.7			112.3	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	69.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	943	2148	108	247	1284	375	153	800	219	173	728	783
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1025	2335	117	268	1396	408	166	870	238	188	791	851
RTOR Reduction (vph)	0	0	42	0	0	82	0	0	123	0	0	1
Lane Group Flow (vph)	1025	2335	75	268	1396	326	166	870	115	188	791	850
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	29.0	48.0	48.0	8.0	27.0	27.0	5.0	21.0	21.0	7.0	23.0	52.0
Effective Green, g (s)	29.0	48.0	48.0	8.0	27.0	27.0	5.0	21.0	21.0	7.0	23.0	52.0
Actuated g/C Ratio	0.29	0.48	0.48	0.08	0.27	0.27	0.05	0.21	0.21	0.07	0.23	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	996	2441	760	275	1373	427	172	1068	332	240	814	886
v/s Ratio Prot	c0.30	c0.46		0.08	0.27		0.05	0.17		c0.05	0.22	c0.28
v/s Ratio Perm			0.05			0.21			0.07			0.26
v/c Ratio	1.03	0.96	0.10	0.97	1.02	0.76	0.97	0.81	0.35	0.78	0.97	0.96
Uniform Delay, d1	35.5	25.0	14.2	45.9	36.5	33.6	47.4	37.6	33.6	45.8	38.2	23.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.2	9.9	0.1	46.9	28.5	7.9	57.8	6.8	2.8	15.3	25.4	20.7
Delay (s)	71.7	34.9	14.2	92.8	65.0	41.5	105.3	44.5	36.5	61.0	63.6	43.7
Level of Service	E	C	B	F	E	D	F	D	D	E	E	D
Approach Delay (s)		45.1			64.0			50.9			54.1	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	52.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	229	1953	139	109	1583	238	126	255	123	219	383	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	249	2123	151	118	1721	259	137	277	134	238	416	242
RTOR Reduction (vph)	0	0	66	0	0	97	0	0	93	0	0	97
Lane Group Flow (vph)	249	2123	85	118	1721	162	137	277	41	238	416	145
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	33.6	33.6	3.2	29.8	29.8	5.0	16.2	16.2	6.0	17.2	17.2
Effective Green, g (s)	7.0	33.6	33.6	3.2	29.8	29.8	5.0	16.2	16.2	6.0	17.2	17.2
Actuated g/C Ratio	0.09	0.45	0.45	0.04	0.40	0.40	0.07	0.22	0.22	0.08	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	320	2278	709	146	2020	629	229	1098	342	275	1166	363
v/s Ratio Prot	c0.07	c0.42		0.03	0.34		0.04	0.05		c0.07	0.08	
v/s Ratio Perm			0.05			0.10			0.03			c0.09
v/c Ratio	0.78	0.93	0.12	0.81	0.85	0.26	0.60	0.25	0.12	0.87	0.36	0.40
Uniform Delay, d1	33.2	19.6	12.1	35.6	20.6	15.2	34.0	24.4	23.7	34.1	24.3	24.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.3	7.7	0.1	26.9	3.7	0.2	4.2	0.6	0.7	23.5	0.9	3.3
Delay (s)	44.5	27.3	12.1	62.5	24.3	15.4	38.2	24.9	24.4	57.6	25.1	27.8
Level of Service	D	C	B	E	C	B	D	C	C	E	C	C
Approach Delay (s)		28.1			25.3			28.1			34.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	822	365	0	0	540	183
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	893	397	0	0	587	199
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1290		893	893
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1290		893	893
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	42
cM capacity (veh/h)			537		312	340

Direction, Lane #	EB 1	EB 2	NB 1
Volume Total	893	397	786
Volume Left	0	0	587
Volume Right	0	397	199
cSH	1700	1700	324
Volume to Capacity	0.53	0.23	2.43
Queue Length 95th (ft)	0	0	1561
Control Delay (s)	0.0	0.0	675.9
Lane LOS			F
Approach Delay (s)	0.0		675.9
Approach LOS			F

Intersection Summary			
Average Delay	255.9		
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (veh/h)	50	1	330	11	2	397
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	1	359	12	2	432
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			55		784	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			55		784	54
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			77		99	57
cM capacity (veh/h)			1549		278	1013

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SW 1
Volume Total	54	1	359	12	434
Volume Left	0	0	359	0	2
Volume Right	0	1	0	0	432
cSH	1700	1700	1549	1700	1018
Volume to Capacity	0.03	0.00	0.23	0.01	0.43
Queue Length 95th (ft)	0	0	22	0	54
Control Delay (s)	0.0	0.0	8.0	0.0	11.2
Lane LOS			A		B
Approach Delay (s)	0.0		7.8		11.2
Approach LOS					B

Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	11	286	186	41	175	142
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	311	202	45	190	154

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	12	311	247	345
Volume Left (vph)	12	0	0	190
Volume Right (vph)	0	311	45	0
Hadj (s)	0.53	-0.67	-0.07	0.14
Departure Headway (s)	6.6	5.4	5.3	5.3
Degree Utilization, x	0.02	0.46	0.36	0.51
Capacity (veh/h)	515	619	644	646
Control Delay (s)	8.5	11.8	11.2	13.7
Approach Delay (s)	11.7		11.2	13.7
Approach LOS	B		B	B

Intersection Summary			
Delay	12.3		
HCM Level of Service	B		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Polk/Sierra

Cycle (sec):	100	Critical Vol./Cap.(X):	0.511
Loss Time (sec):	0	Average Delay (sec/veh):	12.6
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk						Dante					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	1 0	1	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	52	238	23	60	189	28	54	104	70	40	65	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	52	238	23	60	189	28	54	104	70	40	65	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	57	259	25	65	205	30	59	113	76	43	71	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	259	25	65	205	30	59	113	76	43	71	77
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	57	259	25	65	205	30	59	113	76	43	71	77
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.91	0.09	1.00	1.00	1.00	1.00	0.60	0.40	1.00	1.00	1.00
Final Sat.:	506	506	49	470	507	556	474	318	214	438	467	514
Capacity Analysis Module:												
Vol/Sat:	0.11	0.51	0.51	0.14	0.41	0.05	0.12	0.36	0.36	0.10	0.15	0.15
Crit Moves:		****			****				****		****	
Delay/Veh:	10.3	14.9	14.9	11.1	13.8	9.1	10.8	12.3	12.3	11.1	11.0	10.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.3	14.9	14.9	11.1	13.8	9.1	10.8	12.3	12.3	11.1	11.0	10.2
LOS by Move:	B	B	B	B	B	A	B	B	B	B	B	B
ApproachDel:		14.1			12.7			11.9			10.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		14.1			12.7			11.9			10.7	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.1	0.9	0.9	0.1	0.6	0.1	0.1	0.5	0.5	0.1	0.2	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	67	4	7	10	4	190	8	449	0	62	221	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	73	4	8	11	4	207	9	488	0	67	240	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			4			4						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	753	891	251	886	902	244	262			488		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	753	891	251	886	902	244	262			488		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	64	98	99	95	98	73	99			94		
cM capacity (veh/h)	203	261	749	221	257	757	1299			1071		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	73	12	11	211	9	244	244	0	67	262
Volume Left	73	0	11	0	9	0	0	0	67	0
Volume Right	0	8	0	207	0	0	0	0	0	22
cSH	203	717	221	772	1299	1700	1700	1700	1071	1700
Volume to Capacity	0.36	0.02	0.05	0.27	0.01	0.14	0.14	0.00	0.06	0.15
Queue Length 95th (ft)	38	1	4	28	1	0	0	0	5	0
Control Delay (s)	32.3	13.2	22.1	11.7	7.8	0.0	0.0	0.0	8.6	0.0
Lane LOS	D	B	C	B	A				A	
Approach Delay (s)	29.6		12.2		0.1				1.8	
Approach LOS	D		B							

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	44	144	542	120	103	209
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	157	589	130	112	227

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	204	589	130	112	227
Volume Left (vph)	0	589	0	112	0
Volume Right (vph)	157	0	0	0	227
Hadj (s)	-0.43	0.53	0.03	0.53	-0.67
Departure Headway (s)	5.9	6.4	5.9	7.4	6.2
Degree Utilization, x	0.33	1.05	0.21	0.23	0.39
Capacity (veh/h)	594	552	594	475	566
Control Delay (s)	11.8	76.2	9.3	11.4	12.0
Approach Delay (s)	11.8	64.1		11.8	
Approach LOS	B	F		B	

Intersection Summary			
Delay	41.6		
HCM Level of Service	E		
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	67	187	8	4	125	229	2	1	4	509	6	182
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	73	203	9	4	136	249	2	1	4	553	7	198

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	174	110	140	249	8	758
Volume Left (vph)	73	0	4	0	2	553
Volume Right (vph)	0	9	0	249	4	198
Hadj (s)	0.24	-0.02	0.05	-0.67	-0.25	0.02
Departure Headway (s)	7.4	7.1	7.0	6.3	6.9	5.8
Degree Utilization, x	0.36	0.22	0.27	0.44	0.01	1.21
Capacity (veh/h)	481	498	501	561	480	619
Control Delay (s)	13.2	10.8	11.5	13.0	10.0	130.0
Approach Delay (s)	12.3		12.4		10.0	130.0
Approach LOS	B		B		B	F

Intersection Summary			
Delay	74.3		
HCM Level of Service	F		
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.436
Loss Time (sec):	0	Average Delay (sec/veh):	12.1
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk									Dante					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	185	12	20	103	14	52	19	177	40	28	289	33
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	185	12	20	103	14	52	19	177	40	28	289	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	201	13	22	112	15	57	21	192	43	30	314	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	201	13	22	112	15	57	21	192	43	30	314	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	201	13	22	112	15	57	21	192	43	30	314	36
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	461	485	536	445	469	519	455	979	538	477	1031	567
Capacity Analysis Module:												
Vol/Sat:	0.44	0.03	0.04	0.25	0.03	0.11	0.05	0.20	0.08	0.06	0.30	0.06
Crit Moves:	****			****				****			****	
Delay/Veh:	15.4	9.8	9.2	12.7	10.0	9.8	10.5	11.2	9.4	10.3	12.1	9.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.4	9.8	9.2	12.7	10.0	9.8	10.5	11.2	9.4	10.3	12.1	9.1
LOS by Move:	C	A	A	B	B	A	B	B	A	B	B	A
ApproachDel:	14.5			11.6			10.8			11.7		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	14.5			11.6			10.8			11.7		
LOS by Appr:	B			B			B			B		
AllWayAvgQ:	0.7	0.0	0.0	0.3	0.0	0.1	0.0	0.2	0.1	0.1	0.4	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	894	81	104	545	95	49	432	82	86	461	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	972	88	113	592	103	53	470	89	93	501	75
RTOR Reduction (vph)	0	0	40	0	15	0	0	0	46	0	0	43
Lane Group Flow (vph)	185	972	48	113	680	0	53	470	43	93	501	32
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.9	47.0	47.0	6.0	39.1		3.2	16.0	16.0	5.0	17.8	17.8
Effective Green, g (s)	13.9	47.0	47.0	6.0	39.1		3.2	16.0	16.0	5.0	17.8	17.8
Actuated g/C Ratio	0.15	0.52	0.52	0.07	0.43		0.04	0.18	0.18	0.06	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	273	973	827	118	1504		63	629	281	98	700	313
v/s Ratio Prot	0.10	c0.52		c0.06	0.20		0.03	0.13		c0.05	c0.14	
v/s Ratio Perm			0.03						0.03			0.02
v/c Ratio	0.68	1.00	0.06	0.96	0.45		0.84	0.75	0.15	0.95	0.72	0.10
Uniform Delay, d1	35.9	21.5	10.6	41.9	17.9		43.1	35.1	31.3	42.4	33.7	29.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	28.4	0.0	68.8	0.2		60.8	4.8	0.3	73.5	3.5	0.1
Delay (s)	42.5	49.9	10.6	110.7	18.1		104.0	39.9	31.5	115.9	37.2	29.7
Level of Service	D	D	B	F	B		F	D	C	F	D	C
Approach Delay (s)		46.0			31.1			44.2			47.3	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	42.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	59	29	11	4	18	58	8	307	6	38	163	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	64	32	12	4	20	63	9	334	7	41	177	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	684	617	177	639	638	334	204			340		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	684	617	177	639	638	334	204			340		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	79	92	99	99	95	91	99			97		
cM capacity (veh/h)	308	389	866	349	379	708	1367			1219		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	108	87	342	7	218	27
Volume Left	64	4	9	0	41	0
Volume Right	12	63	0	7	0	27
cSH	355	568	1367	1700	1219	1700
Volume to Capacity	0.30	0.15	0.01	0.00	0.03	0.02
Queue Length 95th (ft)	31	13	0	0	3	0
Control Delay (s)	19.5	12.5	0.3	0.0	1.8	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	19.5	12.5	0.2		1.6	
Approach LOS	C	B				

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	896	487	571	846	65	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	974	529	621	920	71	290
RTOR Reduction (vph)	0	179	0	0	0	249
Lane Group Flow (vph)	974	350	621	920	71	41
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	55.0	55.0	36.0	95.0	17.0	17.0
Effective Green, g (s)	55.0	55.0	36.0	95.0	17.0	17.0
Actuated g/C Ratio	0.46	0.46	0.30	0.79	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	854	726	531	2802	251	224
v/s Ratio Prot	c0.52		c0.35	0.26	c0.04	
v/s Ratio Perm		0.22				0.03
v/c Ratio	1.14	0.48	1.17	0.33	0.28	0.18
Uniform Delay, d1	32.5	22.6	42.0	3.5	46.0	45.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	77.2	0.5	95.0	0.1	2.8	1.8
Delay (s)	109.7	23.1	137.0	3.6	48.9	47.2
Level of Service	F	C	F	A	D	D
Approach Delay (s)	79.2			57.4	47.5	
Approach LOS	E			E	D	

Intersection Summary			
HCM Average Control Delay	66.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (vph)	112	1033	1157	259	145	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	1123	1258	282	158	276
RTOR Reduction (vph)	0	0	0	135	0	164
Lane Group Flow (vph)	122	1123	1258	147	158	112
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	5.6	46.2	36.6	36.6	15.8	15.8
Effective Green, g (s)	5.6	46.2	36.6	36.6	15.8	15.8
Actuated g/C Ratio	0.08	0.66	0.52	0.52	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	142	1230	1850	828	400	357
v/s Ratio Prot	0.07	c0.60	0.36		c0.09	
v/s Ratio Perm				0.09		0.07
v/c Ratio	0.86	0.91	0.68	0.18	0.40	0.31
Uniform Delay, d1	31.8	10.2	12.4	8.8	23.0	22.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	37.1	10.4	1.0	0.1	2.9	2.3
Delay (s)	68.9	20.6	13.4	8.9	25.9	24.9
Level of Service	E	C	B	A	C	C
Approach Delay (s)		25.3	12.6		25.3	
Approach LOS		C	B		C	

Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	36	1004	38	370	1126	161	213	379	30	17	301	526
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1091	41	402	1224	175	232	412	33	18	327	572
RTOR Reduction (vph)	0	0	21	0	0	78	0	0	24	0	0	301
Lane Group Flow (vph)	39	1091	20	402	1224	97	232	412	9	18	327	271
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	3.6	31.6	31.6	22.0	50.0	50.0	13.0	28.4	28.4	2.0	17.4	17.4
Effective Green, g (s)	3.6	31.6	31.6	22.0	50.0	50.0	13.0	28.4	28.4	2.0	17.4	17.4
Actuated g/C Ratio	0.04	0.32	0.32	0.22	0.50	0.50	0.13	0.28	0.28	0.02	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	64	1118	500	389	1770	792	230	1005	450	35	616	275
v/s Ratio Prot	0.02	c0.31		c0.23	0.35		c0.13	0.12		0.01	0.09	
v/s Ratio Perm			0.01			0.06			0.01			c0.17
v/c Ratio	0.61	0.98	0.04	1.03	0.69	0.12	1.01	0.41	0.02	0.51	0.53	0.99
Uniform Delay, d1	47.5	33.8	23.7	39.0	19.1	13.3	43.5	29.0	25.8	48.5	37.6	41.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.3	21.1	0.0	54.5	1.2	0.1	61.6	1.2	0.1	12.2	3.3	51.0
Delay (s)	62.8	54.9	23.7	93.5	20.3	13.4	105.1	30.2	25.9	60.7	40.8	92.2
Level of Service	E	D	C	F	C	B	F	C	C	E	D	F
Approach Delay (s)		54.1			36.0			55.7			73.3	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM Average Control Delay	51.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	1191	73	121	1127	94	170	230	64	235	684	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	1295	79	132	1225	102	185	250	70	255	743	158
RTOR Reduction (vph)	0	0	55	0	0	71	0	0	51	0	0	112
Lane Group Flow (vph)	112	1295	24	132	1225	31	185	250	19	255	743	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	18.0	18.0	3.2	18.0	18.0	5.3	16.5	16.5	6.3	17.5	17.5
Effective Green, g (s)	3.2	18.0	18.0	3.2	18.0	18.0	5.3	16.5	16.5	6.3	17.5	17.5
Actuated g/C Ratio	0.05	0.30	0.30	0.05	0.30	0.30	0.09	0.28	0.28	0.10	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1526	475	183	1526	475	303	973	435	360	1032	462
v/s Ratio Prot	0.03	c0.25		c0.04	0.24		0.05	0.07		c0.07	c0.21	
v/s Ratio Perm			0.01			0.02			0.01			0.03
v/c Ratio	0.61	0.85	0.05	0.72	0.80	0.06	0.61	0.26	0.04	0.71	0.72	0.10
Uniform Delay, d1	27.8	19.7	14.9	28.0	19.4	15.0	26.4	17.0	16.0	26.0	19.1	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	4.6	0.0	13.1	3.2	0.1	3.6	0.6	0.2	6.3	4.3	0.4
Delay (s)	33.7	24.3	15.0	41.1	22.5	15.0	30.0	17.6	16.2	32.2	23.4	15.9
Level of Service	C	C	B	D	C	B	C	B	B	C	C	B
Approach Delay (s)		24.5			23.7			21.9			24.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	247	1432	101	144	943	59	181	408	384	279	509	403
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	1557	110	157	1025	64	197	443	417	303	553	438
RTOR Reduction (vph)	0	0	64	0	0	46	0	0	110	0	0	110
Lane Group Flow (vph)	268	1557	46	157	1025	18	197	443	307	303	553	328
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	23.0	23.0	4.0	20.0	20.0	5.0	20.0	20.0	7.0	22.0	22.0
Effective Green, g (s)	7.0	23.0	23.0	4.0	20.0	20.0	5.0	20.0	20.0	7.0	22.0	22.0
Actuated g/C Ratio	0.10	0.33	0.33	0.06	0.29	0.29	0.07	0.29	0.29	0.10	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1671	520	196	1453	452	245	1011	452	343	1112	498
v/s Ratio Prot	c0.08	c0.31		0.05	0.20		0.06	0.13		c0.09	0.16	
v/s Ratio Perm			0.03			0.01			0.19			c0.21
v/c Ratio	0.78	0.93	0.09	0.80	0.71	0.04	0.80	0.44	0.68	0.88	0.50	0.66
Uniform Delay, d1	30.8	22.7	16.3	32.6	22.4	18.1	32.0	20.4	22.2	31.1	19.5	20.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.0	9.9	0.1	20.5	1.6	0.0	17.2	1.4	8.0	22.5	1.6	6.7
Delay (s)	41.8	32.6	16.3	53.1	23.9	18.1	49.2	21.8	30.1	53.6	21.1	27.5
Level of Service	D	C	B	D	C	B	D	C	C	D	C	C
Approach Delay (s)		33.0			27.3			30.2			30.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	1578	146	155	1065	67	200	538	266	148	419	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	1715	159	168	1158	73	217	585	289	161	455	172
RTOR Reduction (vph)	0	0	100	0	0	47	0	0	113	0	0	113
Lane Group Flow (vph)	133	1715	59	168	1158	26	217	585	176	161	455	59
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	23.8	23.8	4.0	23.8	23.8	5.0	17.0	17.0	5.0	17.0	17.0
Effective Green, g (s)	4.0	23.8	23.8	4.0	23.8	23.8	5.0	17.0	17.0	5.0	17.0	17.0
Actuated g/C Ratio	0.06	0.36	0.36	0.06	0.36	0.36	0.08	0.26	0.26	0.08	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	209	1839	573	209	1839	573	261	914	409	261	914	409
v/s Ratio Prot	0.04	c0.34		c0.05	0.23		c0.06	c0.17		0.05	0.13	
v/s Ratio Perm			0.04			0.02			0.11			0.04
v/c Ratio	0.64	0.93	0.10	0.80	0.63	0.05	0.83	0.64	0.43	0.62	0.50	0.14
Uniform Delay, d1	30.2	20.2	13.9	30.5	17.4	13.6	30.0	21.7	20.4	29.5	20.8	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	9.2	0.1	19.6	0.7	0.0	19.7	3.4	3.3	4.3	1.9	0.7
Delay (s)	36.4	29.4	14.0	50.1	18.0	13.7	49.6	25.1	23.7	33.8	22.7	19.5
Level of Service	D	C	B	D	B	B	D	C	C	C	C	B
Approach Delay (s)		28.7			21.7			29.6			24.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1466	35	137	501	0	20	0	403	161	27	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.89	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3151	
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1274		1583	1770	3151	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1593	38	149	545	0	22	0	438	175	29	79
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	155	0	59	0
Lane Group Flow (vph)	0	1593	27	149	545	0	22	0	283	175	49	0
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		35.8	35.8	8.0	47.8		19.0		19.0	19.0	19.0	
Effective Green, g (s)		35.8	35.8	8.0	47.8		19.0		19.0	19.0	19.0	
Actuated g/C Ratio		0.48	0.48	0.11	0.64		0.25		0.25	0.25	0.25	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1694	758	189	2262		324		402	450	800	
v/s Ratio Prot		c0.45		c0.08	0.15						0.02	
v/s Ratio Perm			0.02				0.02		c0.18	0.10		
v/c Ratio		0.94	0.04	0.79	0.24		0.07		0.70	0.39	0.06	
Uniform Delay, d1		18.5	10.3	32.6	5.8		21.2		25.3	23.1	21.1	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		10.8	0.0	19.2	0.1		0.1		5.5	2.5	0.1	
Delay (s)		29.3	10.4	51.8	5.8		21.3		30.9	25.6	21.3	
Level of Service		C	B	D	A		C		C	C	C	
Approach Delay (s)		28.8			15.7			30.4			24.0	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	344	1103	0	0	537	295	262	15	487	179	0	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.87	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1473	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.57		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1473	1504	2054		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	374	1199	0	0	584	321	285	16	529	195	0	228
RTOR Reduction (vph)	0	0	0	0	0	184	0	80	80	0	0	187
Lane Group Flow (vph)	374	1199	0	0	584	137	256	208	206	195	0	41
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	21.0	41.6			16.6	16.6	19.0	19.0	19.0	16.0		16.0
Effective Green, g (s)	21.0	41.6			16.6	16.6	19.0	19.0	19.0	16.0		16.0
Actuated g/C Ratio	0.24	0.47			0.19	0.19	0.21	0.21	0.21	0.18		0.18
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	420	1662			663	297	360	316	323	371		286
v/s Ratio Prot	c0.21	0.34			c0.17		c0.15	0.14				
v/s Ratio Perm						0.09			0.14	c0.09		0.03
v/c Ratio	0.89	0.72			0.88	0.46	0.71	0.66	0.64	0.53		0.14
Uniform Delay, d1	32.7	18.9			35.0	32.0	32.3	31.8	31.7	32.9		30.5
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	20.3	1.6			13.0	1.1	11.3	10.3	9.3	5.2		1.1
Delay (s)	53.0	20.4			48.1	33.1	43.6	42.1	40.9	38.1		31.6
Level of Service	D	C			D	C	D	D	D	D		C
Approach Delay (s)		28.2			42.8			42.2			34.6	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	35.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	88.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	95	35	14	400	1055	133
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	38	15	435	1147	145

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	141	15	435	1147	145
Volume Left (vph)	103	0	0	1147	0
Volume Right (vph)	0	0	435	0	145
Hadj (s)	0.18	0.03	-0.67	0.53	-0.67
Departure Headway (s)	7.2	6.9	6.2	6.9	5.7
Degree Utilization, x	0.28	0.03	0.74	2.19	0.23
Capacity (veh/h)	487	512	573	534	619
Control Delay (s)	13.0	8.9	23.8	554.4	9.1
Approach Delay (s)	13.0	23.3		493.4	
Approach LOS	B	C		F	

Intersection Summary			
Delay	344.9		
HCM Level of Service	F		
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	45	74	0	493	1185	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	80	0	536	1288	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1082	
pX, platoon unblocked	0.62	0.62	0.62			
vC, conflicting volume	1824	1288	1288			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2021	1159	1159			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	46	100			
cM capacity (veh/h)	40	148	375			

Direction, Lane #	SE 1	NE 1	SW 1
Volume Total	129	536	1288
Volume Left	49	0	0
Volume Right	80	0	0
cSH	105	1700	1700
Volume to Capacity	1.23	0.32	0.76
Queue Length 95th (ft)	217	0	0
Control Delay (s)	177.5	0.0	0.0
Lane LOS	F		
Approach Delay (s)	177.5	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	11.8		
Intersection Capacity Utilization	124.7%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	85	891	545	0	0	1107
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	92	968	592	0	0	1203
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						591
pX, platoon unblocked	0.65					
vC, conflicting volume	1796	592			592	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1953	592			592	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	0			100	
cM capacity (veh/h)	46	506			983	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	1061	592	1203
Volume Left	92	0	0
Volume Right	968	0	0
cSH	270	1700	1700
Volume to Capacity	3.93	0.35	0.71
Queue Length 95th (ft)	Err	0	0
Control Delay (s)	Err	0.0	0.0
Lane LOS	F		
Approach Delay (s)	Err	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	3713.5		
Intersection Capacity Utilization	124.7%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	537	200	127	82	193	153	153	1148	75	112	887	442
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	584	217	138	89	210	166	166	1248	82	122	964	480
RTOR Reduction (vph)	0	0	98	0	0	110	0	0	56	0	0	320
Lane Group Flow (vph)	584	217	40	89	210	56	166	1248	26	122	964	160
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.8	21.6	21.6	4.0	10.8	10.8	8.4	23.6	23.6	9.8	25.0	25.0
Effective Green, g (s)	14.8	21.6	21.6	4.0	10.8	10.8	8.4	23.6	23.6	9.8	25.0	25.0
Actuated g/C Ratio	0.20	0.29	0.29	0.05	0.14	0.14	0.11	0.31	0.31	0.13	0.33	0.33
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	677	1019	456	183	510	228	384	1600	498	231	1180	528
v/s Ratio Prot	c0.17	0.06		0.03	c0.06		0.05	0.25		c0.07	c0.27	
v/s Ratio Perm			0.03			0.04			0.02			0.10
v/c Ratio	0.86	0.21	0.09	0.49	0.41	0.24	0.43	0.78	0.05	0.53	0.82	0.30
Uniform Delay, d1	29.1	20.3	19.5	34.5	29.2	28.5	31.1	23.3	17.9	30.4	22.9	18.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.0	0.1	0.1	2.0	0.5	0.6	0.8	3.8	0.2	2.2	6.3	1.5
Delay (s)	40.1	20.4	19.6	36.5	29.8	29.0	31.9	27.2	18.1	32.6	29.2	20.0
Level of Service	D	C	B	D	C	C	C	C	B	C	C	C
Approach Delay (s)		32.5			30.8			27.2			26.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

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                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #1 Weber/Herndon
*******************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: F[100.4]
*******************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  1  1  0  1    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1    0     2     0    0     0     2 1838     3     1 1439     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    1    0     2     0    0     0     2 1838     3     1 1439     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     1    0     2     0    0     0     2 1998     3     1 1564     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    1    0     2     0    0     0     2 1998     3     1 1564     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.8  6.5   6.9   7.5  6.5   6.9   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 2786 3568   999  2570 3572   782  1564 xxxx xxxxx  2001 xxxx xxxxx
Potent Cap.:   15    6   246    13    6   341   428 xxxx xxxxx   290 xxxx xxxxx
Move Cap.:     15    6   246    13    6   341   428 xxxx xxxxx   290 xxxx xxxxx
Volume/Cap:  0.07 0.00  0.01  0.00 0.00  0.00  0.01 xxxx  xxxx  0.00 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  13.5 xxxx xxxxx  17.4 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     B    *     *     C    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx   41 xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.2 xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx  100 xxxxx xxxxx xxxx xxxxx  13.5 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    F     *     *    *     *     B    *     *     *    *     *
ApproachDel:     100.4           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         F                *                *                *
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Note: Queue reported is the number of cars per lane.
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	310	1507	118	2	1311	188	88	11	3	224	10	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	337	1638	128	2	1425	204	96	12	3	243	11	350
RTOR Reduction (vph)	0	0	30	0	0	59	0	0	3	0	0	288
Lane Group Flow (vph)	337	1638	98	2	1425	145	96	12	0	243	11	62
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	22.0	72.4	72.4	0.8	51.2	51.2	16.0	14.8	14.8	16.0	14.8	14.8
Effective Green, g (s)	22.0	72.4	72.4	0.8	51.2	51.2	16.0	14.8	14.8	16.0	14.8	14.8
Actuated g/C Ratio	0.18	0.60	0.60	0.01	0.43	0.43	0.13	0.12	0.12	0.13	0.12	0.12
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	325	2135	955	12	1510	675	236	230	195	236	230	195
v/s Ratio Prot	c0.19	0.46		0.00	c0.40		0.05	0.01		c0.14	0.01	
v/s Ratio Perm			0.06			0.09			0.00			c0.04
v/c Ratio	1.04	0.77	0.10	0.17	0.94	0.21	0.41	0.05	0.00	1.03	0.05	0.32
Uniform Delay, d1	49.0	17.6	10.1	59.3	33.0	21.7	47.7	46.4	46.1	52.0	46.4	48.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	59.8	1.7	0.0	6.5	12.2	0.2	5.1	0.4	0.0	66.5	0.1	1.0
Delay (s)	108.8	19.3	10.1	65.8	45.2	21.9	52.8	46.8	46.1	118.5	46.5	49.0
Level of Service	F	B	B	E	D	C	D	D	D	F	D	D
Approach Delay (s)		33.1			42.3			52.0			76.9	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM Average Control Delay	42.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	123	1375	34	81	1238	27	27	13	52	18	12	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1638		3433	1639	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	1638		3433	1639	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	1495	37	88	1346	29	29	14	57	20	13	52
RTOR Reduction (vph)	0	0	19	0	0	12	0	43	0	0	39	0
Lane Group Flow (vph)	134	1495	18	88	1346	17	29	28	0	20	26	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	7.0	36.0	36.0	3.2	32.2	32.2	1.6	18.2		1.6	18.2	
Effective Green, g (s)	7.0	36.0	36.0	3.2	32.2	32.2	1.6	18.2		1.6	18.2	
Actuated g/C Ratio	0.09	0.48	0.48	0.04	0.43	0.43	0.02	0.24		0.02	0.24	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	165	1699	760	146	1519	680	73	397		73	398	
v/s Ratio Prot	c0.08	c0.42		0.03	0.38		c0.01	c0.02		0.01	0.02	
v/s Ratio Perm			0.01			0.01						
v/c Ratio	0.81	0.88	0.02	0.60	0.89	0.03	0.40	0.07		0.27	0.06	
Uniform Delay, d1	33.4	17.6	10.3	35.3	19.7	12.3	36.2	21.9		36.1	21.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	25.3	5.6	0.0	6.8	6.6	0.0	3.5	0.3		2.0	0.3	
Delay (s)	58.6	23.1	10.3	42.1	26.3	12.4	39.8	22.2		38.2	22.2	
Level of Service	E	C	B	D	C	B	D	C		D	C	
Approach Delay (s)		25.7			27.0			27.3			25.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	1286	143	377	1198	202	136	84	262	210	78	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1651		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1651		3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	1398	155	410	1302	220	148	91	285	228	85	29
RTOR Reduction (vph)	0	0	86	0	0	55	0	131	0	0	0	24
Lane Group Flow (vph)	10	1398	69	410	1302	165	148	245	0	228	85	5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	40.2	40.2	11.0	50.4	50.4	7.7	15.8		7.0	15.1	15.1
Effective Green, g (s)	0.8	40.2	40.2	11.0	50.4	50.4	7.7	15.8		7.0	15.1	15.1
Actuated g/C Ratio	0.01	0.45	0.45	0.12	0.56	0.56	0.09	0.18		0.08	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	31	1581	707	420	1982	886	294	290		267	313	266
v/s Ratio Prot	0.00	c0.40		c0.12	0.37		0.04	c0.15		c0.07	0.05	
v/s Ratio Perm			0.04			0.10						0.00
v/c Ratio	0.32	0.88	0.10	0.98	0.66	0.19	0.50	0.84		0.85	0.27	0.02
Uniform Delay, d1	44.3	22.8	14.4	39.4	13.8	9.7	39.3	35.9		41.0	32.7	31.3
Progression Factor	1.00	1.00	1.00	1.04	0.48	0.15	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.0	6.3	0.1	25.4	0.4	0.1	1.4	24.9		22.4	2.1	0.1
Delay (s)	50.3	29.0	14.5	66.3	7.1	1.6	40.7	60.8		63.3	34.8	31.4
Level of Service	D	C	B	E	A	A	D	E		E	C	C
Approach Delay (s)		27.7			19.0			55.1			53.5	
Approach LOS		C			B			E			D	

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	458	1138	167	102	1258	523	173	547	65	571	494	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	498	1237	182	111	1367	568	188	595	71	621	537	359
RTOR Reduction (vph)	0	0	99	0	0	255	0	0	46	0	0	191
Lane Group Flow (vph)	498	1237	83	111	1367	313	188	595	25	621	537	168
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.0	35.0	35.0	4.8	25.8	25.8	8.7	17.2	17.2	17.0	25.5	25.5
Effective Green, g (s)	14.0	35.0	35.0	4.8	25.8	25.8	8.7	17.2	17.2	17.0	25.5	25.5
Actuated g/C Ratio	0.16	0.39	0.39	0.05	0.29	0.29	0.10	0.19	0.19	0.19	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	534	1978	616	183	1458	454	332	676	303	648	1003	449
v/s Ratio Prot	c0.15	0.24		0.03	c0.27		0.05	c0.17		c0.18	0.15	
v/s Ratio Perm			0.05			0.20			0.02			0.11
v/c Ratio	0.93	0.63	0.13	0.61	0.94	0.69	0.57	0.88	0.08	0.96	0.54	0.37
Uniform Delay, d1	37.5	22.2	17.7	41.7	31.3	28.5	38.8	35.4	29.9	36.1	27.2	25.8
Progression Factor	1.03	0.46	0.32	0.65	1.44	2.79	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.4	0.2	0.0	3.4	7.8	2.6	2.2	15.2	0.5	25.1	2.0	2.4
Delay (s)	50.0	10.5	5.7	30.3	52.9	82.4	41.1	50.6	30.4	61.3	29.3	28.2
Level of Service	D	B	A	C	D	F	D	D	C	E	C	C
Approach Delay (s)		20.3			59.9			46.9			42.1	
Approach LOS		C			E			D			D	

Intersection Summary			
HCM Average Control Delay	41.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1767	1	4	1892	66	2	0	4	66	1	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	1921	1	4	2057	72	2	0	4	72	1	11
RTOR Reduction (vph)	0	0	0	0	0	21	0	3	0	0	0	8
Lane Group Flow (vph)	1	1921	1	4	2057	51	2	1	0	72	1	3
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	1.1	46.4	46.4	1.2	46.5	46.5	5.6	21.1		5.3	20.8	20.8
Effective Green, g (s)	1.1	46.4	46.4	1.2	46.5	46.5	5.6	21.1		5.3	20.8	20.8
Actuated g/C Ratio	0.01	0.52	0.52	0.01	0.52	0.52	0.06	0.23		0.06	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	42	2622	816	46	2627	818	214	705		202	431	366
v/s Ratio Prot	0.00	0.38		c0.00	c0.40		0.00	0.00		c0.02	0.00	
v/s Ratio Perm			0.00			0.03						c0.00
v/c Ratio	0.02	0.73	0.00	0.09	0.78	0.06	0.01	0.00		0.36	0.00	0.01
Uniform Delay, d1	43.9	17.0	10.6	43.9	17.7	10.9	39.6	26.4		40.7	26.6	26.6
Progression Factor	0.84	1.31	1.41	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.7	0.0	0.8	1.6	0.0	0.0	0.0		1.1	0.0	0.0
Delay (s)	37.0	22.9	14.9	44.7	19.2	10.9	39.6	26.4		41.8	26.6	26.7
Level of Service	D	C	B	D	B	B	D	C		D	C	C
Approach Delay (s)		22.9			19.0			30.8			39.6	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	1459	352	484	1650	63	327	95	410	28	84	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3436		1770	3520		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.68	1.00	1.00	0.66	1.00	1.00
Satd. Flow (perm)	1770	3436		1770	3520		1274	1863	1583	1228	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	1586	383	526	1793	68	355	103	446	30	91	66
RTOR Reduction (vph)	0	19	0	0	2	0	0	0	251	0	0	51
Lane Group Flow (vph)	63	1950	0	526	1859	0	355	103	195	30	91	15
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	4.8	48.8		24.0	68.0		25.2	25.2	25.2	25.2	25.2	25.2
Effective Green, g (s)	4.8	48.8		24.0	68.0		25.2	25.2	25.2	25.2	25.2	25.2
Actuated g/C Ratio	0.04	0.44		0.22	0.62		0.23	0.23	0.23	0.23	0.23	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	77	1524		386	2176		292	427	363	281	427	363
v/s Ratio Prot	0.04	c0.57		c0.30	0.53			0.06			0.05	
v/s Ratio Perm							c0.28		0.12	0.02		0.01
v/c Ratio	0.82	1.28		1.36	0.85		1.22	0.24	0.54	0.11	0.21	0.04
Uniform Delay, d1	52.2	30.6		43.0	17.0		42.4	34.6	37.3	33.5	34.4	33.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	46.6	131.0		179.2	3.5		124.2	1.3	5.6	0.8	1.1	0.2
Delay (s)	98.8	161.6		222.2	20.5		166.6	35.9	42.9	34.3	35.5	33.2
Level of Service	F	F		F	C		F	D	D	C	D	C
Approach Delay (s)		159.7			64.9			90.7			34.5	
Approach LOS		F			E			F			C	

Intersection Summary			
HCM Average Control Delay	103.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	113.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	221	1749	124	332	2002	390	191	246	254	278	231	342
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	240	1901	135	361	2176	424	208	267	276	302	251	372
RTOR Reduction (vph)	0	0	12	0	0	96	0	0	112	0	0	95
Lane Group Flow (vph)	240	1901	123	361	2176	328	208	267	164	302	251	277
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	64.0	64.0	13.0	69.0	69.0	7.0	17.0	17.0	10.0	20.0	20.0
Effective Green, g (s)	8.0	64.0	64.0	13.0	69.0	69.0	7.0	17.0	17.0	10.0	20.0	20.0
Actuated g/C Ratio	0.07	0.53	0.53	0.11	0.57	0.57	0.06	0.14	0.14	0.08	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	229	1887	844	372	2035	910	200	501	224	286	590	264
v/s Ratio Prot	0.07	0.54		c0.11	c0.61		0.06	0.08		c0.09	0.07	
v/s Ratio Perm			0.08			0.21			0.10			c0.17
v/c Ratio	1.05	1.01	0.15	0.97	1.07	0.36	1.04	0.53	0.73	1.06	0.43	1.05
Uniform Delay, d1	56.0	28.0	14.2	53.3	25.5	13.7	56.5	47.8	49.3	55.0	44.8	50.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	72.6	22.5	0.1	38.7	41.4	0.2	74.5	4.0	19.1	68.7	2.2	68.9
Delay (s)	128.6	50.5	14.2	92.0	66.9	13.9	131.0	51.8	68.5	123.7	47.1	118.9
Level of Service	F	D	B	F	E	B	F	D	E	F	D	F
Approach Delay (s)		56.6			62.4			79.9			101.0	
Approach LOS		E			E			E			F	

Intersection Summary			
HCM Average Control Delay	67.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	2040	175	305	2684	308	163	143	461	214	151	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	2217	190	332	2917	335	177	155	501	233	164	175
RTOR Reduction (vph)	0	0	63	0	0	62	0	0	106	0	0	56
Lane Group Flow (vph)	108	2217	127	332	2917	273	177	155	395	233	164	119
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	52.0	52.0	12.0	60.0	60.0	10.3	26.0	26.0	14.0	29.7	29.7
Effective Green, g (s)	4.0	52.0	52.0	12.0	60.0	60.0	10.3	26.0	26.0	14.0	29.7	29.7
Actuated g/C Ratio	0.03	0.43	0.43	0.10	0.50	0.50	0.09	0.22	0.22	0.12	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2204	686	343	2543	792	295	767	343	207	1259	392
v/s Ratio Prot	0.03	0.44		c0.10	c0.57		0.05	0.04		c0.13	0.03	
v/s Ratio Perm			0.08			0.17			c0.25			c0.07
v/c Ratio	0.95	1.01	0.19	0.97	1.15	0.34	0.60	0.20	1.15	1.13	0.13	0.30
Uniform Delay, d1	57.9	34.0	20.9	53.8	30.0	18.1	52.9	38.5	47.0	53.0	35.1	36.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	67.1	20.6	0.1	39.6	71.3	0.3	3.4	0.6	96.7	100.4	0.2	2.0
Delay (s)	125.0	54.6	21.1	93.4	101.3	18.4	56.3	39.1	143.7	153.4	35.3	38.7
Level of Service	F	D	C	F	F	B	E	D	F	F	D	D
Approach Delay (s)		55.1			92.8			105.7			84.5	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	81.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	933	1669	66	276	2104	217	172	882	180	309	818	1044
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1014	1814	72	300	2287	236	187	959	196	336	889	1135
RTOR Reduction (vph)	0	0	27	0	0	57	0	0	158	0	0	0
Lane Group Flow (vph)	1014	1814	45	300	2287	179	187	959	38	336	889	1135
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	31.0	57.4	57.4	14.6	41.0	41.0	5.0	23.0	23.0	9.0	27.0	58.0
Effective Green, g (s)	31.0	57.4	57.4	14.6	41.0	41.0	5.0	23.0	23.0	9.0	27.0	58.0
Actuated g/C Ratio	0.26	0.48	0.48	0.12	0.34	0.34	0.04	0.19	0.19	0.08	0.22	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	887	2432	757	418	1737	541	143	975	303	257	796	818
v/s Ratio Prot	0.30	0.36		0.09	c0.45		0.05	0.19		c0.10	0.25	c0.36
v/s Ratio Perm			0.03			0.11			0.02			0.36
v/c Ratio	1.14	0.75	0.06	0.72	1.32	0.33	1.31	0.98	0.12	1.31	1.12	1.39
Uniform Delay, d1	44.5	25.4	16.8	50.7	39.5	29.3	57.5	48.3	40.2	55.5	46.5	31.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	77.8	1.3	0.0	5.8	146.7	0.4	179.7	25.1	0.8	163.5	69.0	181.9
Delay (s)	122.3	26.7	16.8	56.5	186.2	29.7	237.2	73.4	41.0	219.0	115.5	212.9
Level of Service	F	C	B	E	F	C	F	E	D	F	F	F
Approach Delay (s)		59.9			159.3			91.5			177.1	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	123.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	120.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1733	358	179	1563	261	219	613	97	287	798	475
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1884	389	195	1699	284	238	666	105	312	867	516
RTOR Reduction (vph)	0	0	141	0	0	103	0	0	80	0	0	102
Lane Group Flow (vph)	272	1884	248	195	1699	181	238	666	25	312	867	415
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	31.0	31.0	5.0	29.0	29.0	6.0	19.0	19.0	9.0	22.0	22.0
Effective Green, g (s)	7.0	31.0	31.0	5.0	29.0	29.0	6.0	19.0	19.0	9.0	22.0	22.0
Actuated g/C Ratio	0.09	0.39	0.39	0.06	0.36	0.36	0.08	0.24	0.24	0.11	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	300	1970	613	215	1843	574	257	1208	376	386	1398	435
v/s Ratio Prot	c0.08	c0.37		0.06	0.33		0.07	0.13		c0.09	0.17	
v/s Ratio Perm			0.16			0.11			0.02			c0.26
v/c Ratio	0.91	0.96	0.40	0.91	0.92	0.32	0.93	0.55	0.07	0.81	0.62	0.95
Uniform Delay, d1	36.2	23.8	17.8	37.3	24.4	18.4	36.8	26.8	23.6	34.7	25.3	28.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.0	11.6	0.4	36.6	8.2	0.3	36.5	1.8	0.3	11.8	2.1	32.8
Delay (s)	65.1	35.4	18.2	73.9	32.6	18.7	73.3	28.6	24.0	46.4	27.4	61.3
Level of Service	E	D	B	E	C	B	E	C	C	D	C	E
Approach Delay (s)		36.0			34.5			38.6			41.2	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	37.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	559	571	0	0	443	62
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	608	621	0	0	482	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1228		608	608
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1228		608	608
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	86
cM capacity (veh/h)			567		459	496

Direction, Lane #	EB 1	EB 2	NB 1
Volume Total	608	621	549
Volume Left	0	0	482
Volume Right	0	621	67
cSH	1700	1700	483
Volume to Capacity	0.36	0.37	1.14
Queue Length 95th (ft)	0	0	475
Control Delay (s)	0.0	0.0	111.7
Lane LOS			F
Approach Delay (s)	0.0		111.7
Approach LOS			F

Intersection Summary			
Average Delay	34.5		
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (veh/h)	9	2	65	23	2	77
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	2	71	25	2	84
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			12		176	10
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			12		176	10
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		100	92
cM capacity (veh/h)			1607		778	1072

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SW 1
Volume Total	10	2	71	25	86
Volume Left	0	0	71	0	2
Volume Right	0	2	0	0	84
cSH	1700	1700	1607	1700	1099
Volume to Capacity	0.01	0.00	0.04	0.01	0.08
Queue Length 95th (ft)	0	0	3	0	6
Control Delay (s)	0.0	0.0	7.3	0.0	8.7
Lane LOS			A		A
Approach Delay (s)	0.0		5.4		8.7
Approach LOS					A

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	49	89	45	27	90	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	97	49	29	98	60

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	53	97	78	158
Volume Left (vph)	53	0	0	98
Volume Right (vph)	0	97	29	0
Hadj (s)	0.53	-0.67	-0.19	0.16
Departure Headway (s)	5.6	4.4	4.3	4.5
Degree Utilization, x	0.08	0.12	0.09	0.20
Capacity (veh/h)	617	780	803	775
Control Delay (s)	7.9	6.8	7.7	8.6
Approach Delay (s)	7.2		7.7	8.6
Approach LOS	A		A	A

Intersection Summary			
Delay	7.9		
HCM Level of Service	A		
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Polk/Sierra

Cycle (sec):	100	Critical Vol./Cap.(X):	0.581
Loss Time (sec):	0	Average Delay (sec/veh):	13.9
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk								Dante					
Approach:	North Bound			South Bound			East Bound			West Bound				
Movement:	L	T	R	L	T	R	L	T	R	L	T	R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign				
Rights:	Include			Include			Include			Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0		
Lanes:	1 0 0 1 0			1 0 1 0 1			1 0 0 1 0			1 0 1 0 1				
Volume Module:														
Base Vol:	53	276	24	93	294	52	35	51	12	12	66	78		
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Initial Bse:	53	276	24	93	294	52	35	51	12	12	66	78		
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
PHF Volume:	58	300	26	101	320	57	38	55	13	13	72	85		
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0		
Reduced Vol:	58	300	26	101	320	57	38	55	13	13	72	85		
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
FinalVolume:	58	300	26	101	320	57	38	55	13	13	72	85		
Saturation Flow Module:														
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Lanes:	1.00	0.92	0.08	1.00	1.00	1.00	1.00	0.81	0.19	1.00	1.00	1.00		
Final Sat.:	528	536	47	505	550	605	442	389	91	428	456	501		
Capacity Analysis Module:														
Vol/Sat:	0.11	0.56	0.56	0.20	0.58	0.09	0.09	0.14	0.14	0.03	0.16	0.17		
Crit Moves:		****			****				****			****		
Delay/Veh:	10.0	15.6	15.6	11.2	17.2	9.0	10.9	10.6	10.6	10.7	11.2	10.5		
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
AdjDel/Veh:	10.0	15.6	15.6	11.2	17.2	9.0	10.9	10.6	10.6	10.7	11.2	10.5		
LOS by Move:	B	C	C	B	C	A	B	B	B	B	B	B		
ApproachDel:		14.8			14.9			10.7			10.8			
Delay Adj:		1.00			1.00			1.00			1.00			
ApprAdjDel:		14.8			14.9			10.7			10.8			
LOS by Appr:		B			B			B			B			
AllWayAvgQ:	0.1	1.1	1.1	0.2	1.2	0.1	0.1	0.1	0.1	0.0	0.2	0.2		

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	44	3	3	14	5	72	7	293	0	68	391	41
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	3	3	15	5	78	8	318	0	74	425	45
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			4			4						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	811	929	447	910	951	159	470			318		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	811	929	447	910	951	159	470			318		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	79	99	99	93	98	91	99			94		
cM capacity (veh/h)	230	249	559	215	241	858	1088			1238		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	48	7	15	84	8	159	159	0	74	470
Volume Left	48	0	15	0	8	0	0	0	74	0
Volume Right	0	3	0	78	0	0	0	0	0	45
cSH	230	497	215	917	1088	1700	1700	1700	1238	1700
Volume to Capacity	0.21	0.01	0.07	0.09	0.01	0.09	0.09	0.00	0.06	0.28
Queue Length 95th (ft)	19	1	6	8	1	0	0	0	5	0
Control Delay (s)	24.8	15.6	23.0	10.3	8.3	0.0	0.0	0.0	8.1	0.0
Lane LOS	C	C	C	B	A				A	
Approach Delay (s)	23.7		12.3		0.2				1.1	
Approach LOS	C		B							

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	13	39	373	25	105	747
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	42	405	27	114	812

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	57	405	27	114	812
Volume Left (vph)	0	405	0	114	0
Volume Right (vph)	42	0	0	0	812
Hadj (s)	-0.42	0.53	0.03	0.53	-0.67
Departure Headway (s)	6.7	7.2	6.7	6.7	5.5
Degree Utilization, x	0.11	0.81	0.05	0.21	1.25
Capacity (veh/h)	522	498	531	520	659
Control Delay (s)	10.5	32.3	8.8	10.3	141.6
Approach Delay (s)	10.5	30.8		125.4	
Approach LOS	B	D		F	

Intersection Summary			
Delay	91.9		
HCM Level of Service	F		
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	154	175	14	8	185	640	16	19	9	277	13	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	167	190	15	9	201	696	17	21	10	301	14	113

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	263	110	210	696	48	428
Volume Left (vph)	167	0	9	0	17	301
Volume Right (vph)	0	15	0	696	10	113
Hadj (s)	0.35	-0.06	0.05	-0.67	-0.02	0.02
Departure Headway (s)	7.8	7.4	7.1	6.4	8.2	6.7
Degree Utilization, x	0.57	0.23	0.42	1.24	0.11	0.80
Capacity (veh/h)	438	471	496	569	401	524
Control Delay (s)	19.5	11.4	13.9	141.2	12.1	31.7
Approach Delay (s)	17.1		111.7		12.1	31.7
Approach LOS	C		F		B	D

Intersection Summary			
Delay	69.4		
HCM Level of Service	F		
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.482
Loss Time (sec):	0	Average Delay (sec/veh):	12.6
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk						Dante					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1	0 1		1 0 1	0 1		1 0 2	0 1		1 0 2	0 1	
Volume Module:												
Base Vol:	62	7	10	34	15	30	112	498	62	62	296	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	62	7	10	34	15	30	112	498	62	62	296	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	67	8	11	37	16	33	122	541	67	67	322	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	8	11	37	16	33	122	541	67	67	322	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	67	8	11	37	16	33	122	541	67	67	322	53
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	397	417	454	395	416	454	518	1124	622	477	1029	566
Capacity Analysis Module:												
Vol/Sat:	0.17	0.02	0.02	0.09	0.04	0.07	0.24	0.48	0.11	0.14	0.31	0.09
Crit Moves:	****			****				****			****	
Delay/Veh:	12.5	10.6	10.0	11.8	10.8	10.3	11.5	14.4	8.9	11.1	12.3	9.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.5	10.6	10.0	11.8	10.8	10.3	11.5	14.4	8.9	11.1	12.3	9.3
LOS by Move:	B	B	A	B	B	B	B	B	A	B	B	A
ApproachDel:	12.0			11.0			13.4			11.7		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	12.0			11.0			13.4			11.7		
LOS by Appr:	B			B			B			B		
AllWayAvgQ:	0.2	0.0	0.0	0.1	0.0	0.1	0.3	0.8	0.1	0.1	0.4	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	736	80	165	903	72	178	839	163	83	826	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3500		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3500		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	210	800	87	179	982	78	193	912	177	90	898	135
RTOR Reduction (vph)	0	0	39	0	5	0	0	0	39	0	0	36
Lane Group Flow (vph)	210	800	48	179	1055	0	193	912	139	90	898	99
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	15.9	44.0	44.0	11.0	39.1		11.0	33.0	33.0	6.0	28.0	28.0
Effective Green, g (s)	15.9	44.0	44.0	11.0	39.1		11.0	33.0	33.0	6.0	28.0	28.0
Actuated g/C Ratio	0.14	0.40	0.40	0.10	0.36		0.10	0.30	0.30	0.05	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	256	745	633	177	1244		177	1062	475	97	901	403
v/s Ratio Prot	c0.12	c0.43		c0.10	0.30		c0.11	0.26		0.05	c0.25	
v/s Ratio Perm			0.03						0.09			0.06
v/c Ratio	0.82	1.07	0.08	1.01	0.85		1.09	0.86	0.29	0.93	1.00	0.25
Uniform Delay, d1	45.7	33.0	20.4	49.5	32.7		49.5	36.3	29.5	51.8	41.0	32.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.6	54.6	0.1	70.6	5.6		93.8	7.0	0.3	67.5	29.0	0.3
Delay (s)	64.2	87.6	20.5	120.1	38.3		143.3	43.4	29.9	119.3	69.9	32.9
Level of Service	E	F	C	F	D		F	D	C	F	E	C
Approach Delay (s)		77.8			50.1			56.5			69.4	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM Average Control Delay	62.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	37	25	6	4	60	82	12	178	2	68	197	55
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	40	27	7	4	65	89	13	193	2	74	214	60
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	703	584	214	602	641	193	274			196		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	703	584	214	602	641	193	274			196		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	84	93	99	99	82	89	99			95		
cM capacity (veh/h)	259	397	826	369	368	848	1289			1377		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	74	159	207	2	288	60
Volume Left	40	4	13	0	74	0
Volume Right	7	89	0	2	0	60
cSH	319	539	1289	1700	1377	1700
Volume to Capacity	0.23	0.29	0.01	0.00	0.05	0.04
Queue Length 95th (ft)	22	30	1	0	4	0
Control Delay (s)	19.6	14.4	0.6	0.0	2.3	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	19.6	14.4	0.6		1.9	
Approach LOS	C	B				

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	808	275	502	1494	96	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	878	299	546	1624	104	317
RTOR Reduction (vph)	0	112	0	0	0	272
Lane Group Flow (vph)	878	187	546	1624	104	45
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	55.0	55.0	36.0	95.0	17.0	17.0
Effective Green, g (s)	55.0	55.0	36.0	95.0	17.0	17.0
Actuated g/C Ratio	0.46	0.46	0.30	0.79	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	854	726	531	2802	251	224
v/s Ratio Prot	c0.47		c0.31	0.46	c0.06	
v/s Ratio Perm		0.12				0.03
v/c Ratio	1.03	0.26	1.03	0.58	0.41	0.20
Uniform Delay, d1	32.5	20.0	42.0	4.8	47.0	45.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	38.2	0.2	46.5	0.3	5.0	2.0
Delay (s)	70.7	20.1	88.5	5.1	51.9	47.5
Level of Service	E	C	F	A	D	D
Approach Delay (s)	57.8			26.1	48.6	
Approach LOS	E			C	D	

Intersection Summary			
HCM Average Control Delay	38.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (vph)	63	1084	1644	359	328	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	1178	1787	390	357	351
RTOR Reduction (vph)	0	0	0	161	0	99
Lane Group Flow (vph)	68	1178	1787	229	357	252
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	4.8	61.6	52.8	52.8	20.4	20.4
Effective Green, g (s)	4.8	61.6	52.8	52.8	20.4	20.4
Actuated g/C Ratio	0.05	0.68	0.59	0.59	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	94	1275	2076	929	401	359
v/s Ratio Prot	0.04	c0.63	0.50		c0.20	
v/s Ratio Perm				0.14		0.16
v/c Ratio	0.72	0.92	0.86	0.25	0.89	0.70
Uniform Delay, d1	41.9	12.2	15.5	9.0	33.7	32.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.9	11.3	3.9	0.1	24.4	10.9
Delay (s)	65.8	23.4	19.4	9.1	58.1	42.9
Level of Service	E	C	B	A	E	D
Approach Delay (s)		25.8	17.6		50.6	
Approach LOS		C	B		D	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	45	1312	52	434	1743	277	207	270	40	46	583	892
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	1426	57	472	1895	301	225	293	43	50	634	970
RTOR Reduction (vph)	0	0	18	0	0	76	0	0	28	0	0	220
Lane Group Flow (vph)	49	1426	39	472	1895	225	225	293	15	50	634	750
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	3.2	35.8	35.8	21.0	53.6	53.6	11.0	40.9	40.9	6.3	36.2	36.2
Effective Green, g (s)	3.2	35.8	35.8	21.0	53.6	53.6	11.0	40.9	40.9	6.3	36.2	36.2
Actuated g/C Ratio	0.03	0.30	0.30	0.18	0.45	0.45	0.09	0.34	0.34	0.05	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	47	1056	472	310	1581	707	162	1206	540	93	1068	478
v/s Ratio Prot	0.03	c0.40		c0.27	0.54		c0.13	0.08		0.03	0.18	
v/s Ratio Perm			0.02			0.14			0.01			c0.47
v/c Ratio	1.04	1.35	0.08	1.52	1.20	0.32	1.39	0.24	0.03	0.54	0.59	1.57
Uniform Delay, d1	58.4	42.1	30.3	49.5	33.2	21.4	54.5	28.4	26.3	55.4	35.6	41.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	144.0	164.0	0.1	251.0	95.8	0.3	208.3	0.5	0.1	5.9	2.4	266.1
Delay (s)	202.4	206.1	30.4	300.5	129.0	21.7	262.8	28.9	26.4	61.3	38.1	308.0
Level of Service	F	F	C	F	F	C	F	C	C	E	D	F
Approach Delay (s)		199.4			147.2			122.5			197.1	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	170.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	113.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	1703	151	205	1816	245	276	769	151	427	438	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	1851	164	223	1974	266	300	836	164	464	476	185
RTOR Reduction (vph)	0	0	49	0	0	70	0	0	61	0	0	110
Lane Group Flow (vph)	315	1851	115	223	1974	196	300	836	103	464	476	75
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	44.0	44.0	8.0	42.0	42.0	13.8	27.0	27.0	15.0	28.2	28.2
Effective Green, g (s)	10.0	44.0	44.0	8.0	42.0	42.0	13.8	27.0	27.0	15.0	28.2	28.2
Actuated g/C Ratio	0.09	0.40	0.40	0.07	0.38	0.38	0.13	0.25	0.25	0.14	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	312	2034	633	250	1942	604	431	869	389	468	907	406
v/s Ratio Prot	c0.09	0.36		0.06	c0.39		0.09	c0.24		c0.14	0.13	
v/s Ratio Perm			0.07			0.12			0.06			0.05
v/c Ratio	1.01	0.91	0.18	0.89	1.02	0.32	0.70	0.96	0.26	0.99	0.52	0.18
Uniform Delay, d1	50.0	31.1	21.3	50.6	34.0	24.0	46.1	41.0	33.5	47.4	35.1	31.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	53.4	6.6	0.1	30.2	24.6	0.3	4.8	22.6	1.7	39.2	2.2	1.0
Delay (s)	103.4	37.7	21.5	80.8	58.6	24.3	50.9	63.6	35.1	86.6	37.3	32.9
Level of Service	F	D	C	F	E	C	D	E	D	F	D	C
Approach Delay (s)		45.5			56.9			57.1			56.9	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	53.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	573	1472	222	310	1512	171	432	670	189	219	441	425
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	623	1600	241	337	1643	186	470	728	205	238	479	462
RTOR Reduction (vph)	0	0	105	0	0	89	0	0	111	0	0	218
Lane Group Flow (vph)	623	1600	136	337	1643	97	470	728	94	238	479	244
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.0	34.1	34.1	10.9	29.0	29.0	12.0	22.0	22.0	7.0	17.0	17.0
Effective Green, g (s)	16.0	34.1	34.1	10.9	29.0	29.0	12.0	22.0	22.0	7.0	17.0	17.0
Actuated g/C Ratio	0.18	0.38	0.38	0.12	0.32	0.32	0.13	0.24	0.24	0.08	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	610	1927	600	416	1639	510	458	865	387	267	668	299
v/s Ratio Prot	c0.18	0.31		0.10	c0.32		c0.14	c0.21		0.07	0.14	
v/s Ratio Perm			0.09			0.06			0.06			0.15
v/c Ratio	1.02	0.83	0.23	0.81	1.00	0.19	1.03	0.84	0.24	0.89	0.72	0.82
Uniform Delay, d1	37.0	25.3	19.0	38.5	30.5	22.0	39.0	32.3	27.3	41.1	34.2	35.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	41.9	3.2	0.2	11.3	22.8	0.2	48.9	9.7	1.5	28.7	6.5	21.2
Delay (s)	78.9	28.5	19.2	49.9	53.3	22.2	87.9	42.1	28.8	69.8	40.7	56.2
Level of Service	E	C	B	D	D	C	F	D	C	E	D	E
Approach Delay (s)		40.4			50.1			55.5			52.7	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	48.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	224	1414	125	264	1572	116	232	353	130	134	489	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	243	1537	136	287	1709	126	252	384	141	146	532	190
RTOR Reduction (vph)	0	0	90	0	0	63	0	0	103	0	0	139
Lane Group Flow (vph)	243	1537	46	287	1709	63	252	384	38	146	532	51
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	24.0	24.0	7.0	25.0	25.0	6.0	19.0	19.0	4.8	17.8	17.8
Effective Green, g (s)	6.0	24.0	24.0	7.0	25.0	25.0	6.0	19.0	19.0	4.8	17.8	17.8
Actuated g/C Ratio	0.08	0.34	0.34	0.10	0.35	0.35	0.08	0.27	0.27	0.07	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	291	1724	537	339	1796	559	291	950	425	233	890	398
v/s Ratio Prot	0.07	0.30		c0.08	c0.34		c0.07	0.11		0.04	c0.15	
v/s Ratio Perm			0.03			0.04			0.02			0.03
v/c Ratio	0.84	0.89	0.09	0.85	0.95	0.11	0.87	0.40	0.09	0.63	0.60	0.13
Uniform Delay, d1	31.9	22.2	15.9	31.4	22.3	15.4	32.0	21.3	19.4	32.1	23.3	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.3	6.3	0.1	17.4	11.8	0.1	22.6	1.3	0.4	5.2	3.0	0.7
Delay (s)	50.2	28.4	16.0	48.8	34.1	15.5	54.6	22.5	19.8	37.3	26.3	21.2
Level of Service	D	C	B	D	C	B	D	C	B	D	C	C
Approach Delay (s)		30.3			35.0			32.4			27.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1043	65	382	1202	0	51	0	495	153	103	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.93	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3291	
Flt Permitted		1.00	1.00	0.95	1.00		0.62		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1155		1583	1770	3291	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1134	71	415	1307	0	55	0	538	166	112	98
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	375	0	64	0
Lane Group Flow (vph)	0	1134	44	415	1307	0	55	0	163	166	146	0
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		27.4	27.4	20.8	52.2		18.0		18.0	18.0	18.0	
Effective Green, g (s)		27.4	27.4	20.8	52.2		18.0		18.0	18.0	18.0	
Actuated g/C Ratio		0.35	0.35	0.27	0.67		0.23		0.23	0.23	0.23	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1240	555	471	2362		266		364	407	758	
v/s Ratio Prot		c0.32		c0.23	0.37						0.04	
v/s Ratio Perm			0.03				0.05		c0.10	0.09		
v/c Ratio		0.91	0.08	0.88	0.55		0.21		0.45	0.41	0.19	
Uniform Delay, d1		24.3	17.0	27.5	6.9		24.3		25.8	25.6	24.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		10.5	0.1	17.3	0.3		0.4		0.9	3.0	0.6	
Delay (s)		34.7	17.0	44.8	7.1		24.7		26.7	28.6	24.8	
Level of Service		C	B	D	A		C		C	C	C	
Approach Delay (s)		33.7			16.2			26.5			26.5	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	1116	0	0	930	698	582	21	841	201	0	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1483	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.45		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1483	1504	1619		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	1213	0	0	1011	759	633	23	914	218	0	407
RTOR Reduction (vph)	0	0	0	0	0	188	0	36	36	0	0	192
Lane Group Flow (vph)	261	1213	0	0	1011	571	544	487	467	218	0	215
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	15.0	54.0			35.0	35.0	38.0	38.0	38.0	16.0		16.0
Effective Green, g (s)	15.0	54.0			35.0	35.0	38.0	38.0	38.0	16.0		16.0
Actuated g/C Ratio	0.12	0.45			0.29	0.29	0.32	0.32	0.32	0.13		0.13
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	221	1593			1032	462	532	470	476	216		211
v/s Ratio Prot	c0.15	0.34			0.29		0.32	c0.33				
v/s Ratio Perm						c0.36			0.31	0.13		c0.14
v/c Ratio	1.18	0.76			0.98	1.24	1.02	1.04	0.98	1.01		1.02
Uniform Delay, d1	52.5	27.6			42.1	42.5	41.0	41.0	40.7	52.0		52.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	118.1	2.2			22.9	123.3	44.9	51.5	37.0	63.6		66.4
Delay (s)	170.6	29.8			65.0	165.8	85.9	92.5	77.7	115.6		118.4
Level of Service	F	C			E	F	F	F	E	F		F
Approach Delay (s)		54.7			108.2			85.4			117.5	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	88.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Scenario 1 – Phase 1A

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	105	32	12	546	1163	151
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	114	35	13	593	1264	164

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	149	13	593	1264	164
Volume Left (vph)	114	0	0	1264	0
Volume Right (vph)	0	0	593	0	164
Hadj (s)	0.19	0.03	-0.67	0.53	-0.67
Departure Headway (s)	7.5	6.9	6.2	7.3	6.1
Degree Utilization, x	0.31	0.03	1.03	2.55	0.28
Capacity (veh/h)	474	508	581	507	586
Control Delay (s)	13.9	8.9	68.1	719.0	10.2
Approach Delay (s)	13.9	66.8		637.6	
Approach LOS	B	F		F	

Intersection Summary			
Delay	436.5		
HCM Level of Service	F		
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	55	838	647	0	0	1379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	911	703	0	0	1499
RTOR Reduction (vph)	0	455	0	0	0	0
Lane Group Flow (vph)	60	456	703	0	0	1499
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	15.9	15.9	66.1			66.1
Effective Green, g (s)	15.9	15.9	66.1			66.1
Actuated g/C Ratio	0.18	0.18	0.73			0.73
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	313	492	1368			1368
v/s Ratio Prot	0.03		0.38			c0.80
v/s Ratio Perm		c0.16				
v/c Ratio	0.19	0.93	0.51			1.10
Uniform Delay, d1	31.6	36.5	5.1			12.0
Progression Factor	1.00	1.00	1.00			1.29
Incremental Delay, d2	1.4	25.8	0.3			52.3
Delay (s)	32.9	62.3	5.4			67.7
Level of Service	C	E	A			E
Approach Delay (s)	60.5		5.4			67.7
Approach LOS	E		A			E

Intersection Summary			
HCM Average Control Delay	51.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	405	116	285	62	200	111	187	1217	64	146	1090	627
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	440	126	310	67	217	121	203	1323	70	159	1185	682
RTOR Reduction (vph)	0	0	173	0	0	105	0	0	42	0	0	303
Lane Group Flow (vph)	440	126	137	67	217	16	203	1323	28	159	1185	380
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.8	16.4	16.4	9.4	12.0	12.0	7.7	36.1	36.1	12.1	40.5	40.5
Effective Green, g (s)	13.8	16.4	16.4	9.4	12.0	12.0	7.7	36.1	36.1	12.1	40.5	40.5
Actuated g/C Ratio	0.15	0.18	0.18	0.10	0.13	0.13	0.09	0.40	0.40	0.13	0.45	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	526	645	288	359	472	211	294	2040	635	238	1593	712
v/s Ratio Prot	c0.13	0.04		0.02	c0.06		0.06	c0.26		0.09	c0.33	
v/s Ratio Perm			0.09			0.01			0.02			0.24
v/c Ratio	0.84	0.20	0.48	0.19	0.46	0.08	0.69	0.65	0.04	0.67	0.74	0.53
Uniform Delay, d1	37.0	31.2	33.0	36.8	36.0	34.1	40.0	21.8	16.4	37.0	20.5	17.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.03	1.04	1.15	1.00	1.00	1.00
Incremental Delay, d2	11.1	0.1	1.2	0.3	0.7	0.2	4.3	1.0	0.1	6.9	3.2	2.8
Delay (s)	48.1	31.4	34.2	37.1	36.7	34.3	45.5	23.6	19.0	44.0	23.7	20.8
Level of Service	D	C	C	D	D	C	D	C	B	D	C	C
Approach Delay (s)		40.8			36.1			26.2			24.3	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

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                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #1 Weber/Herndon
******************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: C[ 15.9]
******************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  1    0  0  2  0  1    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    16     0    0     0     0 1415    68    10 1755     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0    16     0    0     0     0 1415    68    10 1755     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    17     0    0     0     0 1538    74    11 1908     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    17     0    0     0     0 1538    74    11 1908     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   769  xxxx xxxx   954  xxxx xxxx xxxxx  1612 xxxx xxxxx
Potent Cap.: xxxx xxxx   348  xxxx xxxx   263  xxxx xxxx xxxxx   410 xxxx xxxxx
Move Cap.:   xxxx xxxx   348  xxxx xxxx   263  xxxx xxxx xxxxx   410 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.05  xxxx xxxx  0.00  xxxx xxxx  xxxx  0.03 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.2  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx  15.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  14.0 xxxx xxxxx
LOS by Move:    *    *     C     *    *     *     *    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      15.9           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         C                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	318	969	299	91	1360	223	343	12	185	206	27	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	346	1053	325	99	1478	242	373	13	201	224	29	339
RTOR Reduction (vph)	0	0	175	0	0	70	0	0	169	0	0	218
Lane Group Flow (vph)	346	1053	150	99	1478	172	373	13	32	224	29	121
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	21.0	55.0	55.0	11.0	45.0	45.0	22.0	19.0	19.0	17.8	14.8	14.8
Effective Green, g (s)	21.0	55.0	55.0	11.0	45.0	45.0	22.0	19.0	19.0	17.8	14.8	14.8
Actuated g/C Ratio	0.18	0.46	0.46	0.09	0.38	0.38	0.19	0.16	0.16	0.15	0.12	0.12
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	313	2354	733	164	1341	600	328	298	253	265	232	197
v/s Ratio Prot	c0.20	0.21		0.06	c0.42		c0.21	0.01		0.13	0.02	
v/s Ratio Perm			0.10			0.11			0.02			c0.08
v/c Ratio	1.11	0.45	0.21	0.60	1.10	0.29	1.14	0.04	0.13	0.85	0.12	0.61
Uniform Delay, d1	48.9	21.6	18.9	51.8	36.9	25.7	48.4	42.2	42.8	49.2	46.2	49.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	82.2	0.1	0.1	6.1	57.5	0.3	92.2	0.3	1.0	21.2	0.2	5.6
Delay (s)	131.1	21.7	19.1	57.9	94.4	26.0	140.6	42.5	43.8	70.3	46.5	54.9
Level of Service	F	C	B	E	F	C	F	D	D	E	D	D
Approach Delay (s)		43.2			83.3			105.3			60.3	
Approach LOS		D			F			F			E	

Intersection Summary			
HCM Average Control Delay	68.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	118.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	1062	9	162	1251	12	54	33	114	21	129	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1646		3433	1715	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	1646		3433	1715	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	1154	10	176	1360	13	59	36	124	23	140	157
RTOR Reduction (vph)	0	0	6	0	0	5	0	92	0	0	53	0
Lane Group Flow (vph)	73	1154	4	176	1360	8	59	68	0	23	245	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	3.8	29.7	29.7	6.1	32.0	32.0	2.2	18.7		1.5	18.0	
Effective Green, g (s)	3.8	29.7	29.7	6.1	32.0	32.0	2.2	18.7		1.5	18.0	
Actuated g/C Ratio	0.05	0.41	0.41	0.08	0.44	0.44	0.03	0.26		0.02	0.25	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	93	1460	653	291	1573	704	105	428		72	429	
v/s Ratio Prot	0.04	0.33		c0.05	c0.38		c0.02	0.04		0.01	c0.14	
v/s Ratio Perm			0.00			0.01						
v/c Ratio	0.78	0.79	0.01	0.60	0.86	0.01	0.56	0.16		0.32	0.57	
Uniform Delay, d1	33.7	18.4	12.5	31.8	18.0	11.2	34.4	20.6		34.7	23.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	34.1	3.0	0.0	3.5	5.2	0.0	6.7	0.8		2.6	5.4	
Delay (s)	67.8	21.4	12.5	35.3	23.3	11.2	41.1	21.4		37.3	29.0	
Level of Service	E	C	B	D	C	B	D	C		D	C	
Approach Delay (s)		24.1			24.5			26.7			29.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1264	135	110	1408	99	151	32	308	171	67	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1610		3433	1783	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1610		3433	1783	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	1374	147	120	1530	108	164	35	335	186	73	29
RTOR Reduction (vph)	0	0	78	0	0	27	0	87	0	0	18	0
Lane Group Flow (vph)	8	1374	69	120	1530	81	164	283	0	186	84	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	0.8	38.1	38.1	4.0	41.3	41.3	6.0	18.0		5.0	17.0	
Effective Green, g (s)	0.8	38.1	38.1	4.0	41.3	41.3	6.0	18.0		5.0	17.0	
Actuated g/C Ratio	0.01	0.47	0.47	0.05	0.51	0.51	0.07	0.22		0.06	0.21	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	34	1663	744	169	1802	806	254	357		212	374	
v/s Ratio Prot	0.00	0.39		c0.03	c0.43		0.05	c0.18		c0.05	0.05	
v/s Ratio Perm			0.04			0.05						
v/c Ratio	0.24	0.83	0.09	0.71	0.85	0.10	0.65	0.79		0.88	0.22	
Uniform Delay, d1	39.8	18.6	11.9	38.0	17.2	10.3	36.5	29.8		37.7	26.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.5	3.5	0.1	13.1	4.0	0.1	5.5	16.4		30.9	1.4	
Delay (s)	43.4	22.1	12.0	51.1	21.2	10.3	42.1	46.2		68.6	28.0	
Level of Service	D	C	B	D	C	B	D	D		E	C	
Approach Delay (s)		21.3			22.5			44.9			54.2	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	27.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	81.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	261	1322	178	90	1155	268	159	286	147	487	397	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	284	1437	193	98	1255	291	173	311	160	529	432	305
RTOR Reduction (vph)	0	0	126	0	0	217	0	0	119	0	0	136
Lane Group Flow (vph)	284	1437	67	98	1255	74	173	311	41	529	432	169
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	19.6	19.6	3.2	16.8	16.8	6.9	17.0	17.0	10.0	20.1	20.1
Effective Green, g (s)	6.0	19.6	19.6	3.2	16.8	16.8	6.9	17.0	17.0	10.0	20.1	20.1
Actuated g/C Ratio	0.09	0.30	0.30	0.05	0.26	0.26	0.10	0.26	0.26	0.15	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	313	1515	472	167	1298	404	360	914	409	522	1081	484
v/s Ratio Prot	c0.08	c0.28		0.03	0.25		0.05	0.09		c0.15	c0.12	
v/s Ratio Perm			0.04			0.05			0.03			0.11
v/c Ratio	0.91	0.95	0.14	0.59	0.97	0.18	0.48	0.34	0.10	1.01	0.40	0.35
Uniform Delay, d1	29.6	22.6	16.9	30.7	24.2	19.1	27.8	19.8	18.6	27.9	18.1	17.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.2	12.8	0.1	5.2	17.5	0.2	1.0	1.0	0.5	42.8	1.1	2.0
Delay (s)	57.8	35.4	17.1	35.8	41.7	19.4	28.8	20.9	19.1	70.7	19.2	19.7
Level of Service	E	D	B	D	D	B	C	C	B	E	B	B
Approach Delay (s)		36.9			37.4			22.5			40.8	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	36.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1962	1	2	1515	56	0	1	0	56	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	2133	1	2	1647	61	0	1	0	61	0	1
RTOR Reduction (vph)	0	0	0	0	0	20	0	0	0	0	0	1
Lane Group Flow (vph)	1	2133	1	2	1647	41	0	1	0	61	0	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.7	37.8	37.8	0.7	37.8	37.8		9.7		2.9		7.1
Effective Green, g (s)	0.7	37.8	37.8	0.7	37.8	37.8		9.7		2.9		7.1
Actuated g/C Ratio	0.01	0.56	0.56	0.01	0.56	0.56		0.14		0.04		0.11
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	36	2865	892	36	2865	892		512		148		168
v/s Ratio Prot	0.00	c0.42		c0.00	0.32			c0.00		c0.02		
v/s Ratio Perm			0.00			0.03						0.00
v/c Ratio	0.03	0.74	0.00	0.06	0.57	0.05		0.00		0.41		0.00
Uniform Delay, d1	32.9	11.0	6.4	32.9	9.5	6.6		24.6		31.3		26.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2	0.3	1.1	0.0	0.6	0.3	0.0		0.0		1.9		0.0
Delay (s)	33.2	12.1	6.4	33.5	9.7	6.6		24.6		33.1		26.8
Level of Service	C	B	A	C	A	A		C		C		C
Approach Delay (s)		12.1			9.7			24.6			33.0	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	1732	228	370	1300	25	183	98	421	66	94	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3477		1770	3529		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.61	1.00	1.00	0.60	1.00	1.00
Satd. Flow (perm)	1770	3477		1770	3529		1144	1863	1583	1117	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	1883	248	402	1413	27	199	107	458	72	102	52
RTOR Reduction (vph)	0	8	0	0	1	0	0	0	233	0	0	44
Lane Group Flow (vph)	84	2123	0	402	1439	0	199	107	225	72	102	8
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	8.9	64.8		25.0	80.9		19.0	19.0	19.0	19.0	19.0	19.0
Effective Green, g (s)	8.9	64.8		25.0	80.9		19.0	19.0	19.0	19.0	19.0	19.0
Actuated g/C Ratio	0.07	0.54		0.21	0.67		0.16	0.16	0.16	0.16	0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	130	1865		366	2363		180	293	249	176	293	249
v/s Ratio Prot	0.05	c0.61		c0.23	0.41			0.06			0.05	
v/s Ratio Perm							c0.17		0.14	0.06		0.01
v/c Ratio	0.65	1.14		1.10	0.61		1.11	0.37	0.91	0.41	0.35	0.03
Uniform Delay, d1	54.4	28.0		47.9	11.1		50.9	45.5	50.0	45.8	45.4	43.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.5	69.3		76.2	0.4		98.2	3.5	37.0	6.9	3.2	0.2
Delay (s)	64.9	97.3		124.1	11.6		149.1	49.0	87.0	52.7	48.6	43.4
Level of Service	E	F		F	B		F	D	F	D	D	D
Approach Delay (s)		96.1			36.1			97.8			48.7	
Approach LOS		F			D			F			D	

Intersection Summary			
HCM Average Control Delay	72.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	2256	103	228	1472	248	153	137	263	222	159	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	2452	112	248	1600	270	166	149	286	241	173	167
RTOR Reduction (vph)	0	0	8	0	0	82	0	0	81	0	0	97
Lane Group Flow (vph)	133	2452	104	248	1600	188	166	149	205	241	173	70
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.6	72.0	72.0	7.0	70.4	70.4	6.0	18.0	18.0	7.0	19.0	19.0
Effective Green, g (s)	8.6	72.0	72.0	7.0	70.4	70.4	6.0	18.0	18.0	7.0	19.0	19.0
Actuated g/C Ratio	0.07	0.60	0.60	0.06	0.59	0.59	0.05	0.15	0.15	0.06	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	246	2123	950	200	2076	929	172	531	237	200	560	251
v/s Ratio Prot	0.04	c0.69		c0.07	0.45		0.05	0.04		c0.07	0.05	
v/s Ratio Perm			0.07			0.12			c0.13			0.04
v/c Ratio	0.54	1.15	0.11	1.24	0.77	0.20	0.97	0.28	0.87	1.20	0.31	0.28
Uniform Delay, d1	53.8	24.0	10.3	56.5	18.7	11.6	56.9	45.3	49.8	56.5	44.7	44.5
Progression Factor	1.00	1.00	1.00	0.93	0.86	1.75	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	75.6	0.1	132.4	1.2	0.1	57.8	1.3	32.1	129.8	1.4	2.8
Delay (s)	56.2	99.6	10.3	185.1	17.2	20.4	114.7	46.6	81.9	186.3	46.1	47.2
Level of Service	E	F	B	F	B	C	F	D	F	F	D	D
Approach Delay (s)		93.7			37.3			82.2			104.6	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	73.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	2692	182	335	2015	130	95	77	306	250	103	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	2926	198	364	2190	141	103	84	333	272	112	54
RTOR Reduction (vph)	0	0	49	0	0	34	0	0	93	0	0	42
Lane Group Flow (vph)	68	2926	149	364	2190	107	103	84	240	272	112	12
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	59.8	59.8	11.0	66.8	66.8	6.9	17.2	17.2	16.0	26.3	26.3
Effective Green, g (s)	4.0	59.8	59.8	11.0	66.8	66.8	6.9	17.2	17.2	16.0	26.3	26.3
Actuated g/C Ratio	0.03	0.50	0.50	0.09	0.56	0.56	0.06	0.14	0.14	0.13	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2534	789	315	2831	881	197	507	227	236	1114	347
v/s Ratio Prot	0.02	c0.58		c0.11	0.43		0.03	0.02		c0.15	0.02	
v/s Ratio Perm			0.09			0.07			c0.15			0.01
v/c Ratio	0.60	1.15	0.19	1.16	0.77	0.12	0.52	0.17	1.06	1.15	0.10	0.03
Uniform Delay, d1	57.2	30.1	16.7	54.5	20.7	12.7	55.0	45.1	51.4	52.0	37.4	36.9
Progression Factor	1.01	0.84	0.99	1.08	0.50	0.39	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	70.1	0.0	82.2	0.5	0.0	2.5	0.7	75.1	106.0	0.2	0.2
Delay (s)	58.3	95.3	16.5	141.0	10.9	4.9	57.4	45.8	126.5	158.0	37.6	37.0
Level of Service	E	F	B	F	B	A	E	D	F	F	D	D
Approach Delay (s)		89.6			28.1			99.8			112.3	
Approach LOS		F			C			F			F	

Intersection Summary			
HCM Average Control Delay	67.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	953	2201	110	247	1384	375	156	806	219	173	733	797
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1036	2392	120	268	1504	408	170	876	238	188	797	866
RTOR Reduction (vph)	0	0	35	0	0	79	0	0	123	0	0	1
Lane Group Flow (vph)	1036	2392	85	268	1504	329	170	876	115	188	797	865
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	36.0	61.0	61.0	10.0	35.0	35.0	6.0	24.0	24.0	9.0	27.0	63.0
Effective Green, g (s)	36.0	61.0	61.0	10.0	35.0	35.0	6.0	24.0	24.0	9.0	27.0	63.0
Actuated g/C Ratio	0.30	0.51	0.51	0.08	0.29	0.29	0.05	0.20	0.20	0.08	0.22	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1030	2585	805	286	1483	462	172	1017	317	257	796	884
v/s Ratio Prot	c0.30	0.47		0.08	c0.30		c0.05	0.17		0.05	c0.23	c0.29
v/s Ratio Perm			0.05			0.21			0.07			0.25
v/c Ratio	1.01	0.93	0.11	0.94	1.01	0.71	0.99	0.86	0.36	0.73	1.00	0.98
Uniform Delay, d1	42.0	27.4	15.3	54.7	42.5	38.0	57.0	46.4	41.4	54.3	46.5	27.8
Progression Factor	1.20	0.31	0.06	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.8	0.7	0.0	36.4	26.9	5.2	64.6	9.5	3.2	10.2	32.2	24.8
Delay (s)	60.3	9.1	0.9	91.1	69.4	43.2	121.5	55.9	44.6	64.6	78.7	52.6
Level of Service	E	A	A	F	E	D	F	E	D	E	E	D
Approach Delay (s)		23.8			67.2			62.5			65.1	
Approach LOS		C			E			E			E	

Intersection Summary			
HCM Average Control Delay	48.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	236	1994	140	109	1651	238	131	257	126	219	385	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	257	2167	152	118	1795	259	142	279	137	238	418	262
RTOR Reduction (vph)	0	0	64	0	0	89	0	0	84	0	0	87
Lane Group Flow (vph)	257	2167	88	118	1795	170	142	279	53	238	418	175
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	37.0	37.0	4.0	33.0	33.0	5.0	17.0	17.0	6.0	18.0	18.0
Effective Green, g (s)	8.0	37.0	37.0	4.0	33.0	33.0	5.0	17.0	17.0	6.0	18.0	18.0
Actuated g/C Ratio	0.10	0.46	0.46	0.05	0.41	0.41	0.06	0.21	0.21	0.08	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	2352	732	172	2098	653	215	1081	336	257	1144	356
v/s Ratio Prot	c0.07	c0.43		0.03	0.35		0.04	0.05		c0.07	0.08	
v/s Ratio Perm			0.06			0.11			0.03			c0.11
v/c Ratio	0.75	0.92	0.12	0.69	0.86	0.26	0.66	0.26	0.16	0.93	0.37	0.49
Uniform Delay, d1	35.0	20.1	12.2	37.4	21.3	15.5	36.7	26.2	25.7	36.8	26.2	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	6.6	0.1	10.8	3.7	0.2	7.4	0.6	1.0	36.5	0.9	4.8
Delay (s)	43.7	26.7	12.3	48.2	25.0	15.7	44.1	26.8	26.7	73.3	27.1	31.8
Level of Service	D	C	B	D	C	B	D	C	C	E	C	C
Approach Delay (s)		27.6			25.1			31.2			40.4	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	918	413	0	0	608	183
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	998	449	0	0	661	199
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1447		998	998
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1447		998	998
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	33
cM capacity (veh/h)			468		270	296

Direction, Lane #	EB 1	EB 2	NB 1
Volume Total	998	449	860
Volume Left	0	0	661
Volume Right	0	449	199
cSH	1700	1700	278
Volume to Capacity	0.59	0.26	3.09
Queue Length 95th (ft)	0	0	Err
Control Delay (s)	0.0	0.0	Err
Lane LOS			F
Approach Delay (s)	0.0		Err
Approach LOS			F

Intersection Summary			
Average Delay	3727.2		
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	51	1	333	11	0	0	0	0	2	0	399
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	55	1	362	12	0	0	0	0	2	0	434
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					680							
pX, platoon unblocked												
vC, conflicting volume	12			57			1225	792	12	791	791	55
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	12			57			1225	792	12	791	791	55
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			77			100	100	100	99	100	57
cM capacity (veh/h)	1607			1548			73	246	1069	252	247	1011

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SW 1	SW 2
Volume Total	55	1	362	12	2	434
Volume Left	0	0	362	0	2	0
Volume Right	0	1	0	0	0	434
cSH	1700	1700	1548	1700	252	1011
Volume to Capacity	0.03	0.00	0.23	0.01	0.01	0.43
Queue Length 95th (ft)	0	0	23	0	1	55
Control Delay (s)	0.0	0.0	8.0	0.0	19.4	11.2
Lane LOS			A		C	B
Approach Delay (s)	0.0		7.8		11.2	
Approach LOS					B	

Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	11	286	188	41	176	144
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	311	204	45	191	157

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	12	311	249	348
Volume Left (vph)	12	0	0	191
Volume Right (vph)	0	311	45	0
Hadj (s)	0.53	-0.67	-0.07	0.14
Departure Headway (s)	6.6	5.4	5.3	5.3
Degree Utilization, x	0.02	0.47	0.36	0.52
Capacity (veh/h)	514	618	643	645
Control Delay (s)	8.6	11.8	11.3	13.9
Approach Delay (s)	11.7		11.3	13.9
Approach LOS	B		B	B

Intersection Summary			
Delay	12.4		
HCM Level of Service	B		
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Polk/Sierra

Cycle (sec):	100	Critical Vol./Cap.(X):	0.527
Loss Time (sec):	0	Average Delay (sec/veh):	12.9
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk								Dante					
Approach:	North Bound			South Bound			East Bound			West Bound				
Movement:	L	T	R	L	T	R	L	T	R	L	T	R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign				
Rights:	Include			Include			Include			Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0		
Lanes:	1 0 0 1 0			1 0 1 0 1			1 0 0 1 0			1 0 1 0 1				
Volume Module:														
Base Vol:	52	243	23	66	198	28	54	104	70	40	65	78		
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Initial Bse:	52	243	23	66	198	28	54	104	70	40	65	78		
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
PHF Volume:	57	264	25	72	215	30	59	113	76	43	71	85		
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0		
Reduced Vol:	57	264	25	72	215	30	59	113	76	43	71	85		
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
FinalVolume:	57	264	25	72	215	30	59	113	76	43	71	85		
Saturation Flow Module:														
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Lanes:	1.00	0.91	0.09	1.00	1.00	1.00	1.00	0.60	0.40	1.00	1.00	1.00		
Final Sat.:	501	502	47	467	504	551	469	314	211	433	462	508		
Capacity Analysis Module:														
Vol/Sat:	0.11	0.53	0.53	0.15	0.43	0.06	0.13	0.36	0.36	0.10	0.15	0.17		
Crit Moves:		****			****				****			****		
Delay/Veh:	10.4	15.3	15.3	11.3	14.3	9.2	10.9	12.5	12.5	11.2	11.1	10.4		
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
AdjDel/Veh:	10.4	15.3	15.3	11.3	14.3	9.2	10.9	12.5	12.5	11.2	11.1	10.4		
LOS by Move:	B	C	C	B	B	A	B	B	B	B	B	B		
ApproachDel:		14.5			13.1			12.1			10.9			
Delay Adj:		1.00			1.00			1.00			1.00			
ApprAdjDel:		14.5			13.1			12.1			10.9			
LOS by Appr:		B			B			B			B			
AllWayAvgQ:	0.1	1.0	1.0	0.2	0.7	0.1	0.1	0.5	0.5	0.1	0.2	0.2		

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	4	7	10	4	190	8	508	0	62	260	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	4	8	11	4	207	9	552	0	67	283	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			4			4						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	828	999	295	993	1011	276	307			552		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	828	999	295	993	1011	276	307			552		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	56	98	99	94	98	71	99			93		
cM capacity (veh/h)	175	224	702	184	221	721	1251			1014		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	76	12	11	211	9	276	276	0	67	307
Volume Left	76	0	11	0	9	0	0	0	67	0
Volume Right	0	8	0	207	0	0	0	0	0	24
cSH	175	617	184	737	1251	1700	1700	1700	1014	1700
Volume to Capacity	0.44	0.02	0.06	0.29	0.01	0.16	0.16	0.00	0.07	0.18
Queue Length 95th (ft)	50	1	5	30	1	0	0	0	5	0
Control Delay (s)	40.6	14.2	25.8	12.2	7.9	0.0	0.0	0.0	8.8	0.0
Lane LOS	E	B	D	B	A				A	
Approach Delay (s)	37.0		12.8		0.1				1.6	
Approach LOS	E		B							

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	44	145	553	120	103	210
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	158	601	130	112	228

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	205	601	130	112	228
Volume Left (vph)	0	601	0	112	0
Volume Right (vph)	158	0	0	0	228
Hadj (s)	-0.43	0.53	0.03	0.53	-0.67
Departure Headway (s)	5.9	6.4	5.9	7.4	6.2
Degree Utilization, x	0.33	1.07	0.21	0.23	0.39
Capacity (veh/h)	593	553	593	475	566
Control Delay (s)	11.8	83.1	9.3	11.4	12.0
Approach Delay (s)	11.8	69.9		11.8	
Approach LOS	B	F		B	

Intersection Summary			
Delay	45.1		
HCM Level of Service	E		
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	69	207	14	4	138	229	6	1	4	509	6	194
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	75	225	15	4	150	249	7	1	4	553	7	211

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	188	128	154	249	12	771
Volume Left (vph)	75	0	4	0	7	553
Volume Right (vph)	0	15	0	249	4	211
Hadj (s)	0.23	-0.05	0.05	-0.67	-0.08	0.01
Departure Headway (s)	7.4	7.1	7.1	6.4	7.3	5.9
Degree Utilization, x	0.38	0.25	0.30	0.44	0.02	1.25
Capacity (veh/h)	479	497	496	554	459	609
Control Delay (s)	13.7	11.3	12.0	13.2	10.4	147.3
Approach Delay (s)	12.7		12.7		10.4	147.3
Approach LOS	B		B		B	F

Intersection Summary			
Delay	81.8		
HCM Level of Service	F		
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.437
Loss Time (sec):	0	Average Delay (sec/veh):	12.1
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk									Dante							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1	0	1	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1
Volume Module:																				
Base Vol:	185		12		20	105		14		52	19		177		40	28		292		33
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	185		12		20	105		14		52	19		177		40	28		292		33
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	201		13		22	114		15		57	21		192		43	30		317		36
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Reduced Vol:	201		13		22	114		15		57	21		192		43	30		317		36
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	201		13		22	114		15		57	21		192		43	30		317		36
Saturation Flow Module:																				
Adjustment:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Lanes:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	2.00	1.00			1.00	2.00	1.00		
Final Sat.:	460		484		534	444		469		518	454		977		536	476		1029		566
Capacity Analysis Module:																				
Vol/Sat:	0.44	0.03	0.04			0.26	0.03	0.11			0.05	0.20	0.08			0.06	0.31	0.06		
Crit Moves:	****					****						****					****			
Delay/Veh:	15.4	9.9	9.2			12.7	10.1	9.8			10.5	11.2	9.5			10.4	12.2	9.1		
Delay Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	15.4	9.9	9.2			12.7	10.1	9.8			10.5	11.2	9.5			10.4	12.2	9.1		
LOS by Move:	C	A	A			B	B	A			B	B	A			B	B	A		
ApproachDel:	14.5					11.6					10.9					11.7				
Delay Adj:	1.00					1.00					1.00					1.00				
ApprAdjDel:	14.5					11.6					10.9					11.7				
LOS by Appr:	B					B					B					B				
AllWayAvgQ:	0.7	0.0	0.0			0.3	0.0	0.1			0.0	0.2	0.1			0.1	0.4	0.1		

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	894	81	104	545	95	49	432	82	86	461	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	972	88	113	592	103	53	470	89	93	501	75
RTOR Reduction (vph)	0	0	40	0	15	0	0	0	46	0	0	43
Lane Group Flow (vph)	185	972	48	113	680	0	53	470	43	93	501	32
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.9	47.0	47.0	6.0	39.1		3.2	16.0	16.0	5.0	17.8	17.8
Effective Green, g (s)	13.9	47.0	47.0	6.0	39.1		3.2	16.0	16.0	5.0	17.8	17.8
Actuated g/C Ratio	0.15	0.52	0.52	0.07	0.43		0.04	0.18	0.18	0.06	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	273	973	827	118	1504		63	629	281	98	700	313
v/s Ratio Prot	0.10	c0.52		c0.06	0.20		0.03	0.13		c0.05	c0.14	
v/s Ratio Perm			0.03						0.03			0.02
v/c Ratio	0.68	1.00	0.06	0.96	0.45		0.84	0.75	0.15	0.95	0.72	0.10
Uniform Delay, d1	35.9	21.5	10.6	41.9	17.9		43.1	35.1	31.3	42.4	33.7	29.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	28.4	0.0	68.8	0.2		60.8	4.8	0.3	73.5	3.5	0.1
Delay (s)	42.5	49.9	10.6	110.7	18.1		104.0	39.9	31.5	115.9	37.2	29.7
Level of Service	D	D	B	F	B		F	D	C	F	D	C
Approach Delay (s)		46.0			31.1			44.2			47.3	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	42.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	61	29	11	4	18	71	8	347	6	49	186	26
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	66	32	12	4	20	77	9	377	7	53	202	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	790	710	202	731	732	377	230			384		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	790	710	202	731	732	377	230			384		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	91	99	99	94	88	99			95		
cM capacity (veh/h)	250	340	839	297	331	669	1337			1175		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	110	101	386	7	255	28
Volume Left	66	4	9	0	53	0
Volume Right	12	77	0	7	0	28
cSH	295	535	1337	1700	1175	1700
Volume to Capacity	0.37	0.19	0.01	0.00	0.05	0.02
Queue Length 95th (ft)	42	17	0	0	4	0
Control Delay (s)	24.3	13.3	0.2	0.0	2.0	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	24.3	13.3	0.2		1.8	
Approach LOS	C	B				

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	903	487	571	846	76	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	982	529	621	920	83	291
RTOR Reduction (vph)	0	178	0	0	0	250
Lane Group Flow (vph)	982	351	621	920	83	41
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	55.0	55.0	36.0	95.0	17.0	17.0
Effective Green, g (s)	55.0	55.0	36.0	95.0	17.0	17.0
Actuated g/C Ratio	0.46	0.46	0.30	0.79	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	854	726	531	2802	251	224
v/s Ratio Prot	c0.53		c0.35	0.26	c0.05	
v/s Ratio Perm		0.22				0.03
v/c Ratio	1.15	0.48	1.17	0.33	0.33	0.18
Uniform Delay, d1	32.5	22.6	42.0	3.5	46.4	45.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	80.9	0.5	95.0	0.1	3.5	1.8
Delay (s)	113.4	23.1	137.0	3.6	49.9	47.2
Level of Service	F	C	F	A	D	D
Approach Delay (s)	81.8			57.4	47.8	
Approach LOS	F			E	D	

Intersection Summary			
HCM Average Control Delay	67.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (vph)	119	1034	1157	270	145	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	1124	1258	293	158	276
RTOR Reduction (vph)	0	0	0	143	0	182
Lane Group Flow (vph)	129	1124	1258	150	158	94
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	6.4	46.2	35.8	35.8	15.8	15.8
Effective Green, g (s)	6.4	46.2	35.8	35.8	15.8	15.8
Actuated g/C Ratio	0.09	0.66	0.51	0.51	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	162	1230	1810	810	400	357
v/s Ratio Prot	0.07	c0.60	0.36		c0.09	
v/s Ratio Perm				0.09		0.06
v/c Ratio	0.80	0.91	0.70	0.18	0.40	0.26
Uniform Delay, d1	31.2	10.2	13.0	9.2	23.0	22.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.1	10.5	1.2	0.1	2.9	1.8
Delay (s)	54.3	20.7	14.1	9.3	25.9	24.1
Level of Service	D	C	B	A	C	C
Approach Delay (s)		24.1	13.2		24.8	
Approach LOS		C	B		C	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	36	1004	38	370	1135	172	229	380	31	17	301	526
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1091	41	402	1234	187	249	413	34	18	327	572
RTOR Reduction (vph)	0	0	21	0	0	83	0	0	24	0	0	301
Lane Group Flow (vph)	39	1091	20	402	1234	105	249	413	10	18	327	271
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	3.6	31.6	31.6	22.0	50.0	50.0	14.0	28.4	28.4	2.0	16.4	16.4
Effective Green, g (s)	3.6	31.6	31.6	22.0	50.0	50.0	14.0	28.4	28.4	2.0	16.4	16.4
Actuated g/C Ratio	0.04	0.32	0.32	0.22	0.50	0.50	0.14	0.28	0.28	0.02	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	64	1118	500	389	1770	792	248	1005	450	35	580	260
v/s Ratio Prot	0.02	c0.31		c0.23	0.35		c0.14	0.12		0.01	0.09	
v/s Ratio Perm			0.01			0.07			0.01			c0.17
v/c Ratio	0.61	0.98	0.04	1.03	0.70	0.13	1.00	0.41	0.02	0.51	0.56	1.04
Uniform Delay, d1	47.5	33.8	23.7	39.0	19.2	13.4	43.0	29.0	25.8	48.5	38.5	41.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.3	21.1	0.0	54.5	1.2	0.1	58.2	1.2	0.1	12.2	3.9	67.3
Delay (s)	62.8	54.9	23.7	93.5	20.4	13.5	101.2	30.3	25.9	60.7	42.4	109.1
Level of Service	E	D	C	F	C	B	F	C	C	E	D	F
Approach Delay (s)		54.1			35.8			55.4			84.4	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM Average Control Delay	53.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	1198	74	121	1142	94	171	230	64	236	689	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	1302	80	132	1241	102	186	250	70	257	749	158
RTOR Reduction (vph)	0	0	56	0	0	71	0	0	51	0	0	112
Lane Group Flow (vph)	112	1302	24	132	1241	31	186	250	19	257	749	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	18.0	18.0	3.2	18.0	18.0	5.3	16.5	16.5	6.3	17.5	17.5
Effective Green, g (s)	3.2	18.0	18.0	3.2	18.0	18.0	5.3	16.5	16.5	6.3	17.5	17.5
Actuated g/C Ratio	0.05	0.30	0.30	0.05	0.30	0.30	0.09	0.28	0.28	0.10	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1526	475	183	1526	475	303	973	435	360	1032	462
v/s Ratio Prot	0.03	c0.26		c0.04	0.24		0.05	0.07		c0.07	c0.21	
v/s Ratio Perm			0.02			0.02			0.01			0.03
v/c Ratio	0.61	0.85	0.05	0.72	0.81	0.06	0.61	0.26	0.04	0.71	0.73	0.10
Uniform Delay, d1	27.8	19.8	14.9	28.0	19.4	15.0	26.4	17.0	16.0	26.0	19.1	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	4.9	0.0	13.1	3.4	0.1	3.7	0.6	0.2	6.6	4.5	0.4
Delay (s)	33.7	24.6	15.0	41.1	22.9	15.0	30.0	17.6	16.2	32.6	23.5	15.9
Level of Service	C	C	B	D	C	B	C	B	B	C	C	B
Approach Delay (s)		24.8			24.0			22.0			24.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	247	1433	101	144	951	59	181	408	384	279	509	403
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	1558	110	157	1034	64	197	443	417	303	553	438
RTOR Reduction (vph)	0	0	63	0	0	46	0	0	110	0	0	110
Lane Group Flow (vph)	268	1558	47	157	1034	18	197	443	307	303	553	328
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	23.0	23.0	4.0	20.0	20.0	5.0	20.0	20.0	7.0	22.0	22.0
Effective Green, g (s)	7.0	23.0	23.0	4.0	20.0	20.0	5.0	20.0	20.0	7.0	22.0	22.0
Actuated g/C Ratio	0.10	0.33	0.33	0.06	0.29	0.29	0.07	0.29	0.29	0.10	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1671	520	196	1453	452	245	1011	452	343	1112	498
v/s Ratio Prot	c0.08	c0.31		0.05	0.20		0.06	0.13		c0.09	0.16	
v/s Ratio Perm			0.03			0.01			0.19			c0.21
v/c Ratio	0.78	0.93	0.09	0.80	0.71	0.04	0.80	0.44	0.68	0.88	0.50	0.66
Uniform Delay, d1	30.8	22.7	16.3	32.6	22.4	18.1	32.0	20.4	22.2	31.1	19.5	20.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.0	9.9	0.1	20.5	1.7	0.0	17.2	1.4	8.0	22.5	1.6	6.7
Delay (s)	41.8	32.7	16.3	53.1	24.1	18.1	49.2	21.8	30.1	53.6	21.1	27.5
Level of Service	D	C	B	D	C	B	D	C	C	D	C	C
Approach Delay (s)		33.0			27.4			30.2			30.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	1583	146	155	1070	67	201	538	266	148	419	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	1721	159	168	1163	73	218	585	289	161	455	172
RTOR Reduction (vph)	0	0	100	0	0	47	0	0	113	0	0	112
Lane Group Flow (vph)	133	1721	59	168	1163	26	218	585	176	161	455	60
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	23.8	23.8	4.0	23.8	23.8	5.0	17.0	17.0	5.0	17.0	17.0
Effective Green, g (s)	4.0	23.8	23.8	4.0	23.8	23.8	5.0	17.0	17.0	5.0	17.0	17.0
Actuated g/C Ratio	0.06	0.36	0.36	0.06	0.36	0.36	0.08	0.26	0.26	0.08	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	209	1839	573	209	1839	573	261	914	409	261	914	409
v/s Ratio Prot	0.04	c0.34		c0.05	0.23		c0.06	c0.17		0.05	0.13	
v/s Ratio Perm			0.04			0.02			0.11			0.04
v/c Ratio	0.64	0.94	0.10	0.80	0.63	0.05	0.84	0.64	0.43	0.62	0.50	0.15
Uniform Delay, d1	30.2	20.3	13.9	30.5	17.4	13.6	30.0	21.7	20.4	29.5	20.8	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2	9.5	0.1	19.6	0.7	0.0	20.0	3.4	3.3	4.3	1.9	0.8
Delay (s)	36.4	29.8	14.0	50.1	18.1	13.7	50.0	25.1	23.7	33.8	22.7	19.6
Level of Service	D	C	B	D	B	B	D	C	C	C	C	B
Approach Delay (s)		29.0			21.7			29.7			24.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	26.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1472	35	137	501	0	20	0	414	168	32	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.89	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3166	
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1262		1583	1770	3166	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1600	38	149	545	0	22	0	450	183	35	83
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	148	0	63	0
Lane Group Flow (vph)	0	1600	26	149	545	0	22	0	302	183	55	0
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		33.8	33.8	7.0	44.8		17.0		17.0	17.0	17.0	
Effective Green, g (s)		33.8	33.8	7.0	44.8		17.0		17.0	17.0	17.0	
Actuated g/C Ratio		0.48	0.48	0.10	0.64		0.24		0.24	0.24	0.24	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1714	767	178	2271		307		386	431	771	
v/s Ratio Prot		c0.45		c0.08	0.15						0.02	
v/s Ratio Perm			0.02				0.02		c0.19	0.10		
v/c Ratio		0.93	0.03	0.84	0.24		0.07		0.78	0.42	0.07	
Uniform Delay, d1		16.9	9.4	30.8	5.3		20.3		24.7	22.3	20.3	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		9.8	0.0	27.5	0.1		0.1		9.9	3.0	0.2	
Delay (s)		26.8	9.5	58.3	5.3		20.4		34.6	25.3	20.5	
Level of Service		C	A	E	A		C		C	C	C	
Approach Delay (s)		26.4			16.7			33.9			23.4	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	69.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	344	1103	0	0	537	295	262	15	487	179	0	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.87	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1473	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.57		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1473	1504	2054		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	374	1199	0	0	584	321	285	16	529	195	0	228
RTOR Reduction (vph)	0	0	0	0	0	184	0	80	80	0	0	187
Lane Group Flow (vph)	374	1199	0	0	584	137	256	208	206	195	0	41
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	21.0	41.6			16.6	16.6	19.0	19.0	19.0	16.0		16.0
Effective Green, g (s)	21.0	41.6			16.6	16.6	19.0	19.0	19.0	16.0		16.0
Actuated g/C Ratio	0.24	0.47			0.19	0.19	0.21	0.21	0.21	0.18		0.18
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	420	1662			663	297	360	316	323	371		286
v/s Ratio Prot	c0.21	0.34			c0.17		c0.15	0.14				
v/s Ratio Perm						0.09			0.14	c0.09		0.03
v/c Ratio	0.89	0.72			0.88	0.46	0.71	0.66	0.64	0.53		0.14
Uniform Delay, d1	32.7	18.9			35.0	32.0	32.3	31.8	31.7	32.9		30.5
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	20.3	1.6			13.0	1.1	11.3	10.3	9.3	5.2		1.1
Delay (s)	53.0	20.4			48.1	33.1	43.6	42.1	40.9	38.1		31.6
Level of Service	D	C			D	C	D	D	D	D		C
Approach Delay (s)		28.2			42.8			42.2			34.6	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	35.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	88.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	85	953	548	0	0	1288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	1036	596	0	0	1400
RTOR Reduction (vph)	0	511	0	0	0	0
Lane Group Flow (vph)	92	525	596	0	0	1400
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	16.0	16.0	56.0			56.0
Effective Green, g (s)	16.0	16.0	56.0			56.0
Actuated g/C Ratio	0.20	0.20	0.70			0.70
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	354	557	1304			1304
v/s Ratio Prot	0.05		0.32			c0.75
v/s Ratio Perm		c0.19				
v/c Ratio	0.26	0.94	0.46			1.07
Uniform Delay, d1	27.0	31.5	5.3			12.0
Progression Factor	1.00	1.00	1.00			1.45
Incremental Delay, d2	1.8	26.2	0.3			44.5
Delay (s)	28.8	57.8	5.5			61.9
Level of Service	C	E	A			E
Approach Delay (s)	55.4		5.5			61.9
Approach LOS	E		A			E

Intersection Summary			
HCM Average Control Delay	48.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	585	204	201	82	193	181	153	1258	75	132	994	453
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	636	222	218	89	210	197	166	1367	82	143	1080	492
RTOR Reduction (vph)	0	0	163	0	0	155	0	0	56	0	0	300
Lane Group Flow (vph)	636	222	55	89	210	42	166	1367	26	143	1080	192
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.1	14.7	14.7	12.5	11.1	11.1	5.5	25.6	25.6	11.2	31.3	31.3
Effective Green, g (s)	16.1	14.7	14.7	12.5	11.1	11.1	5.5	25.6	25.6	11.2	31.3	31.3
Actuated g/C Ratio	0.20	0.18	0.18	0.16	0.14	0.14	0.07	0.32	0.32	0.14	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	691	650	291	536	491	220	236	1627	507	248	1385	619
v/s Ratio Prot	c0.19	0.06		0.03	c0.06		0.05	c0.27		0.08	c0.31	
v/s Ratio Perm			0.03			0.03			0.02			0.12
v/c Ratio	0.92	0.34	0.19	0.17	0.43	0.19	0.70	0.84	0.05	0.58	0.78	0.31
Uniform Delay, d1	31.3	28.4	27.6	29.2	31.5	30.5	36.5	25.3	18.8	32.2	21.3	16.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.02	1.03	1.16	1.00	1.00	1.00
Incremental Delay, d2	17.6	0.3	0.3	0.1	0.6	0.4	5.6	3.3	0.1	3.2	4.4	1.3
Delay (s)	48.9	28.8	27.9	29.4	32.1	30.9	42.8	29.3	22.0	35.4	25.7	18.2
Level of Service	D	C	C	C	C	C	D	C	C	D	C	B
Approach Delay (s)		40.5			31.2			30.3			24.4	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 Weber/Herndon

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: D[26.2]

Street Name:	Weber									Herndon							
Approach:	North Bound					South Bound				East Bound					West Bound		
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	1	0	0	0	0	1	0	0	2	0	1	1	0	1	1	0
Volume Module:																				
Base Vol:	0	0	62			0	0	5			0	1885	83			38	1561	0		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	0	0	62			0	0	5			0	1885	83			38	1561	0		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	0	0	67			0	0	5			0	2049	90			41	1697	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
FinalVolume:	0	0	67			0	0	5			0	2049	90			41	1697	0		
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	6.9			xxxxx	xxxx	6.9			xxxxx	xxxx	xxxxx			4.1	xxxx	xxxxx		
FollowUpTim:	xxxxx	xxxx	3.3			xxxxx	xxxx	3.3			xxxxx	xxxx	xxxxx			2.2	xxxx	xxxxx		
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	1024			xxxx	xxxx	848			xxxx	xxxx	xxxxx			2139	xxxx	xxxxx		
Potent Cap.:	xxxx	xxxx	236			xxxx	xxxx	309			xxxx	xxxx	xxxxx			257	xxxx	xxxxx		
Move Cap.:	xxxx	xxxx	236			xxxx	xxxx	309			xxxx	xxxx	xxxxx			257	xxxx	xxxxx		
Volume/Cap:	xxxx	xxxx	0.29			xxxx	xxxx	0.02			xxxx	xxxx	xxxx			0.16	xxxx	xxxx		
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	1.1			xxxx	xxxx	0.1			xxxx	xxxx	xxxxx			0.6	xxxx	xxxxx		
Control Del:	xxxxx	xxxx	26.2			xxxxx	xxxx	16.9			xxxxx	xxxx	xxxxx			21.7	xxxx	xxxxx		
LOS by Move:	*	*	D			*	*	C			*	*	*			C	*	*		
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*			*	*	*			*	*	*			*	*	*		
ApproachDel:	26.2					16.9					xxxxxx					xxxxxx				
ApproachLOS:	D					C					*					*				

Note: Queue reported is the number of cars per lane.

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	96	35	14	447	1159	136
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	104	38	15	486	1260	148

Direction, Lane #	SE 1	NW 1	NW 2	SW 1	SW 2
Volume Total (vph)	142	15	486	1260	148
Volume Left (vph)	104	0	0	1260	0
Volume Right (vph)	0	0	486	0	148
Hadj (s)	0.18	0.03	-0.67	0.53	-0.67
Departure Headway (s)	7.3	6.9	6.2	7.0	5.8
Degree Utilization, x	0.29	0.03	0.83	2.46	0.24
Capacity (veh/h)	480	511	575	524	602
Control Delay (s)	13.2	8.9	31.6	675.7	9.4
Approach Delay (s)	13.2	30.9		605.7	
Approach LOS	B	D		F	

Intersection Summary			
Delay	424.2		
HCM Level of Service	F		
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	329	1547	165	72	1329	188	210	38	93	224	38	339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	358	1682	179	78	1445	204	228	41	101	243	41	368
RTOR Reduction (vph)	0	0	63	0	0	61	0	0	88	0	0	248
Lane Group Flow (vph)	358	1682	116	78	1445	143	228	41	13	243	41	120
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	24.0	64.5	64.5	8.3	48.8	48.8	16.0	16.0	16.0	16.0	16.0	16.0
Effective Green, g (s)	24.0	64.5	64.5	8.3	48.8	48.8	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio	0.20	0.53	0.53	0.07	0.40	0.40	0.13	0.13	0.13	0.13	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	352	2715	845	122	1430	639	234	247	210	234	247	210
v/s Ratio Prot	c0.20	0.33		0.04	c0.41		0.13	0.02		c0.14	0.02	
v/s Ratio Perm			0.07			0.09			0.01			c0.08
v/c Ratio	1.02	0.62	0.14	0.64	1.01	0.22	0.97	0.17	0.06	1.04	0.17	0.57
Uniform Delay, d1	48.4	19.6	14.2	54.8	36.0	23.6	52.2	46.5	45.8	52.4	46.5	49.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	52.4	0.4	0.1	10.5	26.4	0.2	52.6	1.4	0.6	69.2	0.3	3.7
Delay (s)	100.8	20.0	14.2	65.3	62.4	23.8	104.8	47.9	46.4	121.6	46.8	52.9
Level of Service	F	C	B	E	E	C	F	D	D	F	D	D
Approach Delay (s)		32.6			58.0			82.6			78.1	
Approach LOS		C			E			F			E	

Intersection Summary			
HCM Average Control Delay	51.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	1501	35	81	1326	27	27	55	52	18	34	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1727		3433	1697	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	1727		3433	1697	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	1632	38	88	1441	29	29	60	57	20	37	54
RTOR Reduction (vph)	0	0	19	0	0	11	0	44	0	0	42	0
Lane Group Flow (vph)	137	1632	19	88	1441	18	29	73	0	20	49	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	6.0	35.8	35.8	3.1	32.9	32.9	1.5	16.1		1.5	16.1	
Effective Green, g (s)	6.0	35.8	35.8	3.1	32.9	32.9	1.5	16.1		1.5	16.1	
Actuated g/C Ratio	0.08	0.49	0.49	0.04	0.45	0.45	0.02	0.22		0.02	0.22	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	146	1748	782	147	1606	718	71	384		71	377	
v/s Ratio Prot	c0.08	c0.46		0.03	0.41		c0.01	c0.04		0.01	0.03	
v/s Ratio Perm			0.01			0.01						
v/c Ratio	0.94	0.93	0.02	0.60	0.90	0.03	0.41	0.19		0.28	0.13	
Uniform Delay, d1	33.1	17.2	9.4	34.1	18.2	10.9	35.1	22.9		35.0	22.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	55.5	9.7	0.0	6.4	7.0	0.0	3.8	1.1		2.2	0.7	
Delay (s)	88.6	26.9	9.4	40.5	25.2	11.0	38.9	24.0		37.1	23.3	
Level of Service	F	C	A	D	C	B	D	C		D	C	
Approach Delay (s)		31.2			25.8			26.9			25.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	72.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	1395	161	377	1290	202	153	99	262	221	107	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1660		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1660		3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	1516	175	410	1402	220	166	108	285	240	116	29
RTOR Reduction (vph)	0	0	93	0	0	53	0	106	0	0	0	24
Lane Group Flow (vph)	10	1516	82	410	1402	167	166	287	0	240	116	5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	42.2	42.2	11.0	52.4	52.4	7.0	17.0		7.0	17.0	17.0
Effective Green, g (s)	0.8	42.2	42.2	11.0	52.4	52.4	7.0	17.0		7.0	17.0	17.0
Actuated g/C Ratio	0.01	0.45	0.45	0.12	0.56	0.56	0.08	0.18		0.08	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	29	1602	717	405	1990	890	258	303		258	340	289
v/s Ratio Prot	0.00	c0.43		c0.12	0.40		0.05	c0.17		c0.07	0.06	
v/s Ratio Perm			0.05			0.11						0.00
v/c Ratio	0.34	0.95	0.11	1.01	0.70	0.19	0.64	0.95		0.93	0.34	0.02
Uniform Delay, d1	45.9	24.4	14.7	41.1	14.8	10.0	41.9	37.6		42.9	33.2	31.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.0	12.0	0.1	47.9	1.2	0.1	5.4	39.6		37.6	2.7	0.1
Delay (s)	53.0	36.4	14.8	89.0	15.9	10.1	47.3	77.3		80.4	35.9	31.4
Level of Service	D	D	B	F	B	B	D	E		F	D	C
Approach Delay (s)		34.3			30.0			68.4			63.3	
Approach LOS		C			C			E			E	

Intersection Summary			
HCM Average Control Delay	38.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	93.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	463	1243	177	102	1340	523	179	548	65	571	494	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	503	1351	192	111	1457	568	195	596	71	621	537	363
RTOR Reduction (vph)	0	0	97	0	0	257	0	0	46	0	0	187
Lane Group Flow (vph)	503	1351	95	111	1457	311	195	596	25	621	537	176
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	14.0	36.0	36.0	4.8	26.8	26.8	8.7	17.0	17.0	17.0	25.3	25.3
Effective Green, g (s)	14.0	36.0	36.0	4.8	26.8	26.8	8.7	17.0	17.0	17.0	25.3	25.3
Actuated g/C Ratio	0.15	0.40	0.40	0.05	0.30	0.30	0.10	0.19	0.19	0.19	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	529	2016	628	181	1501	467	329	663	296	643	986	441
v/s Ratio Prot	c0.15	0.27		0.03	c0.29		0.06	c0.17		c0.18	0.15	
v/s Ratio Perm			0.06			0.20			0.02			0.11
v/c Ratio	0.95	0.67	0.15	0.61	0.97	0.67	0.59	0.90	0.09	0.97	0.54	0.40
Uniform Delay, d1	38.1	22.5	17.6	42.1	31.6	28.1	39.4	36.1	30.5	36.6	27.9	26.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.2	0.9	0.1	6.0	16.7	3.6	2.9	17.5	0.6	26.9	2.2	2.7
Delay (s)	65.2	23.4	17.7	48.1	48.3	31.7	42.2	53.5	31.1	63.5	30.0	29.3
Level of Service	E	C	B	D	D	C	D	D	C	E	C	C
Approach Delay (s)		33.2			43.9			49.1			43.5	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	41.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	1872	1	4	1973	66	2	0	4	66	1	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	2035	1	4	2145	72	2	0	4	72	1	12
RTOR Reduction (vph)	0	0	0	0	0	18	0	4	0	0	0	11
Lane Group Flow (vph)	2	2035	1	4	2145	54	2	0	0	72	1	1
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.7	38.1	38.1	0.7	38.1	38.1	5.6	8.2		4.0	6.6	6.6
Effective Green, g (s)	0.7	38.1	38.1	0.7	38.1	38.1	5.6	8.2		4.0	6.6	6.6
Actuated g/C Ratio	0.01	0.57	0.57	0.01	0.57	0.57	0.08	0.12		0.06	0.10	0.10
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	36	2892	900	36	2892	900	287	368		205	184	156
v/s Ratio Prot	0.00	0.40		c0.00	c0.42		0.00	0.00		c0.02	0.00	
v/s Ratio Perm			0.00			0.03						c0.00
v/c Ratio	0.06	0.70	0.00	0.11	0.74	0.06	0.01	0.00		0.35	0.01	0.01
Uniform Delay, d1	32.8	10.4	6.2	32.8	10.8	6.5	28.2	25.8		30.3	27.2	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.8	0.0	1.4	1.1	0.0	0.0	0.0		1.0	0.0	0.0
Delay (s)	33.5	11.2	6.2	34.2	11.8	6.5	28.2	25.8		31.3	27.3	27.3
Level of Service	C	B	A	C	B	A	C	C		C	C	C
Approach Delay (s)		11.2			11.7			26.6			30.7	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1536	377	484	1712	63	344	95	410	28	84	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3435		1770	3521		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.68	1.00	1.00	0.66	1.00	1.00
Satd. Flow (perm)	1770	3435		1770	3521		1267	1863	1583	1226	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1670	410	526	1861	68	374	103	446	30	91	68
RTOR Reduction (vph)	0	18	0	0	2	0	0	0	236	0	0	51
Lane Group Flow (vph)	65	2062	0	526	1927	0	374	103	210	30	91	17
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	4.8	52.8		25.0	73.0		31.0	31.0	31.0	31.0	31.0	31.0
Effective Green, g (s)	4.8	52.8		25.0	73.0		31.0	31.0	31.0	31.0	31.0	31.0
Actuated g/C Ratio	0.04	0.44		0.21	0.60		0.26	0.26	0.26	0.26	0.26	0.26
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	70	1501		366	2128		325	478	406	315	478	406
v/s Ratio Prot	0.04	c0.60		c0.30	0.55			0.06			0.05	
v/s Ratio Perm							c0.30		0.13	0.02		0.01
v/c Ratio	0.93	1.37		1.44	0.91		1.15	0.22	0.52	0.10	0.19	0.04
Uniform Delay, d1	57.8	34.0		47.9	20.9		44.9	35.3	38.5	34.2	35.1	33.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	82.1	172.5		211.7	6.0		97.3	1.0	4.6	0.6	0.9	0.2
Delay (s)	139.9	206.5		259.6	26.9		142.2	36.4	43.1	34.8	36.0	33.9
Level of Service	F	F		F	C		F	D	D	C	D	C
Approach Delay (s)		204.5			76.7			82.5			35.1	
Approach LOS		F			E			F			D	

Intersection Summary			
HCM Average Control Delay	124.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	117.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	223	1813	132	332	2053	390	197	246	254	278	231	344
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	242	1971	143	361	2232	424	214	267	276	302	251	374
RTOR Reduction (vph)	0	0	12	0	0	93	0	0	88	0	0	83
Lane Group Flow (vph)	242	1971	131	361	2232	331	214	267	188	302	251	291
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	65.0	65.0	11.0	69.0	69.0	7.0	18.0	18.0	10.0	21.0	21.0
Effective Green, g (s)	7.0	65.0	65.0	11.0	69.0	69.0	7.0	18.0	18.0	10.0	21.0	21.0
Actuated g/C Ratio	0.06	0.54	0.54	0.09	0.57	0.57	0.06	0.15	0.15	0.08	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	200	1917	857	315	2035	910	200	531	237	286	619	277
v/s Ratio Prot	0.07	0.56		c0.11	c0.63		0.06	0.08		c0.09	0.07	
v/s Ratio Perm			0.08			0.21			0.12			c0.18
v/c Ratio	1.21	1.03	0.15	1.15	1.10	0.36	1.07	0.50	0.80	1.06	0.41	1.05
Uniform Delay, d1	56.5	27.5	13.7	54.5	25.5	13.7	56.5	46.9	49.2	55.0	44.0	49.5
Progression Factor	1.00	1.00	1.00	0.98	0.73	1.28	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	131.7	28.1	0.1	69.5	44.4	0.0	83.4	3.4	23.5	68.7	2.0	67.6
Delay (s)	188.2	55.6	13.8	123.1	63.2	17.6	139.9	50.3	72.7	123.7	45.9	117.1
Level of Service	F	E	B	F	E	B	F	D	E	F	D	F
Approach Delay (s)		66.7			63.9			83.8			100.0	
Approach LOS		E			E			F			F	

Intersection Summary			
HCM Average Control Delay	71.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	2100	177	305	2724	308	166	143	461	214	151	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	2283	192	332	2961	335	180	155	501	233	164	176
RTOR Reduction (vph)	0	0	62	0	0	61	0	0	94	0	0	55
Lane Group Flow (vph)	109	2283	130	332	2961	274	180	155	407	233	164	121
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	55.0	55.0	11.0	62.0	62.0	10.3	24.0	24.0	14.0	27.7	27.7
Effective Green, g (s)	4.0	55.0	55.0	11.0	62.0	62.0	10.3	24.0	24.0	14.0	27.7	27.7
Actuated g/C Ratio	0.03	0.46	0.46	0.09	0.52	0.52	0.09	0.20	0.20	0.12	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2331	726	315	2627	818	295	708	317	207	1174	365
v/s Ratio Prot	0.03	0.45		c0.10	c0.58		0.05	0.04		c0.13	0.03	
v/s Ratio Perm			0.08			0.17			c0.26			c0.08
v/c Ratio	0.96	0.98	0.18	1.05	1.13	0.34	0.61	0.22	1.29	1.13	0.14	0.33
Uniform Delay, d1	57.9	31.9	19.2	54.5	29.0	17.0	52.9	40.2	48.0	53.0	36.7	38.4
Progression Factor	0.98	0.84	1.11	1.15	0.41	0.32	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.0	5.1	0.0	31.9	57.8	0.0	3.7	0.7	150.2	100.4	0.2	2.4
Delay (s)	85.5	32.0	21.4	94.8	69.7	5.5	56.6	40.9	198.2	153.4	36.9	40.8
Level of Service	F	C	C	F	E	A	E	D	F	F	D	D
Approach Delay (s)		33.5			66.1			138.5			85.5	
Approach LOS		C			E			F			F	

Intersection Summary			
HCM Average Control Delay	64.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	943	1714	68	276	2134	217	174	885	180	309	822	1051
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1025	1863	74	300	2320	236	189	962	196	336	893	1142
RTOR Reduction (vph)	0	0	28	0	0	57	0	0	158	0	0	1
Lane Group Flow (vph)	1025	1863	46	300	2320	179	189	962	38	336	893	1141
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	30.0	59.2	59.2	12.8	42.0	42.0	6.0	23.0	23.0	9.0	26.0	56.0
Effective Green, g (s)	30.0	59.2	59.2	12.8	42.0	42.0	6.0	23.0	23.0	9.0	26.0	56.0
Actuated g/C Ratio	0.25	0.49	0.49	0.11	0.35	0.35	0.05	0.19	0.19	0.08	0.22	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	858	2509	781	366	1780	554	172	975	303	257	767	792
v/s Ratio Prot	0.30	0.37		0.09	c0.46		0.06	0.19		c0.10	0.25	c0.36
v/s Ratio Perm			0.03			0.11			0.02			0.36
v/c Ratio	1.19	0.74	0.06	0.82	1.30	0.32	1.10	0.99	0.12	1.31	1.16	1.44
Uniform Delay, d1	45.0	24.3	15.9	52.5	39.0	28.6	57.0	48.3	40.2	55.5	47.0	32.0
Progression Factor	1.32	0.39	0.14	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	88.7	0.1	0.0	13.4	140.7	0.3	97.5	25.8	0.8	163.5	87.9	205.7
Delay (s)	148.3	9.7	2.3	65.8	179.7	28.9	154.5	74.1	41.0	219.0	134.9	237.7
Level of Service	F	A	A	E	F	C	F	E	D	F	F	F
Approach Delay (s)		57.4			155.3			80.6			196.4	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	124.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	121.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	256	1766	358	179	1580	261	220	616	97	287	800	481
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	278	1920	389	195	1717	284	239	670	105	312	870	523
RTOR Reduction (vph)	0	0	143	0	0	91	0	0	81	0	0	89
Lane Group Flow (vph)	278	1920	246	195	1717	193	239	670	24	312	870	434
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	36.0	36.0	5.0	33.0	33.0	7.0	20.9	20.9	12.1	26.0	26.0
Effective Green, g (s)	8.0	36.0	36.0	5.0	33.0	33.0	7.0	20.9	20.9	12.1	26.0	26.0
Actuated g/C Ratio	0.09	0.40	0.40	0.06	0.37	0.37	0.08	0.23	0.23	0.13	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	305	2034	633	191	1865	580	267	1181	368	462	1469	457
v/s Ratio Prot	c0.08	c0.38		0.06	0.34		c0.07	0.13		0.09	0.17	
v/s Ratio Perm			0.16			0.12			0.02			c0.27
v/c Ratio	0.91	0.94	0.39	1.02	0.92	0.33	0.90	0.57	0.07	0.68	0.59	0.95
Uniform Delay, d1	40.6	26.0	19.2	42.5	27.2	20.6	41.1	30.6	26.9	37.1	27.5	31.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.8	9.7	0.4	70.7	8.0	0.3	29.3	2.0	0.3	3.9	1.8	31.3
Delay (s)	70.4	35.8	19.6	113.2	35.2	20.9	70.4	32.5	27.3	41.0	29.2	62.6
Level of Service	E	D	B	F	D	C	E	C	C	D	C	E
Approach Delay (s)		37.0			40.3			40.9			41.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	39.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	620	614	0	0	490	62
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	674	667	0	0	533	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1341		674	674
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1341		674	674
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	85
cM capacity (veh/h)			514		420	455

Direction, Lane #	EB 1	EB 2	NB 1
Volume Total	674	667	600
Volume Left	0	0	533
Volume Right	0	667	67
cSH	1700	1700	431
Volume to Capacity	0.40	0.39	1.39
Queue Length 95th (ft)	0	0	722
Control Delay (s)	0.0	0.0	215.3
Lane LOS			F
Approach Delay (s)	0.0		215.3
Approach LOS			F

Intersection Summary			
Average Delay	66.5		
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (vph)	13	2	112	27	20	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	2	122	29	22	154
RTOR Reduction (vph)	0	1	0	0	0	131
Lane Group Flow (vph)	14	1	122	29	22	23
Turn Type		Perm	Prot			custom
Protected Phases	2		1	6	3	
Permitted Phases		2				8
Actuated Green, G (s)	11.2	11.2	4.6	19.8	5.0	5.0
Effective Green, g (s)	11.2	11.2	4.6	19.8	5.0	5.0
Actuated g/C Ratio	0.34	0.34	0.14	0.60	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	636	541	248	2136	270	241
v/s Ratio Prot	c0.01		c0.07	0.01	0.01	
v/s Ratio Perm		0.00				c0.01
v/c Ratio	0.02	0.00	0.49	0.01	0.08	0.10
Uniform Delay, d1	7.2	7.1	13.0	2.6	11.9	12.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.0	1.5	0.0	0.1	0.2
Delay (s)	7.2	7.1	14.6	2.6	12.1	12.1
Level of Service	A	A	B	A	B	B
Approach Delay (s)	7.2			12.3	12.1	
Approach LOS	A			B	B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.14		
Actuated Cycle Length (s)	32.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	28.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	49	127	52	27	132	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	138	57	29	143	65

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	53	138	86	209
Volume Left (vph)	53	0	0	143
Volume Right (vph)	0	138	29	0
Hadj (s)	0.53	-0.67	-0.17	0.17
Departure Headway (s)	5.7	4.5	4.4	4.6
Degree Utilization, x	0.08	0.17	0.11	0.27
Capacity (veh/h)	598	750	763	741
Control Delay (s)	8.1	7.3	8.0	9.3
Approach Delay (s)	7.5		8.0	9.3
Approach LOS	A		A	A

Intersection Summary			
Delay	8.4		
HCM Level of Service	A		
Intersection Capacity Utilization	28.6%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Polk/Sierra

Cycle (sec):	100	Critical Vol./Cap.(X):	0.605
Loss Time (sec):	0	Average Delay (sec/veh):	14.4
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk								Dante					
Approach:	North Bound			South Bound			East Bound			West Bound				
Movement:	L	T	R	L	T	R	L	T	R	L	T	R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign				
Rights:	Include			Include			Include			Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0		
Lanes:	1 0 0 1 0			1 0 1 0 1			1 0 0 1 0			1 0 1 0 1				
Volume Module:														
Base Vol:	53	282	24	99	305	52	34	51	12	12	66	82		
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Initial Bse:	53	282	24	99	305	52	34	51	12	12	66	82		
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
PHF Volume:	58	307	26	108	332	57	37	55	13	13	72	89		
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0		
Reduced Vol:	58	307	26	108	332	57	37	55	13	13	72	89		
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
FinalVolume:	58	307	26	108	332	57	37	55	13	13	72	89		
Saturation Flow Module:														
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Lanes:	1.00	0.92	0.08	1.00	1.00	1.00	1.00	0.81	0.19	1.00	1.00	1.00		
Final Sat.:	524	533	45	503	548	602	437	384	90	423	452	496		
Capacity Analysis Module:														
Vol/Sat:	0.11	0.57	0.57	0.21	0.61	0.09	0.08	0.14	0.14	0.03	0.16	0.18		
Crit Moves:		****			****			****				****		
Delay/Veh:	10.1	16.1	16.1	11.4	18.1	9.0	10.9	10.7	10.7	10.8	11.3	10.7		
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
AdjDel/Veh:	10.1	16.1	16.1	11.4	18.1	9.0	10.9	10.7	10.7	10.8	11.3	10.7		
LOS by Move:	B	C	C	B	C	A	B	B	B	B	B	B		
ApproachDel:		15.2			15.6			10.8			10.9			
Delay Adj:		1.00			1.00			1.00			1.00			
ApprAdjDel:		15.2			15.6			10.8			10.9			
LOS by Appr:		C			C			B			B			
AllWayAvgQ:	0.1	1.2	1.2	0.3	1.4	0.1	0.1	0.1	0.1	0.0	0.2	0.2		

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	3	3	14	5	73	7	330	0	68	427	43
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	50	3	3	15	5	79	8	359	0	74	464	47
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			4			4						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	872	1009	488	989	1033	179	511			359		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	872	1009	488	989	1033	179	511			359		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	76	99	99	92	97	90	99			94		
cM capacity (veh/h)	206	222	526	187	215	833	1051			1197		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	50	7	15	85	8	179	179	0	74	511
Volume Left	50	0	15	0	8	0	0	0	74	0
Volume Right	0	3	0	79	0	0	0	0	0	47
cSH	206	445	187	890	1051	1700	1700	1700	1197	1700
Volume to Capacity	0.24	0.01	0.08	0.10	0.01	0.11	0.11	0.00	0.06	0.30
Queue Length 95th (ft)	23	1	7	8	1	0	0	0	5	0
Control Delay (s)	28.0	16.7	25.9	10.6	8.5	0.0	0.0	0.0	8.2	0.0
Lane LOS	D	C	D	B	A				A	
Approach Delay (s)	26.7		12.9		0.2				1.0	
Approach LOS	D		B							

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	13	39	378	25	105	749
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	42	411	27	114	814

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	57	411	27	114	814
Volume Left (vph)	0	411	0	114	0
Volume Right (vph)	42	0	0	0	814
Hadj (s)	-0.42	0.53	0.03	0.53	-0.67
Departure Headway (s)	6.7	7.2	6.7	6.8	5.5
Degree Utilization, x	0.11	0.82	0.05	0.21	1.25
Capacity (veh/h)	521	499	531	519	657
Control Delay (s)	10.5	33.4	8.8	10.4	144.8
Approach Delay (s)	10.5	31.9		128.2	
Approach LOS	B	D		F	

Intersection Summary			
Delay	93.9		
HCM Level of Service	F		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	156	188	17	8	201	640	21	19	9	280	13	107
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	170	204	18	9	218	696	23	21	10	304	14	116

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	272	121	227	696	53	435
Volume Left (vph)	170	0	9	0	23	304
Volume Right (vph)	0	18	0	696	10	116
Hadj (s)	0.35	-0.07	0.05	-0.67	0.01	0.01
Departure Headway (s)	7.9	7.5	7.3	6.5	8.3	6.8
Degree Utilization, x	0.60	0.25	0.46	1.26	0.12	0.82
Capacity (veh/h)	435	467	489	560	397	519
Control Delay (s)	20.7	11.8	15.0	150.6	12.4	34.1
Approach Delay (s)	18.0		117.2		12.4	34.1
Approach LOS	C		F		B	D

Intersection Summary			
Delay	72.5		
HCM Level of Service	F		
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.483
Loss Time (sec):	0	Average Delay (sec/veh):	12.7
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk						Dante					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1	0	1	1 0 1	0	1	1 0 2	0	1	1 0 2	0	1
Volume Module:												
Base Vol:	62	7	10	36	15	30	112	498	62	62	296	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	62	7	10	36	15	30	112	498	62	62	296	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	67	8	11	39	16	33	122	541	67	67	322	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	8	11	39	16	33	122	541	67	67	322	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	67	8	11	39	16	33	122	541	67	67	322	54
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	397	416	453	395	416	454	517	1121	621	476	1028	565
Capacity Analysis Module:												
Vol/Sat:	0.17	0.02	0.02	0.10	0.04	0.07	0.24	0.48	0.11	0.14	0.31	0.10
Crit Moves:	****			****				****			****	
Delay/Veh:	12.5	10.6	10.0	11.8	10.8	10.3	11.5	14.5	8.9	11.1	12.3	9.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.5	10.6	10.0	11.8	10.8	10.3	11.5	14.5	8.9	11.1	12.3	9.3
LOS by Move:	B	B	A	B	B	B	B	B	A	B	B	A
ApproachDel:	12.0			11.1			13.4			11.8		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	12.0			11.1			13.4			11.8		
LOS by Appr:	B			B			B			B		
AllWayAvgQ:	0.2	0.0	0.0	0.1	0.0	0.1	0.3	0.9	0.1	0.1	0.4	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	736	80	165	903	72	178	839	163	83	826	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3500		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3500		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	210	800	87	179	982	78	193	912	177	90	898	135
RTOR Reduction (vph)	0	0	39	0	5	0	0	0	39	0	0	36
Lane Group Flow (vph)	210	800	48	179	1055	0	193	912	139	90	898	99
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	15.9	44.0	44.0	11.0	39.1		11.0	33.0	33.0	6.0	28.0	28.0
Effective Green, g (s)	15.9	44.0	44.0	11.0	39.1		11.0	33.0	33.0	6.0	28.0	28.0
Actuated g/C Ratio	0.14	0.40	0.40	0.10	0.36		0.10	0.30	0.30	0.05	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	256	745	633	177	1244		177	1062	475	97	901	403
v/s Ratio Prot	c0.12	c0.43		c0.10	0.30		c0.11	0.26		0.05	c0.25	
v/s Ratio Perm			0.03						0.09			0.06
v/c Ratio	0.82	1.07	0.08	1.01	0.85		1.09	0.86	0.29	0.93	1.00	0.25
Uniform Delay, d1	45.7	33.0	20.4	49.5	32.7		49.5	36.3	29.5	51.8	41.0	32.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.6	54.6	0.1	70.6	5.6		93.8	7.0	0.3	67.5	29.0	0.3
Delay (s)	64.2	87.6	20.5	120.1	38.3		143.3	43.4	29.9	119.3	69.9	32.9
Level of Service	E	F	C	F	D		F	D	C	F	E	C
Approach Delay (s)		77.8			50.1			56.5			69.4	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM Average Control Delay	62.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	38	25	6	4	60	93	12	202	2	76	222	56
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	41	27	7	4	65	101	13	220	2	83	241	61
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	786	654	241	672	713	220	302			222		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	786	654	241	672	713	220	302			222		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	81	92	99	99	80	88	99			94		
cM capacity (veh/h)	218	359	798	327	332	820	1259			1347		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	75	171	233	2	324	61
Volume Left	41	4	13	0	83	0
Volume Right	7	101	0	2	0	61
cSH	275	512	1259	1700	1347	1700
Volume to Capacity	0.27	0.33	0.01	0.00	0.06	0.04
Queue Length 95th (ft)	27	36	1	0	5	0
Control Delay (s)	23.0	15.5	0.5	0.0	2.4	0.0
Lane LOS	C	C	A		A	
Approach Delay (s)	23.0	15.5	0.5		2.0	
Approach LOS	C	C				

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	812	275	503	1496	101	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	883	299	547	1626	110	317
RTOR Reduction (vph)	0	112	0	0	0	272
Lane Group Flow (vph)	883	187	547	1626	110	45
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	55.0	55.0	36.0	95.0	17.0	17.0
Effective Green, g (s)	55.0	55.0	36.0	95.0	17.0	17.0
Actuated g/C Ratio	0.46	0.46	0.30	0.79	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	854	726	531	2802	251	224
v/s Ratio Prot	c0.47		c0.31	0.46	c0.06	
v/s Ratio Perm		0.12				0.03
v/c Ratio	1.03	0.26	1.03	0.58	0.44	0.20
Uniform Delay, d1	32.5	20.0	42.0	4.8	47.1	45.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.9	0.2	47.0	0.3	5.5	2.0
Delay (s)	72.4	20.2	89.0	5.1	52.6	47.5
Level of Service	E	C	F	A	D	D
Approach Delay (s)	59.2			26.2	48.8	
Approach LOS	E			C	D	

Intersection Summary			
HCM Average Control Delay	39.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (vph)	67	1084	1646	364	328	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	1178	1789	396	357	351
RTOR Reduction (vph)	0	0	0	168	0	113
Lane Group Flow (vph)	73	1178	1789	228	357	238
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	5.6	61.4	51.8	51.8	20.6	20.6
Effective Green, g (s)	5.6	61.4	51.8	51.8	20.6	20.6
Actuated g/C Ratio	0.06	0.68	0.58	0.58	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	110	1271	2037	911	405	362
v/s Ratio Prot	0.04	c0.63	0.51		c0.20	
v/s Ratio Perm				0.14		0.15
v/c Ratio	0.66	0.93	0.88	0.25	0.88	0.66
Uniform Delay, d1	41.3	12.4	16.4	9.5	33.5	31.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.1	11.6	4.7	0.1	23.1	9.1
Delay (s)	55.3	23.9	21.0	9.6	56.6	40.6
Level of Service	E	C	C	A	E	D
Approach Delay (s)		25.8	19.0		48.6	
Approach LOS		C	B		D	

Intersection Summary			
HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	46	1312	52	434	1747	281	211	278	43	46	592	892
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	1426	57	472	1899	305	229	302	47	50	643	970
RTOR Reduction (vph)	0	0	18	0	0	79	0	0	31	0	0	218
Lane Group Flow (vph)	50	1426	39	472	1899	226	229	302	16	50	643	752
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	4.0	35.0	35.0	21.0	52.0	52.0	11.0	41.7	41.7	6.3	37.0	37.0
Effective Green, g (s)	4.0	35.0	35.0	21.0	52.0	52.0	11.0	41.7	41.7	6.3	37.0	37.0
Actuated g/C Ratio	0.03	0.29	0.29	0.18	0.43	0.43	0.09	0.35	0.35	0.05	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	59	1032	462	310	1534	686	162	1230	550	93	1091	488
v/s Ratio Prot	0.03	c0.40		c0.27	0.54		c0.13	0.09		0.03	0.18	
v/s Ratio Perm			0.02			0.14			0.01			c0.48
v/c Ratio	0.85	1.38	0.08	1.52	1.24	0.33	1.41	0.25	0.03	0.54	0.59	1.54
Uniform Delay, d1	57.7	42.5	30.9	49.5	34.0	22.5	54.5	27.9	25.8	55.4	35.1	41.5
Progression Factor	1.00	1.00	1.00	0.61	0.97	1.03	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	64.8	177.9	0.1	243.4	110.1	0.1	218.5	0.5	0.1	5.9	2.3	253.6
Delay (s)	122.5	220.4	30.9	273.3	143.1	23.2	273.0	28.4	25.9	61.3	37.4	295.1
Level of Service	F	F	C	F	F	C	F	C	C	E	D	F
Approach Delay (s)		210.2			152.4			125.1			188.5	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	173.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	113.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	1705	151	205	1819	247	276	772	151	436	442	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	1853	164	223	1977	268	300	839	164	474	480	185
RTOR Reduction (vph)	0	0	45	0	0	64	0	0	56	0	0	100
Lane Group Flow (vph)	315	1853	119	223	1977	204	300	839	109	474	480	85
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.0	49.0	49.0	8.0	46.0	46.0	14.6	30.0	30.0	17.0	32.4	32.4
Effective Green, g (s)	11.0	49.0	49.0	8.0	46.0	46.0	14.6	30.0	30.0	17.0	32.4	32.4
Actuated g/C Ratio	0.09	0.41	0.41	0.07	0.38	0.38	0.12	0.25	0.25	0.14	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	315	2076	646	229	1949	607	418	885	396	486	956	427
v/s Ratio Prot	c0.09	c0.36		0.06	c0.39		0.09	c0.24		c0.14	0.14	
v/s Ratio Perm			0.08			0.13			0.07			0.05
v/c Ratio	1.00	0.89	0.18	0.97	1.01	0.34	0.72	0.95	0.27	0.98	0.50	0.20
Uniform Delay, d1	54.5	33.0	22.7	55.9	37.0	26.2	50.7	44.2	36.2	51.3	37.0	33.8
Progression Factor	1.11	0.72	0.77	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.2	0.5	0.0	51.7	24.0	0.3	5.8	20.0	1.7	34.2	1.9	1.0
Delay (s)	75.9	24.3	17.6	107.6	61.0	26.5	56.5	64.2	37.9	85.5	38.9	34.8
Level of Service	E	C	B	F	E	C	E	E	D	F	D	C
Approach Delay (s)		30.8			61.5			59.1			57.6	
Approach LOS		C			E			E			E	

Intersection Summary			
HCM Average Control Delay	50.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	573	1473	222	310	1513	171	432	671	189	219	444	425
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	623	1601	241	337	1645	186	470	729	205	238	483	462
RTOR Reduction (vph)	0	0	105	0	0	89	0	0	111	0	0	218
Lane Group Flow (vph)	623	1601	136	337	1645	97	470	729	94	238	483	244
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.0	34.1	34.1	10.9	29.0	29.0	12.0	22.0	22.0	7.0	17.0	17.0
Effective Green, g (s)	16.0	34.1	34.1	10.9	29.0	29.0	12.0	22.0	22.0	7.0	17.0	17.0
Actuated g/C Ratio	0.18	0.38	0.38	0.12	0.32	0.32	0.13	0.24	0.24	0.08	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	610	1927	600	416	1639	510	458	865	387	267	668	299
v/s Ratio Prot	c0.18	0.31		0.10	c0.32		c0.14	c0.21		0.07	0.14	
v/s Ratio Perm			0.09			0.06			0.06			0.15
v/c Ratio	1.02	0.83	0.23	0.81	1.00	0.19	1.03	0.84	0.24	0.89	0.72	0.82
Uniform Delay, d1	37.0	25.3	19.0	38.5	30.5	22.0	39.0	32.4	27.3	41.1	34.3	35.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	41.9	3.2	0.2	11.3	23.1	0.2	48.9	9.8	1.5	28.7	6.7	21.2
Delay (s)	78.9	28.5	19.2	49.9	53.6	22.2	87.9	42.2	28.8	69.8	41.0	56.2
Level of Service	E	C	B	D	D	C	F	D	C	E	D	E
Approach Delay (s)		40.4			50.3			55.5			52.7	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	48.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	224	1416	125	264	1574	116	232	354	130	134	490	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	243	1539	136	287	1711	126	252	385	141	146	533	190
RTOR Reduction (vph)	0	0	88	0	0	62	0	0	103	0	0	135
Lane Group Flow (vph)	243	1539	48	287	1711	64	252	385	38	146	533	55
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	25.0	25.0	6.0	25.0	25.0	6.0	19.0	19.0	4.8	17.8	17.8
Effective Green, g (s)	6.0	25.0	25.0	6.0	25.0	25.0	6.0	19.0	19.0	4.8	17.8	17.8
Actuated g/C Ratio	0.08	0.35	0.35	0.08	0.35	0.35	0.08	0.27	0.27	0.07	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	291	1796	559	291	1796	559	291	950	425	233	890	398
v/s Ratio Prot	0.07	0.30		c0.08	c0.34		c0.07	0.11		0.04	c0.15	
v/s Ratio Perm			0.03			0.04			0.02			0.03
v/c Ratio	0.84	0.86	0.09	0.99	0.95	0.11	0.87	0.41	0.09	0.63	0.60	0.14
Uniform Delay, d1	31.9	21.2	15.3	32.4	22.3	15.4	32.0	21.3	19.4	32.1	23.4	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.3	4.3	0.1	48.5	11.9	0.1	22.6	1.3	0.4	5.2	3.0	0.7
Delay (s)	50.2	25.5	15.3	80.9	34.2	15.5	54.6	22.5	19.8	37.3	26.3	21.3
Level of Service	D	C	B	F	C	B	D	C	B	D	C	C
Approach Delay (s)		27.9			39.4			32.4			27.1	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	32.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1044	65	382	1202	0	51	0	499	158	108	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.93	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3295	
Flt Permitted		1.00	1.00	0.95	1.00		0.61		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1142		1583	1770	3295	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1135	71	415	1307	0	55	0	542	172	117	100
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	375	0	64	0
Lane Group Flow (vph)	0	1135	44	415	1307	0	55	0	167	172	153	0
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		27.4	27.4	20.8	52.2		18.0		18.0	18.0	18.0	
Effective Green, g (s)		27.4	27.4	20.8	52.2		18.0		18.0	18.0	18.0	
Actuated g/C Ratio		0.35	0.35	0.27	0.67		0.23		0.23	0.23	0.23	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1240	555	471	2362		263		364	407	758	
v/s Ratio Prot		c0.32		c0.23	0.37						0.05	
v/s Ratio Perm			0.03				0.05		c0.11	0.10		
v/c Ratio		0.92	0.08	0.88	0.55		0.21		0.46	0.42	0.20	
Uniform Delay, d1		24.3	17.0	27.5	6.9		24.3		25.9	25.7	24.3	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		10.5	0.1	17.3	0.3		0.4		0.9	3.2	0.6	
Delay (s)		34.8	17.0	44.8	7.1		24.7		26.8	28.9	24.9	
Level of Service		C	B	D	A		C		C	C	C	
Approach Delay (s)		33.8			16.2			26.6			26.7	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	1116	0	0	930	698	582	21	841	201	0	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1483	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.45		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1483	1504	1619		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	1213	0	0	1011	759	633	23	914	218	0	407
RTOR Reduction (vph)	0	0	0	0	0	188	0	36	36	0	0	192
Lane Group Flow (vph)	261	1213	0	0	1011	571	544	487	467	218	0	215
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	15.0	54.0			35.0	35.0	38.0	38.0	38.0	16.0		16.0
Effective Green, g (s)	15.0	54.0			35.0	35.0	38.0	38.0	38.0	16.0		16.0
Actuated g/C Ratio	0.12	0.45			0.29	0.29	0.32	0.32	0.32	0.13		0.13
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	221	1593			1032	462	532	470	476	216		211
v/s Ratio Prot	c0.15	0.34			0.29		0.32	c0.33				
v/s Ratio Perm						c0.36			0.31	0.13		c0.14
v/c Ratio	1.18	0.76			0.98	1.24	1.02	1.04	0.98	1.01		1.02
Uniform Delay, d1	52.5	27.6			42.1	42.5	41.0	41.0	40.7	52.0		52.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	118.1	2.2			22.9	123.3	44.9	51.5	37.0	63.6		66.4
Delay (s)	170.6	29.8			65.0	165.8	85.9	92.5	77.7	115.6		118.4
Level of Service	F	C			E	F	F	F	E	F		F
Approach Delay (s)		54.7			108.2			85.4			117.5	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	88.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Scenario 2 – Phase 1B and 1C

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (vph)	105	32	12	508	1118	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1794	1863	1583	3433	1583
Flt Permitted		0.79	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1471	1863	1583	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	35	13	552	1215	167
RTOR Reduction (vph)	0	0	0	299	0	60
Lane Group Flow (vph)	0	149	13	253	1215	107
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)		41.3	41.3	41.3	40.7	40.7
Effective Green, g (s)		41.3	41.3	41.3	40.7	40.7
Actuated g/C Ratio		0.46	0.46	0.46	0.45	0.45
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		675	855	726	1552	716
v/s Ratio Prot			0.01			
v/s Ratio Perm		0.10		c0.16	c0.35	0.07
v/c Ratio		0.22	0.02	0.35	0.78	0.15
Uniform Delay, d1		14.7	13.3	15.7	20.9	14.5
Progression Factor		1.00	0.67	4.73	0.80	0.46
Incremental Delay, d2		0.8	0.0	1.3	0.7	0.0
Delay (s)		15.4	8.9	75.5	17.3	6.7
Level of Service		B	A	E	B	A
Approach Delay (s)		15.4	74.0		16.0	
Approach LOS		B	E		B	

Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	55	735	635	0	0	1337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	799	690	0	0	1453
RTOR Reduction (vph)	0	483	0	0	0	0
Lane Group Flow (vph)	60	316	690	0	0	1453
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	13.3	13.3	68.7			68.7
Effective Green, g (s)	13.3	13.3	68.7			68.7
Actuated g/C Ratio	0.15	0.15	0.76			0.76
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	262	412	1422			1422
v/s Ratio Prot	0.03		0.37			c0.78
v/s Ratio Perm		c0.11				
v/c Ratio	0.23	0.77	0.49			1.02
Uniform Delay, d1	33.8	36.9	4.0			10.6
Progression Factor	1.00	1.00	0.35			1.71
Incremental Delay, d2	2.0	12.8	0.2			26.4
Delay (s)	35.9	49.6	1.6			44.7
Level of Service	D	D	A			D
Approach Delay (s)	48.7		1.6			44.7
Approach LOS	D		A			D

Intersection Summary			
HCM Average Control Delay	35.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	390	107	285	62	200	93	190	1077	59	128	1009	620
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	424	116	310	67	217	101	207	1171	64	139	1097	674
RTOR Reduction (vph)	0	0	173	0	0	88	0	0	41	0	0	437
Lane Group Flow (vph)	424	116	137	67	217	13	207	1171	23	139	1097	237
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			
Actuated Green, G (s)	18.4	16.4	16.4	13.5	11.5	11.5	7.2	32.7	32.7	11.4	36.9	18.4
Effective Green, g (s)	18.4	16.4	16.4	13.5	11.5	11.5	7.2	32.7	32.7	11.4	36.9	18.4
Actuated g/C Ratio	0.20	0.18	0.18	0.15	0.13	0.13	0.08	0.36	0.36	0.13	0.41	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	702	645	288	515	452	202	275	1848	575	224	1451	324
v/s Ratio Prot	0.12	0.03		0.02	c0.06		0.06	0.23		c0.08	c0.31	c0.15
v/s Ratio Perm			0.09			0.01			0.01			
v/c Ratio	0.60	0.18	0.47	0.13	0.48	0.06	0.75	0.63	0.04	0.62	0.76	0.73
Uniform Delay, d1	32.5	31.1	32.9	33.2	36.5	34.5	40.5	23.7	18.5	37.2	22.7	33.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.88	0.89	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	1.2	0.1	0.8	0.1	8.3	1.2	0.1	5.3	3.7	8.3
Delay (s)	34.0	31.2	34.2	33.3	37.3	34.7	46.5	22.0	16.6	42.5	26.4	41.8
Level of Service	C	C	C	C	D	C	D	C	B	D	C	D
Approach Delay (s)		33.7			35.9			25.3			33.0	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #1 Weber/Herndon
******************************************************************************
Average Delay (sec/veh):      0.2       Worst Case Level Of Service: C[ 15.0]
******************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  1! 0  0    0  1  2  0  1    0  1  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    29     0    0     0     0 1427   136    19 1796     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0    29     0    0     0     0 1427   136    19 1796     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    32     0    0     0     0 1551   148    21 1952     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    32     0    0     0     0 1551   148    21 1952     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9   7.5  6.5   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3   3.5  4.0   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   517  2511 3692   488  xxxx xxxx xxxxx  1699 xxxx xxxxx
Potent Cap.: xxxx xxxx   508    15    5   531  xxxx xxxx xxxxx   380 xxxx xxxxx
Move Cap.:   xxxx xxxx   508    13    5   531  xxxx xxxx xxxxx   380 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.06  0.00 0.00  0.00  xxxx xxxx  xxxx  0.05 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.2  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.2 xxxx xxxxx
Control Del:xxxxx xxxx  12.5 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  15.0 xxxx xxxxx
LOS by Move:    *    *     B     *    *     *     *    *     *     C    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx   0.2 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.2 xxxx xxxxx  15.0 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     A    *     *     C    *     *
ApproachDel:      12.5           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	326	974	311	123	1367	223	387	19	216	206	33	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	354	1059	338	134	1486	242	421	21	235	224	36	339
RTOR Reduction (vph)	0	0	143	0	0	152	0	0	164	0	0	210
Lane Group Flow (vph)	354	1059	195	134	1486	90	421	21	71	224	36	129
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	24.2	45.9	6.8	23.0	23.0	21.7	24.0	24.0	8.7	11.0	11.0
Effective Green, g (s)	8.0	24.2	45.9	6.8	23.0	23.0	21.7	24.0	24.0	8.7	11.0	11.0
Actuated g/C Ratio	0.10	0.30	0.58	0.09	0.29	0.29	0.27	0.30	0.30	0.11	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	345	1544	912	293	1467	457	935	561	477	375	257	218
v/s Ratio Prot	c0.10	0.21	0.06	0.04	c0.29		c0.12	0.01		c0.07	0.02	
v/s Ratio Perm			0.06			0.06			0.04			c0.08
v/c Ratio	1.03	0.69	0.21	0.46	1.01	0.20	0.45	0.04	0.15	0.60	0.14	0.59
Uniform Delay, d1	35.8	24.4	8.2	34.7	28.4	21.4	24.1	19.7	20.4	33.8	30.2	32.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	55.3	1.3	0.1	1.1	26.7	0.2	1.6	0.1	0.7	2.6	0.3	4.2
Delay (s)	91.2	25.7	8.3	35.8	55.1	21.6	25.6	19.8	21.0	36.4	30.4	36.5
Level of Service	F	C	A	D	E	C	C	B	C	D	C	D
Approach Delay (s)		35.6			49.4			23.8			36.1	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	39.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	79.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	1098	9	162	1290	12	54	34	114	21	129	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1648		3433	1715	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	1648		3433	1715	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	1193	10	176	1402	13	59	37	124	23	140	157
RTOR Reduction (vph)	0	0	6	0	0	8	0	86	0	0	66	0
Lane Group Flow (vph)	73	1193	4	176	1402	5	59	75	0	23	231	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	2.3	21.9	21.9	4.0	23.6	23.6	2.3	19.1		0.8	17.6	
Effective Green, g (s)	2.3	21.9	21.9	4.0	23.6	23.6	2.3	19.1		0.8	17.6	
Actuated g/C Ratio	0.04	0.35	0.35	0.06	0.38	0.38	0.04	0.31		0.01	0.28	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	66	1254	561	222	1351	605	128	509		44	488	
v/s Ratio Prot	0.04	0.34		c0.05	c0.40		c0.02	0.05		0.01	c0.13	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	1.11	0.95	0.01	0.79	1.04	0.01	0.46	0.15		0.52	0.47	
Uniform Delay, d1	29.7	19.4	12.9	28.5	19.1	11.8	29.1	15.5		30.3	18.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	142.8	15.2	0.0	17.4	34.8	0.0	2.6	0.6		10.8	3.3	
Delay (s)	172.5	34.7	12.9	45.9	53.9	11.8	31.8	16.1		41.1	21.5	
Level of Service	F	C	B	D	D	B	C	B		D	C	
Approach Delay (s)		42.4			52.7			20.3			22.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	44.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1180	118	110	1295	99	141	32	308	171	67	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1610		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1610		3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	1283	128	120	1408	108	153	35	335	186	73	29
RTOR Reduction (vph)	0	0	71	0	0	32	0	95	0	0	0	23
Lane Group Flow (vph)	8	1283	57	120	1408	76	153	275	0	186	73	6
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	33.6	33.6	3.1	35.9	35.9	6.0	17.1		5.0	16.1	16.1
Effective Green, g (s)	0.8	33.6	33.6	3.1	35.9	35.9	6.0	17.1		5.0	16.1	16.1
Actuated g/C Ratio	0.01	0.45	0.45	0.04	0.48	0.48	0.08	0.23		0.07	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	37	1590	711	142	1699	760	275	368		229	401	341
v/s Ratio Prot	0.00	0.36		c0.03	c0.40		0.04	c0.17		c0.05	0.04	
v/s Ratio Perm			0.04			0.05						0.00
v/c Ratio	0.22	0.81	0.08	0.85	0.83	0.10	0.56	0.75		0.81	0.18	0.02
Uniform Delay, d1	36.7	17.8	11.8	35.6	16.8	10.6	33.1	26.8		34.4	24.0	23.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.9	3.1	0.0	34.4	3.5	0.1	2.4	13.0		19.3	1.0	0.1
Delay (s)	39.6	20.9	11.8	70.0	20.3	10.7	35.6	39.8		53.7	25.0	23.2
Level of Service	D	C	B	E	C	B	D	D		D	C	C
Approach Delay (s)		20.2			23.3			38.6			43.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	258	1246	173	90	1052	268	154	286	147	487	397	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	280	1354	188	98	1143	291	167	311	160	529	432	301
RTOR Reduction (vph)	0	0	131	0	0	217	0	0	121	0	0	138
Lane Group Flow (vph)	280	1354	57	98	1143	74	167	311	39	529	432	163
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	19.6	19.6	3.2	16.8	16.8	6.8	16.0	16.0	11.0	20.2	20.2
Effective Green, g (s)	6.0	19.6	19.6	3.2	16.8	16.8	6.8	16.0	16.0	11.0	20.2	20.2
Actuated g/C Ratio	0.09	0.30	0.30	0.05	0.26	0.26	0.10	0.24	0.24	0.17	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	313	1515	472	167	1298	404	355	861	385	574	1086	486
v/s Ratio Prot	c0.08	c0.27		0.03	0.22		0.05	0.09		c0.15	c0.12	
v/s Ratio Perm			0.04			0.05			0.02			0.10
v/c Ratio	0.89	0.89	0.12	0.59	0.88	0.18	0.47	0.36	0.10	0.92	0.40	0.34
Uniform Delay, d1	29.6	22.1	16.8	30.7	23.5	19.1	27.8	20.7	19.3	27.0	18.0	17.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.0	7.2	0.1	5.2	7.3	0.2	1.0	1.2	0.5	20.4	1.1	1.9
Delay (s)	55.6	29.3	16.9	35.8	30.8	19.4	28.8	21.8	19.8	47.4	19.1	19.5
Level of Service	E	C	B	D	C	B	C	C	B	D	B	B
Approach Delay (s)		32.0			29.0			23.2			31.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1887	1	2	1412	56	0	1	0	56	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor		0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt		1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)		5085	1583	3433	5085	1583		3539		3433		1583
Flt Permitted		1.00	1.00	0.95	1.00	1.00		1.00		0.76		1.00
Satd. Flow (perm)		5085	1583	3433	5085	1583		3539		2736		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2051	1	2	1535	61	0	1	0	61	0	1
RTOR Reduction (vph)	0	0	0	0	0	20	0	0	0	0	0	1
Lane Group Flow (vph)	0	2051	1	2	1535	41	0	1	0	61	0	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		6
Actuated Green, G (s)		26.1	26.1	0.6	30.7	30.7		6.5		6.5		6.5
Effective Green, g (s)		26.1	26.1	0.6	30.7	30.7		6.5		6.5		6.5
Actuated g/C Ratio		0.58	0.58	0.01	0.68	0.68		0.14		0.14		0.14
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)		2936	914	46	3454	1075		509		393		228
v/s Ratio Prot		c0.40		0.00	c0.30			0.00				
v/s Ratio Perm			0.00			0.03				c0.02		0.00
v/c Ratio		0.70	0.00	0.04	0.44	0.04		0.00		0.16		0.00
Uniform Delay, d1		6.8	4.0	22.0	3.3	2.4		16.6		16.9		16.6
Progression Factor		1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2		0.7	0.0	0.4	0.1	0.0		0.0		0.2		0.0
Delay (s)		7.5	4.0	22.4	3.4	2.4		16.6		17.1		16.6
Level of Service		A	A	C	A	A		B		B		B
Approach Delay (s)		7.5			3.4			16.6			17.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	1677	210	370	1214	25	167	98	421	66	94	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3480		3433	3529		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.65	1.00	1.00	0.64	1.00	1.00
Satd. Flow (perm)	1770	3480		3433	3529		1216	1863	1583	1195	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	1823	228	402	1320	27	182	107	458	72	102	50
RTOR Reduction (vph)	0	9	0	0	1	0	0	0	139	0	0	40
Lane Group Flow (vph)	82	2042	0	402	1346	0	182	107	319	72	102	10
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	8.2	62.8		13.0	67.6		23.0	23.0	23.0	23.0	23.0	23.0
Effective Green, g (s)	8.2	62.8		13.0	67.6		23.0	23.0	23.0	23.0	23.0	23.0
Actuated g/C Ratio	0.07	0.57		0.12	0.61		0.21	0.21	0.21	0.21	0.21	0.21
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	131	1972		403	2153		252	387	329	248	387	329
v/s Ratio Prot	0.05	c0.59		c0.12	0.38			0.06			0.05	
v/s Ratio Perm							0.15		c0.20	0.06		0.01
v/c Ratio	0.63	1.04		1.00	0.63		0.72	0.28	0.97	0.29	0.26	0.03
Uniform Delay, d1	49.8	24.0		48.9	13.6		40.9	36.9	43.6	37.0	36.8	35.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.0	30.2		43.9	0.6		16.4	1.8	42.7	2.9	1.7	0.2
Delay (s)	58.8	54.2		92.7	14.2		57.3	38.7	86.3	40.0	38.5	35.2
Level of Service	E	D		F	B		E	D	F	D	D	D
Approach Delay (s)		54.3			32.2			72.4			38.2	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM Average Control Delay	48.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	2211	96	228	1397	248	147	137	263	222	159	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	2403	104	248	1518	270	160	149	286	241	173	165
RTOR Reduction (vph)	0	0	7	0	0	112	0	0	83	0	0	125
Lane Group Flow (vph)	130	2403	97	248	1518	158	160	149	203	241	173	40
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.6	72.0	72.0	7.0	70.4	70.4	6.0	18.0	18.0	7.0	19.0	19.0
Effective Green, g (s)	8.6	72.0	72.0	7.0	70.4	70.4	6.0	18.0	18.0	7.0	19.0	19.0
Actuated g/C Ratio	0.07	0.60	0.60	0.06	0.59	0.59	0.05	0.15	0.15	0.06	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	246	2123	950	200	2983	929	172	531	237	200	560	251
v/s Ratio Prot	0.04	c0.68		c0.07	0.30		0.05	0.04		c0.07	0.05	
v/s Ratio Perm			0.06			0.10			c0.13			0.03
v/c Ratio	0.53	1.13	0.10	1.24	0.51	0.17	0.93	0.28	0.86	1.20	0.31	0.16
Uniform Delay, d1	53.7	24.0	10.2	56.5	14.6	11.4	56.8	45.3	49.7	56.5	44.7	43.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	65.9	0.0	143.1	0.1	0.1	48.6	1.3	30.6	129.8	1.4	1.3
Delay (s)	55.8	89.9	10.3	199.6	14.8	11.5	105.4	46.6	80.3	186.3	46.1	44.9
Level of Service	E	F	B	F	B	B	F	D	F	F	D	D
Approach Delay (s)		85.1			36.8			78.6			104.1	
Approach LOS		F			D			E			F	

Intersection Summary			
HCM Average Control Delay	69.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	2652	179	335	1945	130	93	77	306	250	103	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	2883	195	364	2114	141	101	84	333	272	112	53
RTOR Reduction (vph)	0	0	49	0	0	35	0	0	93	0	0	41
Lane Group Flow (vph)	67	2883	146	364	2114	106	101	84	240	272	112	12
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	59.8	59.8	11.0	66.8	66.8	6.9	18.0	18.0	16.0	27.1	27.1
Effective Green, g (s)	4.0	59.8	59.8	11.0	66.8	66.8	6.9	18.0	18.0	16.0	27.1	27.1
Actuated g/C Ratio	0.03	0.50	0.50	0.09	0.55	0.55	0.06	0.15	0.15	0.13	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2517	784	313	2812	875	196	527	236	234	1141	355
v/s Ratio Prot	0.02	c0.57		c0.11	0.42		0.03	0.02		c0.15	0.02	
v/s Ratio Perm			0.09			0.07			c0.15			0.01
v/c Ratio	0.59	1.15	0.19	1.16	0.75	0.12	0.52	0.16	1.02	1.16	0.10	0.03
Uniform Delay, d1	57.6	30.5	17.0	54.9	20.7	12.9	55.3	44.8	51.4	52.4	37.2	36.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.5	70.7	0.1	102.6	1.2	0.1	2.3	0.6	63.3	109.7	0.2	0.2
Delay (s)	65.1	101.2	17.1	157.5	21.8	13.0	57.6	45.5	114.7	162.1	37.3	36.8
Level of Service	E	F	B	F	C	B	E	D	F	F	D	D
Approach Delay (s)		95.2			40.2			92.3			115.0	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	74.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	947	2171	109	247	1328	375	154	803	219	173	730	789
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1029	2360	118	268	1443	408	167	873	238	188	793	858
RTOR Reduction (vph)	0	0	35	0	0	79	0	0	123	0	0	1
Lane Group Flow (vph)	1029	2360	83	268	1443	329	167	873	115	188	793	857
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	36.0	61.0	61.0	10.0	35.0	35.0	6.0	24.0	24.0	9.0	27.0	63.0
Effective Green, g (s)	36.0	61.0	61.0	10.0	35.0	35.0	6.0	24.0	24.0	9.0	27.0	63.0
Actuated g/C Ratio	0.30	0.51	0.51	0.08	0.29	0.29	0.05	0.20	0.20	0.08	0.22	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1030	2585	805	286	1483	462	172	1017	317	257	796	884
v/s Ratio Prot	c0.30	c0.46		0.08	0.28		c0.05	0.17		0.05	c0.22	c0.29
v/s Ratio Perm			0.05			0.21			0.07			0.25
v/c Ratio	1.00	0.91	0.10	0.94	0.97	0.71	0.97	0.86	0.36	0.73	1.00	0.97
Uniform Delay, d1	42.0	27.1	15.3	54.7	42.0	38.0	56.9	46.4	41.4	54.3	46.4	27.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.6	5.5	0.1	36.4	17.2	5.1	59.8	9.4	3.2	10.2	31.0	22.8
Delay (s)	69.6	32.5	15.4	91.1	59.3	43.1	116.7	55.7	44.6	64.6	77.5	50.4
Level of Service	E	C	B	F	E	D	F	E	D	E	E	D
Approach Delay (s)		42.8			60.2			61.6			63.5	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	54.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	232	1971	139	109	1613	238	128	256	124	219	384	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	252	2142	151	118	1753	259	139	278	135	238	417	251
RTOR Reduction (vph)	0	0	64	0	0	91	0	0	84	0	0	88
Lane Group Flow (vph)	252	2142	87	118	1753	168	139	278	51	238	417	163
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	37.0	37.0	4.0	33.0	33.0	5.0	17.0	17.0	6.0	18.0	18.0
Effective Green, g (s)	8.0	37.0	37.0	4.0	33.0	33.0	5.0	17.0	17.0	6.0	18.0	18.0
Actuated g/C Ratio	0.10	0.46	0.46	0.05	0.41	0.41	0.06	0.21	0.21	0.08	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	2352	732	172	2098	653	215	1081	336	257	1144	356
v/s Ratio Prot	c0.07	c0.42		0.03	0.34		0.04	0.05		c0.07	0.08	
v/s Ratio Perm			0.05			0.11			0.03			c0.10
v/c Ratio	0.73	0.91	0.12	0.69	0.84	0.26	0.65	0.26	0.15	0.93	0.36	0.46
Uniform Delay, d1	35.0	20.0	12.2	37.4	21.1	15.4	36.6	26.2	25.6	36.8	26.2	26.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.9	5.8	0.1	10.8	3.0	0.2	6.5	0.6	1.0	36.5	0.9	4.2
Delay (s)	42.9	25.8	12.3	48.2	24.1	15.7	43.2	26.8	26.6	73.3	27.1	31.0
Level of Service	D	C	B	D	C	B	D	C	C	E	C	C
Approach Delay (s)		26.7			24.4			30.9			40.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	864	386	0	0	570	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	939	420	0	0	620	199
RTOR Reduction (vph)	0	262	0	0	0	44
Lane Group Flow (vph)	939	158	0	0	620	155
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	33.9	33.9			48.1	48.1
Effective Green, g (s)	33.9	33.9			48.1	48.1
Actuated g/C Ratio	0.38	0.38			0.53	0.53
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1333	596			1835	846
v/s Ratio Prot	c0.27				c0.18	
v/s Ratio Perm		0.10				0.10
v/c Ratio	0.70	0.27			0.34	0.18
Uniform Delay, d1	23.8	19.4			11.9	10.8
Progression Factor	0.53	0.29			1.00	1.00
Incremental Delay, d2	1.3	0.2			0.5	0.5
Delay (s)	13.9	5.8			12.4	11.3
Level of Service	B	A			B	B
Approach Delay (s)	11.4			0.0	12.1	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	1	50	1	333	11	25	40	0	0	2	0	399
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		4.0
Lane Util. Factor	1.00	1.00		1.00	0.95	1.00	1.00			1.00		1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00			1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95			0.95		1.00
Satd. Flow (prot)	1770	1858		1770	3539	1583	1770			1770		1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95			0.95		1.00
Satd. Flow (perm)	1770	1858		1770	3539	1583	1770			1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	54	1	362	12	27	43	0	0	2	0	434
RTOR Reduction (vph)	0	1	0	0	0	13	0	0	0	0	0	354
Lane Group Flow (vph)	1	54	0	362	12	14	43	0	0	2	0	80
Turn Type	Prot			Prot		Perm	custom		custom	custom		custom
Protected Phases	5	2		1	6							
Permitted Phases						6	4		4	8		8
Actuated Green, G (s)	0.9	10.3		13.1	22.5	22.5	8.0			8.0		8.0
Effective Green, g (s)	0.9	10.3		13.1	22.5	22.5	8.0			8.0		8.0
Actuated g/C Ratio	0.02	0.24		0.30	0.52	0.52	0.18			0.18		0.18
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		3.0
Lane Grp Cap (vph)	37	441		534	1835	821	326			326		292
v/s Ratio Prot	0.00	c0.03		c0.20	0.00							
v/s Ratio Perm						0.01	0.02			0.00		c0.05
v/c Ratio	0.03	0.12		0.68	0.01	0.02	0.13			0.01		0.27
Uniform Delay, d1	20.8	13.0		13.3	5.0	5.1	14.8			14.5		15.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00			1.00		1.00
Incremental Delay, d2	0.3	0.1		3.4	0.0	0.0	0.2			0.0		0.5
Delay (s)	21.1	13.1		16.7	5.1	5.1	15.0			14.5		15.7
Level of Service	C	B		B	A	A	B			B		B
Approach Delay (s)		13.3			15.6			15.0			15.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	11	286	190	41	177	146
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	311	207	45	192	159

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	12	311	251	351
Volume Left (vph)	12	0	0	192
Volume Right (vph)	0	311	45	0
Hadj (s)	0.53	-0.67	-0.07	0.14
Departure Headway (s)	6.6	5.4	5.3	5.3
Degree Utilization, x	0.02	0.47	0.37	0.52
Capacity (veh/h)	513	616	642	645
Control Delay (s)	8.6	11.9	11.3	14.0
Approach Delay (s)	11.8		11.3	14.0
Approach LOS	B		B	B

Intersection Summary			
Delay	12.5		
HCM Level of Service	B		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Polk/Sierra

Cycle (sec):	100	Critical Vol./Cap.(X):	0.518
Loss Time (sec):	0	Average Delay (sec/veh):	12.7
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk								Dante					
Approach:	North Bound			South Bound			East Bound			West Bound				
Movement:	L	T	R	L	T	R	L	T	R	L	T	R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign				
Rights:	Include			Include			Include			Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0		
Lanes:	1 0 0 1 0			1 0 1 0 1			1 0 0 1 0			1 0 1 0 1				
Volume Module:														
Base Vol:	52	240	23	63	193	28	54	104	70	40	65	74		
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Initial Bse:	52	240	23	63	193	28	54	104	70	40	65	74		
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
PHF Volume:	57	261	25	68	210	30	59	113	76	43	71	80		
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0		
Reduced Vol:	57	261	25	68	210	30	59	113	76	43	71	80		
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
FinalVolume:	57	261	25	68	210	30	59	113	76	43	71	80		
Saturation Flow Module:														
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Lanes:	1.00	0.91	0.09	1.00	1.00	1.00	1.00	0.60	0.40	1.00	1.00	1.00		
Final Sat.:	503	504	48	469	506	554	472	316	213	436	465	511		
Capacity Analysis Module:														
Vol/Sat:	0.11	0.52	0.52	0.15	0.41	0.05	0.12	0.36	0.36	0.10	0.15	0.16		
Crit Moves:		****			****			****				****		
Delay/Veh:	10.4	15.1	15.1	11.2	14.0	9.2	10.9	12.3	12.3	11.2	11.1	10.3		
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
AdjDel/Veh:	10.4	15.1	15.1	11.2	14.0	9.2	10.9	12.3	12.3	11.2	11.1	10.3		
LOS by Move:	B	C	C	B	B	A	B	B	B	B	B	B		
ApproachDel:		14.3			12.9			12.0			10.8			
Delay Adj:		1.00			1.00			1.00			1.00			
ApprAdjDel:		14.3			12.9			12.0			10.8			
LOS by Appr:		B			B			B			B			
AllWayAvgQ:	0.1	0.9	0.9	0.2	0.6	0.1	0.1	0.5	0.5	0.1	0.2	0.2		

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	68	4	7	10	4	190	8	475	0	62	238	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	4	8	11	4	207	9	516	0	67	259	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	889	939	270	937	950	258	282			516		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	889	939	270	937	950	258	282			516		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	54	98	99	95	98	72	99			94		
cM capacity (veh/h)	160	244	728	203	240	741	1278			1046		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	74	4	8	11	4	207	9	258	258	0	67	282
Volume Left	74	0	0	11	0	0	9	0	0	0	67	0
Volume Right	0	0	8	0	0	207	0	0	0	0	0	23
cSH	160	244	728	203	240	741	1278	1700	1700	1700	1046	1700
Volume to Capacity	0.46	0.02	0.01	0.05	0.02	0.28	0.01	0.15	0.15	0.00	0.06	0.17
Queue Length 95th (ft)	54	1	1	4	1	29	1	0	0	0	5	0
Control Delay (s)	45.5	20.0	10.0	23.8	20.3	11.7	7.8	0.0	0.0	0.0	8.7	0.0
Lane LOS	E	C	A	C	C	B	A				A	
Approach Delay (s)	41.0			12.5			0.1				1.7	
Approach LOS	E			B								

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	44	144	547	120	103	209
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	157	595	130	112	227

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	204	595	130	112	227
Volume Left (vph)	0	595	0	112	0
Volume Right (vph)	157	0	0	0	227
Hadj (s)	-0.43	0.53	0.03	0.53	-0.67
Departure Headway (s)	5.9	6.4	5.9	7.4	6.2
Degree Utilization, x	0.33	1.06	0.21	0.23	0.39
Capacity (veh/h)	594	553	594	475	566
Control Delay (s)	11.8	79.1	9.3	11.4	12.0
Approach Delay (s)	11.8	66.6		11.8	
Approach LOS	B	F		B	

Intersection Summary			
Delay	43.1		
HCM Level of Service	E		
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	68	196	11	4	131	229	4	1	4	509	6	187
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	213	12	4	142	249	4	1	4	553	7	203

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	180	118	147	249	10	763
Volume Left (vph)	74	0	4	0	4	553
Volume Right (vph)	0	12	0	249	4	203
Hadj (s)	0.24	-0.04	0.05	-0.67	-0.14	0.02
Departure Headway (s)	7.4	7.1	7.1	6.4	7.1	5.8
Degree Utilization, x	0.37	0.23	0.29	0.44	0.02	1.23
Capacity (veh/h)	480	497	499	558	469	614
Control Delay (s)	13.4	11.0	11.7	13.1	10.2	137.6
Approach Delay (s)	12.5		12.6		10.2	137.6
Approach LOS	B		B		B	F

Intersection Summary			
Delay	77.6		
HCM Level of Service	F		
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.437
Loss Time (sec):	0	Average Delay (sec/veh):	12.1
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk									Dante							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1	0	1	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1
Volume Module:																				
Base Vol:	185		12		20	104		14		52	19		177		40	28		290		33
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	185		12		20	104		14		52	19		177		40	28		290		33
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92	0.92		0.92		0.92	0.92		0.92	
PHF Volume:	201		13		22	113		15		57	21		192		43	30		315		36
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Reduced Vol:	201		13		22	113		15		57	21		192		43	30		315		36
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
FinalVolume:	201		13		22	113		15		57	21		192		43	30		315		36
Saturation Flow Module:																				
Adjustment:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Lanes:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	2.00		1.00		1.00	2.00		1.00	
Final Sat.:	461		485		535	444		469		518	455		978		537	477		1030		567
Capacity Analysis Module:																				
Vol/Sat:	0.44	0.03		0.04		0.25	0.03		0.11		0.05	0.20		0.08		0.06	0.31		0.06	
Crit Moves:	****					****						****					****			
Delay/Veh:	15.4		9.8		9.2	12.7		10.0		9.8	10.5		11.2		9.4	10.3		12.1		9.1
Delay Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	15.4		9.8		9.2	12.7		10.0		9.8	10.5		11.2		9.4	10.3		12.1		9.1
LOS by Move:	C		A		A	B		B		A	B		B		A	B		B		A
ApproachDel:	14.5					11.6					10.9					11.7				
Delay Adj:	1.00					1.00					1.00					1.00				
ApprAdjDel:	14.5					11.6					10.9					11.7				
LOS by Appr:	B					B					B					B				
AllWayAvgQ:	0.7		0.0		0.0	0.3		0.0		0.1	0.0		0.2		0.1	0.1		0.4		0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	894	81	104	545	95	49	432	82	86	461	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	972	88	113	592	103	53	470	89	93	501	75
RTOR Reduction (vph)	0	0	40	0	15	0	0	0	46	0	0	43
Lane Group Flow (vph)	185	972	48	113	680	0	53	470	43	93	501	32
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.9	47.0	47.0	6.0	39.1		3.2	16.0	16.0	5.0	17.8	17.8
Effective Green, g (s)	13.9	47.0	47.0	6.0	39.1		3.2	16.0	16.0	5.0	17.8	17.8
Actuated g/C Ratio	0.15	0.52	0.52	0.07	0.43		0.04	0.18	0.18	0.06	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	273	973	827	118	1504		63	629	281	98	700	313
v/s Ratio Prot	0.10	c0.52		c0.06	0.20		0.03	0.13		c0.05	c0.14	
v/s Ratio Perm			0.03						0.03			0.02
v/c Ratio	0.68	1.00	0.06	0.96	0.45		0.84	0.75	0.15	0.95	0.72	0.10
Uniform Delay, d1	35.9	21.5	10.6	41.9	17.9		43.1	35.1	31.3	42.4	33.7	29.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	28.4	0.0	68.8	0.2		60.8	4.8	0.3	73.5	3.5	0.1
Delay (s)	42.5	49.9	10.6	110.7	18.1		104.0	39.9	31.5	115.9	37.2	29.7
Level of Service	D	D	B	F	B		F	D	C	F	D	C
Approach Delay (s)		46.0			31.1			44.2			47.3	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	42.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	29	11	4	18	64	8	325	6	43	173	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	32	12	4	20	70	9	353	7	47	188	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	732	659	188	680	679	353	215			360		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	732	659	188	680	679	353	215			360		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	77	91	99	99	95	90	99			96		
cM capacity (veh/h)	280	366	854	325	357	690	1355			1199		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	109	93	362	7	235	27
Volume Left	65	4	9	0	47	0
Volume Right	12	70	0	7	0	27
cSH	327	553	1355	1700	1199	1700
Volume to Capacity	0.33	0.17	0.01	0.00	0.04	0.02
Queue Length 95th (ft)	36	15	0	0	3	0
Control Delay (s)	21.4	12.8	0.2	0.0	1.9	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	21.4	12.8	0.2		1.7	
Approach LOS	C	B				

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	899	487	571	846	70	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	977	529	621	920	76	290
RTOR Reduction (vph)	0	179	0	0	0	249
Lane Group Flow (vph)	977	350	621	920	76	41
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	55.0	55.0	36.0	95.0	17.0	17.0
Effective Green, g (s)	55.0	55.0	36.0	95.0	17.0	17.0
Actuated g/C Ratio	0.46	0.46	0.30	0.79	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	854	726	531	2802	251	224
v/s Ratio Prot	c0.52		c0.35	0.26	c0.04	
v/s Ratio Perm		0.22				0.03
v/c Ratio	1.14	0.48	1.17	0.33	0.30	0.18
Uniform Delay, d1	32.5	22.6	42.0	3.5	46.2	45.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	78.6	0.5	95.0	0.1	3.1	1.8
Delay (s)	111.1	23.1	137.0	3.6	49.3	47.2
Level of Service	F	C	F	A	D	D
Approach Delay (s)	80.2			57.4	47.6	
Approach LOS	F			E	D	

Intersection Summary			
HCM Average Control Delay	66.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (vph)	115	1033	1157	264	145	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	1123	1258	287	158	276
RTOR Reduction (vph)	0	0	0	140	0	217
Lane Group Flow (vph)	125	1123	1258	147	158	59
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	8.7	51.0	38.3	38.3	16.0	16.0
Effective Green, g (s)	8.7	51.0	38.3	38.3	16.0	16.0
Actuated g/C Ratio	0.12	0.68	0.51	0.51	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	205	1267	1807	808	378	338
v/s Ratio Prot	0.07	c0.60	0.36		c0.09	
v/s Ratio Perm				0.09		0.04
v/c Ratio	0.61	0.89	0.70	0.18	0.42	0.17
Uniform Delay, d1	31.5	9.7	13.9	9.9	25.5	24.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	7.8	1.2	0.1	3.4	1.1
Delay (s)	36.6	17.4	15.1	10.0	28.9	25.2
Level of Service	D	B	B	B	C	C
Approach Delay (s)		19.4	14.2		26.5	
Approach LOS		B	B		C	

Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	36	1004	38	370	1130	166	220	379	30	17	301	526
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1091	41	402	1228	180	239	412	33	18	327	572
RTOR Reduction (vph)	0	0	19	0	0	73	0	0	24	0	0	307
Lane Group Flow (vph)	39	1091	22	402	1228	107	239	412	9	18	327	265
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	3.6	35.6	35.6	25.0	57.0	57.0	15.0	31.4	31.4	2.0	18.4	18.4
Effective Green, g (s)	3.6	35.6	35.6	25.0	57.0	57.0	15.0	31.4	31.4	2.0	18.4	18.4
Actuated g/C Ratio	0.03	0.32	0.32	0.23	0.52	0.52	0.14	0.29	0.29	0.02	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1145	512	402	1834	820	241	1010	452	32	592	265
v/s Ratio Prot	0.02	c0.31		c0.23	0.35		c0.14	0.12		0.01	0.09	
v/s Ratio Perm			0.01			0.07			0.01			c0.17
v/c Ratio	0.67	0.95	0.04	1.00	0.67	0.13	0.99	0.41	0.02	0.56	0.55	1.00
Uniform Delay, d1	52.6	36.4	25.5	42.5	19.6	13.7	47.4	31.8	28.2	53.6	42.0	45.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.6	16.5	0.0	44.9	0.9	0.1	55.4	1.2	0.1	20.7	3.7	55.0
Delay (s)	79.2	52.8	25.6	87.4	20.5	13.8	102.9	33.0	28.3	74.2	45.7	100.8
Level of Service	E	D	C	F	C	B	F	C	C	E	D	F
Approach Delay (s)		52.8			34.7			57.2			80.6	
Approach LOS		D			C			E			F	

Intersection Summary			
HCM Average Control Delay	51.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	1194	73	121	1134	94	170	230	64	235	686	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	1298	79	132	1233	102	185	250	70	255	746	158
RTOR Reduction (vph)	0	0	55	0	0	71	0	0	51	0	0	112
Lane Group Flow (vph)	112	1298	24	132	1233	31	185	250	19	255	746	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	18.0	18.0	3.2	18.0	18.0	5.3	16.5	16.5	6.3	17.5	17.5
Effective Green, g (s)	3.2	18.0	18.0	3.2	18.0	18.0	5.3	16.5	16.5	6.3	17.5	17.5
Actuated g/C Ratio	0.05	0.30	0.30	0.05	0.30	0.30	0.09	0.28	0.28	0.10	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1526	475	183	1526	475	303	973	435	360	1032	462
v/s Ratio Prot	0.03	c0.26		c0.04	0.24		0.05	0.07		c0.07	c0.21	
v/s Ratio Perm			0.01			0.02			0.01			0.03
v/c Ratio	0.61	0.85	0.05	0.72	0.81	0.06	0.61	0.26	0.04	0.71	0.72	0.10
Uniform Delay, d1	27.8	19.7	14.9	28.0	19.4	15.0	26.4	17.0	16.0	26.0	19.1	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	4.8	0.0	13.1	3.3	0.1	3.6	0.6	0.2	6.3	4.4	0.4
Delay (s)	33.7	24.5	15.0	41.1	22.7	15.0	30.0	17.6	16.2	32.2	23.5	15.9
Level of Service	C	C	B	D	C	B	C	B	B	C	C	B
Approach Delay (s)		24.7			23.8			21.9			24.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	247	1432	101	144	947	59	181	408	384	279	509	403
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	1557	110	157	1029	64	197	443	417	303	553	438
RTOR Reduction (vph)	0	0	64	0	0	46	0	0	113	0	0	112
Lane Group Flow (vph)	268	1557	46	157	1029	18	197	443	304	303	553	326
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	24.0	24.0	4.0	20.0	20.0	5.0	19.0	19.0	7.0	21.0	21.0
Effective Green, g (s)	8.0	24.0	24.0	4.0	20.0	20.0	5.0	19.0	19.0	7.0	21.0	21.0
Actuated g/C Ratio	0.11	0.34	0.34	0.06	0.29	0.29	0.07	0.27	0.27	0.10	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	392	1743	543	196	1453	452	245	961	430	343	1062	475
v/s Ratio Prot	c0.08	c0.31		0.05	0.20		0.06	0.13		c0.09	0.16	
v/s Ratio Perm			0.03			0.01			0.19			c0.21
v/c Ratio	0.68	0.89	0.09	0.80	0.71	0.04	0.80	0.46	0.71	0.88	0.52	0.69
Uniform Delay, d1	29.8	21.8	15.6	32.6	22.4	18.1	32.0	21.2	23.0	31.1	20.3	21.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.9	6.3	0.1	20.5	1.6	0.0	17.2	1.6	9.4	22.5	1.8	7.9
Delay (s)	34.7	28.1	15.6	53.1	24.0	18.1	49.2	22.8	32.4	53.6	22.2	29.5
Level of Service	C	C	B	D	C	B	D	C	C	D	C	C
Approach Delay (s)		28.3			27.3			31.5			32.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	1580	146	155	1067	67	200	538	266	148	419	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	1717	159	168	1160	73	217	585	289	161	455	172
RTOR Reduction (vph)	0	0	99	0	0	46	0	0	114	0	0	114
Lane Group Flow (vph)	133	1717	60	168	1160	27	217	585	175	161	455	58
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	23.8	23.8	4.0	23.8	23.8	5.0	16.2	16.2	5.0	16.2	16.2
Effective Green, g (s)	4.0	23.8	23.8	4.0	23.8	23.8	5.0	16.2	16.2	5.0	16.2	16.2
Actuated g/C Ratio	0.06	0.37	0.37	0.06	0.37	0.37	0.08	0.25	0.25	0.08	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	211	1862	580	211	1862	580	264	882	395	264	882	395
v/s Ratio Prot	0.04	c0.34		c0.05	0.23		c0.06	c0.17		0.05	0.13	
v/s Ratio Perm			0.04			0.02			0.11			0.04
v/c Ratio	0.63	0.92	0.10	0.80	0.62	0.05	0.82	0.66	0.44	0.61	0.52	0.15
Uniform Delay, d1	29.8	19.7	13.6	30.1	16.9	13.3	29.6	21.9	20.6	29.1	21.0	19.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.0	8.1	0.1	18.5	0.7	0.0	18.3	3.9	3.6	4.0	2.2	0.8
Delay (s)	35.8	27.8	13.7	48.6	17.6	13.3	47.8	25.9	24.2	33.0	23.2	19.8
Level of Service	D	C	B	D	B	B	D	C	C	C	C	B
Approach Delay (s)		27.2			21.1			29.8			24.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1469	35	137	501	0	20	0	408	164	29	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.89	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3160	
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1269		1583	1770	3160	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1597	38	149	545	0	22	0	443	178	32	80
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	155	0	60	0
Lane Group Flow (vph)	0	1597	27	149	545	0	22	0	288	178	52	0
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		35.8	35.8	8.0	47.8		19.0		19.0	19.0	19.0	
Effective Green, g (s)		35.8	35.8	8.0	47.8		19.0		19.0	19.0	19.0	
Actuated g/C Ratio		0.48	0.48	0.11	0.64		0.25		0.25	0.25	0.25	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1694	758	189	2262		322		402	450	803	
v/s Ratio Prot		c0.45		c0.08	0.15						0.02	
v/s Ratio Perm			0.02				0.02		c0.18	0.10		
v/c Ratio		0.94	0.04	0.79	0.24		0.07		0.72	0.40	0.07	
Uniform Delay, d1		18.5	10.3	32.6	5.8		21.2		25.4	23.1	21.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		11.1	0.0	19.2	0.1		0.1		6.0	2.6	0.2	
Delay (s)		29.6	10.4	51.8	5.8		21.3		31.4	25.7	21.3	
Level of Service		C	B	D	A		C		C	C	C	
Approach Delay (s)		29.1			15.7			30.9			24.0	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	344	1103	0	0	537	295	262	15	487	179	0	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.87	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1473	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.57		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1473	1504	2054		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	374	1199	0	0	584	321	285	16	529	195	0	228
RTOR Reduction (vph)	0	0	0	0	0	185	0	82	82	0	0	187
Lane Group Flow (vph)	374	1199	0	0	584	136	256	206	204	195	0	41
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	20.9	42.2			17.3	17.3	18.0	18.0	18.0	16.0		16.0
Effective Green, g (s)	20.9	42.2			17.3	17.3	18.0	18.0	18.0	16.0		16.0
Actuated g/C Ratio	0.24	0.48			0.20	0.20	0.20	0.20	0.20	0.18		0.18
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	419	1693			694	310	343	301	307	373		287
v/s Ratio Prot	c0.21	0.34			c0.17		c0.15	0.14				
v/s Ratio Perm						0.09			0.14	c0.09		0.03
v/c Ratio	0.89	0.71			0.84	0.44	0.75	0.68	0.66	0.52		0.14
Uniform Delay, d1	32.6	18.1			34.1	31.2	33.0	32.5	32.3	32.6		30.3
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	20.6	1.4			9.1	1.0	13.8	12.0	10.8	5.2		1.1
Delay (s)	53.2	19.5			43.2	32.2	46.7	44.4	43.2	37.8		31.4
Level of Service	D	B			D	C	D	D	D	D		C
Approach Delay (s)		27.5			39.3			44.7			34.4	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	35.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	88.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (vph)	96	35	14	494	1263	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1797	1863	1583	3433	1583
Flt Permitted		0.79	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1481	1863	1583	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	38	15	537	1373	151
RTOR Reduction (vph)	0	0	0	316	0	44
Lane Group Flow (vph)	0	142	15	221	1373	107
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)		41.1	41.1	41.1	50.9	50.9
Effective Green, g (s)		41.1	41.1	41.1	50.9	50.9
Actuated g/C Ratio		0.41	0.41	0.41	0.51	0.51
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		609	766	651	1747	806
v/s Ratio Prot			0.01			
v/s Ratio Perm		0.10		c0.14	c0.40	0.07
v/c Ratio		0.23	0.02	0.34	0.79	0.13
Uniform Delay, d1		19.2	17.5	20.2	20.1	12.9
Progression Factor		1.00	0.79	4.15	0.71	0.40
Incremental Delay, d2		0.9	0.0	1.4	0.2	0.0
Delay (s)		20.1	13.9	85.0	14.4	5.1
Level of Service		C	B	F	B	A
Approach Delay (s)		20.1	83.1		13.5	
Approach LOS		C	F		B	

Intersection Summary			
HCM Average Control Delay	31.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	85	1015	600	0	0	1395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	1103	652	0	0	1516
RTOR Reduction (vph)	0	503	0	0	0	0
Lane Group Flow (vph)	92	600	652	0	0	1516
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	18.0	18.0	74.0			74.0
Effective Green, g (s)	18.0	18.0	74.0			74.0
Actuated g/C Ratio	0.18	0.18	0.74			0.74
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	319	502	1379			1379
v/s Ratio Prot	0.05		0.35			c0.81
v/s Ratio Perm		c0.22				
v/c Ratio	0.29	1.19	0.47			1.10
Uniform Delay, d1	35.5	41.0	5.2			13.0
Progression Factor	1.00	1.00	0.37			1.52
Incremental Delay, d2	2.3	105.7	0.2			53.1
Delay (s)	37.7	146.7	2.2			72.8
Level of Service	D	F	A			E
Approach Delay (s)	138.3		2.2			72.8
Approach LOS	F		A			E

Intersection Summary			
HCM Average Control Delay	82.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	592	210	201	82	193	208	153	1334	65	152	1101	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	643	228	218	89	210	226	166	1450	71	165	1197	505
RTOR Reduction (vph)	0	0	135	0	0	150	0	0	41	0	0	261
Lane Group Flow (vph)	643	228	83	89	210	76	166	1450	30	165	1197	244
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			
Actuated Green, G (s)	21.5	29.1	29.1	4.8	12.4	12.4	8.9	36.7	36.7	13.4	41.2	21.5
Effective Green, g (s)	21.5	29.1	29.1	4.8	12.4	12.4	8.9	36.7	36.7	13.4	41.2	21.5
Actuated g/C Ratio	0.22	0.29	0.29	0.05	0.12	0.12	0.09	0.37	0.37	0.13	0.41	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	738	1030	461	165	439	196	306	1866	581	237	1458	340
v/s Ratio Prot	c0.19	0.06		0.03	c0.06		0.05	0.29		c0.09	c0.34	0.15
v/s Ratio Perm			0.05			0.05			0.02			
v/c Ratio	0.87	0.22	0.18	0.54	0.48	0.39	0.54	0.78	0.05	0.70	0.82	0.72
Uniform Delay, d1	37.9	26.9	26.5	46.5	40.8	40.3	43.6	28.0	20.4	41.4	26.1	36.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.88	0.80	1.00	1.00	1.00
Incremental Delay, d2	11.0	0.1	0.2	3.4	0.8	1.3	0.9	1.6	0.1	8.6	5.3	7.0
Delay (s)	48.9	27.0	26.7	49.9	41.6	41.6	42.9	26.2	16.4	49.9	31.4	43.4
Level of Service	D	C	C	D	D	D	D	C	B	D	C	D
Approach Delay (s)		39.9			43.0			27.4			36.3	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	34.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #1 Weber/Herndon
******************************************************************************
Average Delay (sec/veh):      1.1       Worst Case Level Of Service: D[ 29.2]
******************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  1! 0  0    0  1  2  0  1    0  1  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0   121     0    0     0     0 1932   163    73 1683     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0   121     0    0     0     0 1932   163    73 1683     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0   132     0    0     0     0 2100   177    79 1829     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0   132     0    0     0     0 2100   177    79 1829     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9   7.5  6.5   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3   3.5  4.0   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   700  2688 4265   457  xxxx xxxx xxxxx  2277 xxxx xxxxx
Potent Cap.: xxxx xxxx   386    11    2   556  xxxx xxxx xxxxx   227 xxxx xxxxx
Move Cap.:   xxxx xxxx   386     5    1   556  xxxx xxxx xxxxx   227 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.34  0.00 0.00  0.00  xxxx xxxx  xxxx  0.35 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   1.5  xxxx xxxx xxxxx  xxxx xxxx xxxxx   1.5 xxxx xxxxx
Control Del:xxxxx xxxx  19.0 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  29.2 xxxx xxxxx
LOS by Move:    *    *     C     *    *     *     *    *     *     D    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx   1.5 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.2 xxxx xxxxx  29.2 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     A    *     *     D    *     *
ApproachDel:      19.0           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         C                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	310	1507	118	142	1347	188	332	65	183	224	66	356
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	337	1638	128	154	1464	204	361	71	199	243	72	387
RTOR Reduction (vph)	0	0	52	0	0	130	0	0	99	0	0	210
Lane Group Flow (vph)	337	1638	76	154	1464	74	361	71	100	243	72	177
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	28.0	47.1	4.0	24.0	24.0	19.1	22.0	22.0	9.5	12.4	12.4
Effective Green, g (s)	8.0	28.0	47.1	4.0	24.0	24.0	19.1	22.0	22.0	9.5	12.4	12.4
Actuated g/C Ratio	0.10	0.35	0.59	0.05	0.30	0.30	0.24	0.28	0.28	0.12	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	345	1791	938	173	1535	478	825	516	438	410	291	247
v/s Ratio Prot	0.10	c0.32	0.02	0.04	c0.29		c0.11	0.04		c0.07	0.04	
v/s Ratio Perm			0.03			0.05			0.06			c0.11
v/c Ratio	0.98	0.91	0.08	0.89	0.95	0.16	0.44	0.14	0.23	0.59	0.25	0.72
Uniform Delay, d1	35.7	24.6	6.9	37.5	27.2	20.3	25.6	21.6	22.2	33.2	29.5	31.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	41.8	7.7	0.0	38.9	13.5	0.2	1.7	0.6	1.2	2.3	0.4	9.5
Delay (s)	77.5	32.3	7.0	76.4	40.7	20.5	27.3	22.2	23.4	35.5	29.9	41.4
Level of Service	E	C	A	E	D	C	C	C	C	D	C	D
Approach Delay (s)		38.0			41.5			25.5			38.1	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	37.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	129	1627	36	81	1414	27	27	97	52	18	56	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1764		3433	1728	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	1764		3433	1728	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	140	1768	39	88	1537	29	29	105	57	20	61	57
RTOR Reduction (vph)	0	0	21	0	0	17	0	27	0	0	43	0
Lane Group Flow (vph)	140	1768	18	88	1537	12	29	135	0	20	75	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	6.0	31.8	31.8	3.2	29.0	29.0	1.5	17.5		0.7	16.7	
Effective Green, g (s)	6.0	31.8	31.8	3.2	29.0	29.0	1.5	17.5		0.7	16.7	
Actuated g/C Ratio	0.09	0.46	0.46	0.05	0.42	0.42	0.02	0.25		0.01	0.24	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	153	1626	727	159	1483	663	74	446		35	417	
v/s Ratio Prot	c0.08	c0.50		0.03	0.43		c0.01	c0.08		0.01	0.04	
v/s Ratio Perm			0.01			0.01						
v/c Ratio	0.92	1.09	0.02	0.55	1.04	0.02	0.39	0.30		0.57	0.18	
Uniform Delay, d1	31.3	18.7	10.2	32.3	20.1	11.8	33.4	20.9		34.1	20.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	48.1	50.1	0.0	4.1	33.4	0.0	3.4	1.7		20.6	0.9	
Delay (s)	79.4	68.8	10.2	36.4	53.5	11.8	36.8	22.7		54.7	21.8	
Level of Service	E	E	B	D	D	B	D	C		D	C	
Approach Delay (s)		68.4			51.8			24.8			26.5	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM Average Control Delay	57.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	1503	180	377	1382	202	170	115	262	233	136	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1669		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1669		3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	1634	196	410	1502	220	185	125	285	253	148	29
RTOR Reduction (vph)	0	0	118	0	0	63	0	98	0	0	0	22
Lane Group Flow (vph)	10	1634	78	410	1502	157	185	312	0	253	148	7
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	29.2	29.2	6.0	34.4	34.4	4.0	18.0		4.0	18.0	18.0
Effective Green, g (s)	0.8	29.2	29.2	6.0	34.4	34.4	4.0	18.0		4.0	18.0	18.0
Actuated g/C Ratio	0.01	0.40	0.40	0.08	0.47	0.47	0.05	0.25		0.05	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	38	1412	631	281	1663	744	188	410		188	458	389
v/s Ratio Prot	0.00	c0.46		c0.12	0.42		0.05	c0.19		c0.07	0.08	
v/s Ratio Perm			0.05			0.10						0.00
v/c Ratio	0.26	1.16	0.12	1.46	0.90	0.21	0.98	0.76		1.35	0.32	0.02
Uniform Delay, d1	35.9	22.0	13.9	33.6	17.9	11.4	34.6	25.6		34.6	22.6	20.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.7	79.1	0.1	225.3	7.3	0.1	60.6	12.5		186.6	1.9	0.1
Delay (s)	39.6	101.1	14.0	258.9	25.1	11.6	95.1	38.1		221.2	24.5	21.0
Level of Service	D	F	B	F	C	B	F	D		F	C	C
Approach Delay (s)		91.5			68.7			55.8			140.0	
Approach LOS		F			E			E			F	

Intersection Summary			
HCM Average Control Delay	81.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	73.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	468	1349	186	102	1422	523	185	548	65	571	495	338
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	509	1466	202	111	1546	568	201	596	71	621	538	367
RTOR Reduction (vph)	0	0	129	0	0	203	0	0	52	0	0	127
Lane Group Flow (vph)	509	1466	73	111	1546	365	201	596	19	621	538	240
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	20.6	20.6	3.2	16.8	16.8	6.0	18.0	18.0	8.0	20.0	20.0
Effective Green, g (s)	7.0	20.6	20.6	3.2	16.8	16.8	6.0	18.0	18.0	8.0	20.0	20.0
Actuated g/C Ratio	0.11	0.31	0.31	0.05	0.26	0.26	0.09	0.27	0.27	0.12	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	365	1592	496	167	1298	404	313	968	433	417	1076	481
v/s Ratio Prot	c0.15	c0.29		0.03	c0.30		0.06	c0.17		c0.18	0.15	
v/s Ratio Perm			0.05			0.23			0.01			0.15
v/c Ratio	1.39	0.92	0.15	0.66	1.19	0.90	0.64	0.62	0.04	1.49	0.50	0.50
Uniform Delay, d1	29.4	21.8	16.3	30.8	24.5	23.7	28.9	20.9	17.6	28.9	18.8	18.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	193.5	9.1	0.1	9.6	93.9	22.8	4.5	2.9	0.2	232.6	1.7	3.7
Delay (s)	222.9	30.9	16.4	40.3	118.4	46.5	33.3	23.8	17.8	261.5	20.5	22.5
Level of Service	F	C	B	D	F	D	C	C	B	F	C	C
Approach Delay (s)		74.5			96.2			25.5			119.0	
Approach LOS		E			F			C			F	

Intersection Summary			
HCM Average Control Delay	85.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	1977	1	4	2054	66	2	0	4	66	1	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.76	1.00		0.76	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	2736	3008		2728	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	2149	1	4	2233	72	2	0	4	72	1	13
RTOR Reduction (vph)	0	0	0	0	0	27	0	3	0	0	0	11
Lane Group Flow (vph)	2	2149	1	4	2233	45	2	1	0	72	1	2
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		6
Actuated Green, G (s)	0.7	27.6	27.6	0.7	27.6	27.6	6.6	6.6		6.6	6.6	6.6
Effective Green, g (s)	0.7	27.6	27.6	0.7	27.6	27.6	6.6	6.6		6.6	6.6	6.6
Actuated g/C Ratio	0.01	0.59	0.59	0.01	0.59	0.59	0.14	0.14		0.14	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	51	2992	932	51	2992	932	385	423		384	262	223
v/s Ratio Prot	0.00	0.42		c0.00	c0.44			0.00			0.00	
v/s Ratio Perm			0.00			0.03	0.00			c0.03		0.00
v/c Ratio	0.04	0.72	0.00	0.08	0.75	0.05	0.01	0.00		0.19	0.00	0.01
Uniform Delay, d1	22.8	6.9	4.0	22.8	7.1	4.1	17.3	17.3		17.8	17.3	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.8	0.0	0.7	1.0	0.0	0.0	0.0		0.2	0.0	0.0
Delay (s)	23.1	7.7	4.0	23.4	8.1	4.1	17.3	17.3		18.0	17.3	17.3
Level of Service	C	A	A	C	A	A	B	B		B	B	B
Approach Delay (s)		7.7			8.0			17.3			17.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	46.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	1614	402	484	1774	63	361	95	410	28	84	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3433		3433	3521		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.69	1.00	1.00	0.67	1.00	1.00
Satd. Flow (perm)	1770	3433		3433	3521		1289	1863	1583	1249	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	1754	437	526	1928	68	392	103	446	30	91	71
RTOR Reduction (vph)	0	20	0	0	2	0	0	0	129	0	0	52
Lane Group Flow (vph)	67	2171	0	526	1994	0	392	103	317	30	91	19
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	5.0	54.0		14.0	63.0		30.0	30.0	30.0	30.0	30.0	30.0
Effective Green, g (s)	5.0	54.0		14.0	63.0		30.0	30.0	30.0	30.0	30.0	30.0
Actuated g/C Ratio	0.05	0.49		0.13	0.57		0.27	0.27	0.27	0.27	0.27	0.27
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	80	1685		437	2017		352	508	432	341	508	432
v/s Ratio Prot	0.04	c0.63		c0.15	0.57			0.06			0.05	
v/s Ratio Perm							c0.30		0.20	0.02		0.01
v/c Ratio	0.84	1.29		1.20	0.99		1.11	0.20	0.73	0.09	0.18	0.04
Uniform Delay, d1	52.1	28.0		48.0	23.1		40.0	30.8	36.4	29.8	30.6	29.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	50.1	134.4		111.6	17.2		82.3	0.9	10.6	0.5	0.8	0.2
Delay (s)	102.2	162.4		159.6	40.3		122.3	31.7	47.0	30.3	31.4	29.6
Level of Service	F	F		F	D		F	C	D	C	C	C
Approach Delay (s)		160.7			65.2			76.7			30.6	
Approach LOS		F			E			E			C	

Intersection Summary			
HCM Average Control Delay	102.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	107.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	1878	140	332	2104	390	204	247	254	278	232	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	245	2041	152	361	2287	424	222	268	276	302	252	376
RTOR Reduction (vph)	0	0	13	0	0	108	0	0	88	0	0	105
Lane Group Flow (vph)	245	2041	139	361	2287	317	222	268	188	302	252	271
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.0	72.0	72.0	7.0	70.0	70.0	6.0	18.0	18.0	7.0	19.0	19.0
Effective Green, g (s)	9.0	72.0	72.0	7.0	70.0	70.0	6.0	18.0	18.0	7.0	19.0	19.0
Actuated g/C Ratio	0.08	0.60	0.60	0.06	0.58	0.58	0.05	0.15	0.15	0.06	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	257	2123	950	200	2966	923	172	531	237	200	560	251
v/s Ratio Prot	0.07	c0.58		c0.11	0.45		0.06	0.08		c0.09	0.07	
v/s Ratio Perm			0.09			0.20			0.12			c0.17
v/c Ratio	0.95	0.96	0.15	1.80	0.77	0.34	1.29	0.50	0.80	1.51	0.45	1.08
Uniform Delay, d1	55.3	22.7	10.5	56.5	18.9	13.0	57.0	46.9	49.2	56.5	45.8	50.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	43.1	11.8	0.1	381.4	1.3	0.2	167.2	3.4	23.5	253.6	2.6	79.4
Delay (s)	98.4	34.5	10.6	437.9	20.2	13.2	224.2	50.3	72.7	310.1	48.4	129.9
Level of Service	F	C	B	F	C	B	F	D	E	F	D	F
Approach Delay (s)		39.4			68.3			108.8			166.3	
Approach LOS		D			E			F			F	

Intersection Summary			
HCM Average Control Delay	75.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	2160	179	305	2765	308	170	143	461	214	151	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	2348	195	332	3005	335	185	155	501	233	164	176
RTOR Reduction (vph)	0	0	61	0	0	60	0	0	98	0	0	59
Lane Group Flow (vph)	110	2348	134	332	3005	275	185	155	403	233	164	117
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	59.0	59.0	11.0	65.0	65.0	7.0	18.0	18.0	16.0	27.0	27.0
Effective Green, g (s)	5.0	59.0	59.0	11.0	65.0	65.0	7.0	18.0	18.0	16.0	27.0	27.0
Actuated g/C Ratio	0.04	0.49	0.49	0.09	0.54	0.54	0.06	0.15	0.15	0.13	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	143	2500	778	315	2754	857	200	531	237	236	1144	356
v/s Ratio Prot	0.03	0.46		c0.10	c0.59		0.05	0.04		c0.13	0.03	
v/s Ratio Perm			0.08			0.17			c0.25			0.07
v/c Ratio	0.77	0.94	0.17	1.05	1.09	0.32	0.92	0.29	1.70	0.99	0.14	0.33
Uniform Delay, d1	56.9	28.8	16.9	54.5	27.5	15.3	56.2	45.3	51.0	51.9	37.2	38.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.7	7.7	0.1	65.6	47.7	0.2	42.7	1.4	333.1	54.5	0.3	2.5
Delay (s)	78.6	36.5	17.0	120.1	75.2	15.5	99.0	46.7	384.1	106.4	37.5	41.4
Level of Service	E	D	B	F	E	B	F	D	F	F	D	D
Approach Delay (s)		36.8			73.8			259.2			66.7	
Approach LOS		D			E			F			E	

Intersection Summary			
HCM Average Control Delay	80.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	953	1759	71	276	2164	217	176	888	180	309	827	1057
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1036	1912	77	300	2352	236	191	965	196	336	899	1149
RTOR Reduction (vph)	0	0	29	0	0	56	0	0	123	0	0	0
Lane Group Flow (vph)	1036	1912	48	300	2352	180	191	965	73	336	899	1149
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	36.0	61.0	61.0	10.0	35.0	35.0	6.0	24.0	24.0	9.0	27.0	63.0
Effective Green, g (s)	36.0	61.0	61.0	10.0	35.0	35.0	6.0	24.0	24.0	9.0	27.0	63.0
Actuated g/C Ratio	0.30	0.51	0.51	0.08	0.29	0.29	0.05	0.20	0.20	0.08	0.22	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1030	2585	805	286	1483	462	172	1017	317	257	796	884
v/s Ratio Prot	0.30	0.38		0.09	c0.46		0.06	0.19		c0.10	0.25	c0.39
v/s Ratio Perm			0.03			0.11			0.05			0.34
v/c Ratio	1.01	0.74	0.06	1.05	1.59	0.39	1.11	0.95	0.23	1.31	1.13	1.30
Uniform Delay, d1	42.0	23.2	15.0	55.0	42.5	34.0	57.0	47.4	40.2	55.5	46.5	28.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.5	1.1	0.0	66.6	266.9	0.5	101.3	18.3	1.7	163.5	73.8	143.0
Delay (s)	71.5	24.4	15.0	121.6	309.4	34.5	158.3	65.7	41.9	219.0	120.3	171.5
Level of Service	E	C	B	F	F	C	F	E	D	F	F	F
Approach Delay (s)		40.3			267.5			75.3			158.9	
Approach LOS		D			F			E			F	

Intersection Summary			
HCM Average Control Delay	142.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	122.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	262	1798	359	179	1598	261	220	620	97	287	803	486
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	285	1954	390	195	1737	284	239	674	105	312	873	528
RTOR Reduction (vph)	0	0	116	0	0	101	0	0	83	0	0	83
Lane Group Flow (vph)	285	1954	274	195	1737	183	239	674	22	312	873	445
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	36.6	36.6	4.0	32.6	32.6	5.0	17.0	17.0	6.0	18.0	18.0
Effective Green, g (s)	8.0	36.6	36.6	4.0	32.6	32.6	5.0	17.0	17.0	6.0	18.0	18.0
Actuated g/C Ratio	0.10	0.46	0.46	0.05	0.41	0.41	0.06	0.21	0.21	0.08	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	345	2338	728	173	2083	648	216	1086	338	259	1150	358
v/s Ratio Prot	c0.08	c0.38		0.06	0.34		0.07	0.13		c0.09	0.17	
v/s Ratio Perm			0.17			0.12			0.01			c0.28
v/c Ratio	0.83	0.84	0.38	1.13	0.83	0.28	1.11	0.62	0.07	1.20	0.76	1.24
Uniform Delay, d1	35.1	18.9	14.0	37.8	21.1	15.7	37.3	28.4	25.0	36.8	28.8	30.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.8	2.7	0.3	106.7	3.0	0.2	92.7	2.7	0.4	122.8	4.7	131.1
Delay (s)	50.0	21.6	14.4	144.5	24.1	15.9	130.0	31.0	25.3	159.6	33.5	161.9
Level of Service	D	C	B	F	C	B	F	C	C	F	C	F
Approach Delay (s)		23.6			33.7			53.7			96.0	
Approach LOS		C			C			D			F	

Intersection Summary			
HCM Average Control Delay	47.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	79.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	682	656	0	0	537	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	741	713	0	0	584	67
RTOR Reduction (vph)	0	481	0	0	0	27
Lane Group Flow (vph)	741	232	0	0	584	40
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	32.5	32.5			59.5	59.5
Effective Green, g (s)	32.5	32.5			59.5	59.5
Actuated g/C Ratio	0.32	0.32			0.60	0.60
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1150	514			2043	942
v/s Ratio Prot	c0.21				c0.17	
v/s Ratio Perm		0.15				0.03
v/c Ratio	0.64	0.45			0.29	0.04
Uniform Delay, d1	28.8	26.7			9.9	8.4
Progression Factor	0.49	2.39			1.00	1.00
Incremental Delay, d2	0.9	0.5			0.4	0.1
Delay (s)	14.9	64.2			10.2	8.5
Level of Service	B	E			B	A
Approach Delay (s)	39.1			0.0	10.1	
Approach LOS	D			A	B	

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	4	13	2	159	31	70	115	0	0	2	0	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		4.0
Lane Util. Factor	1.00	1.00		1.00	0.95	1.00	1.00			1.00		1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00			1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95			0.95		1.00
Satd. Flow (prot)	1770	1828		1770	3539	1583	1770			1770		1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95			0.95		1.00
Satd. Flow (perm)	1770	1828		1770	3539	1583	1770			1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	14	2	173	34	76	125	0	0	2	0	225
RTOR Reduction (vph)	0	1	0	0	0	39	0	0	0	0	0	187
Lane Group Flow (vph)	4	15	0	173	34	37	125	0	0	2	0	38
Turn Type	Prot			Prot		Perm	custom		custom	custom		custom
Protected Phases	5	2		1	6							
Permitted Phases						6	4		4	8		8
Actuated Green, G (s)	1.0	12.5		7.1	18.6	18.6	6.4			6.4		6.4
Effective Green, g (s)	1.0	12.5		7.1	18.6	18.6	6.4			6.4		6.4
Actuated g/C Ratio	0.03	0.33		0.19	0.49	0.49	0.17			0.17		0.17
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		3.0
Lane Grp Cap (vph)	47	601		331	1732	775	298			298		267
v/s Ratio Prot	0.00	0.01		c0.10	0.01							
v/s Ratio Perm						c0.02	c0.07			0.00		0.02
v/c Ratio	0.09	0.02		0.52	0.02	0.05	0.42			0.01		0.14
Uniform Delay, d1	18.1	8.6		13.9	5.0	5.1	14.1			13.2		13.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00			1.00		1.00
Incremental Delay, d2	0.8	0.0		1.5	0.0	0.0	1.0			0.0		0.2
Delay (s)	18.8	8.6		15.4	5.0	5.1	15.1			13.2		13.7
Level of Service	B	A		B	A	A	B			B		B
Approach Delay (s)		10.7			11.4			15.1			13.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	38.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	49	165	59	27	174	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	179	64	29	189	71

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	53	179	93	260
Volume Left (vph)	53	0	0	189
Volume Right (vph)	0	179	29	0
Hadj (s)	0.53	-0.67	-0.15	0.18
Departure Headway (s)	5.9	4.7	4.6	4.8
Degree Utilization, x	0.09	0.23	0.12	0.34
Capacity (veh/h)	579	722	725	721
Control Delay (s)	8.3	7.9	8.3	10.2
Approach Delay (s)	8.0		8.3	10.2
Approach LOS	A		A	B

Intersection Summary			
Delay	9.0		
HCM Level of Service	A		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Polk/Sierra

Cycle (sec):	100	Critical Vol./Cap.(X):	0.632
Loss Time (sec):	0	Average Delay (sec/veh):	14.9
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk									Dante							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	0	1	0	1	0	1	0	1	1	0	0	1	0	1	0	1	0	1
Volume Module:																				
Base Vol:	53	288		24		104	316		52		35	51		12		12	66		86	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	53	288		24		104	316		52		35	51		12		12	66		86	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92	0.92		0.92		0.92	0.92		0.92	
PHF Volume:	58	313		26		113	343		57		38	55		13		13	72		93	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
Reduced Vol:	58	313		26		113	343		57		38	55		13		13	72		93	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
FinalVolume:	58	313		26		113	343		57		38	55		13		13	72		93	
Saturation Flow Module:																				
Adjustment:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Lanes:	1.00	0.92		0.08		1.00	1.00		1.00		1.00	0.81		0.19		1.00	1.00		1.00	
Final Sat.:	520	529		44		499	543		596		433	380		89		419	447		490	
Capacity Analysis Module:																				
Vol/Sat:	0.11	0.59		0.59		0.23	0.63		0.09		0.09	0.15		0.15		0.03	0.16		0.19	
Crit Moves:		****					****					****							****	
Delay/Veh:	10.2	16.8		16.8		11.6	19.2		9.1		11.1	10.8		10.8		10.9	11.4		10.9	
Delay Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	10.2	16.8		16.8		11.6	19.2		9.1		11.1	10.8		10.8		10.9	11.4		10.9	
LOS by Move:	B	C		C		B	C		A		B	B		B		B	B		B	
ApproachDel:		15.8					16.4					10.9					11.1			
Delay Adj:		1.00					1.00					1.00					1.00			
ApprAdjDel:		15.8					16.4					10.9					11.1			
LOS by Appr:		C					C					B					B			
AllWayAvgQ:	0.1	1.3		1.3		0.3	1.5		0.1		0.1	0.1		0.1		0.0	0.2		0.2	

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	48	3	3	14	5	75	7	368	0	68	464	44
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	3	3	15	5	82	8	400	0	74	504	48
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	976	1091	528	1072	1115	200	552			400		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	976	1091	528	1072	1115	200	552			400		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	70	98	99	91	97	90	99			94		
cM capacity (veh/h)	171	198	495	162	192	808	1014			1155		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	52	3	3	15	5	82	8	200	200	0	74	552
Volume Left	52	0	0	15	0	0	8	0	0	0	74	0
Volume Right	0	0	3	0	0	82	0	0	0	0	0	48
cSH	171	198	495	162	192	808	1014	1700	1700	1700	1155	1700
Volume to Capacity	0.30	0.02	0.01	0.09	0.03	0.10	0.01	0.12	0.12	0.00	0.06	0.32
Queue Length 95th (ft)	30	1	0	8	2	8	1	0	0	0	5	0
Control Delay (s)	35.0	23.5	12.3	29.5	24.3	10.0	8.6	0.0	0.0	0.0	8.3	0.0
Lane LOS	E	C	B	D	C	A	A				A	
Approach Delay (s)	33.1			13.6			0.2				1.0	
Approach LOS	D			B								

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	13	39	384	25	105	750
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	42	417	27	114	815

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	57	417	27	114	815
Volume Left (vph)	0	417	0	114	0
Volume Right (vph)	42	0	0	0	815
Hadj (s)	-0.42	0.53	0.03	0.53	-0.67
Departure Headway (s)	6.7	7.2	6.7	6.8	5.6
Degree Utilization, x	0.11	0.83	0.05	0.21	1.26
Capacity (veh/h)	520	499	531	517	654
Control Delay (s)	10.5	34.9	8.8	10.4	147.6
Approach Delay (s)	10.5	33.3		130.8	
Approach LOS	B	D		F	

Intersection Summary			
Delay	95.7		
HCM Level of Service	F		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	158	201	19	8	216	640	25	19	9	282	13	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	172	218	21	9	235	696	27	21	10	307	14	120

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	281	130	243	696	58	440
Volume Left (vph)	172	0	9	0	27	307
Volume Right (vph)	0	21	0	696	10	120
Hadj (s)	0.34	-0.08	0.05	-0.67	0.03	0.01
Departure Headway (s)	8.0	7.5	7.4	6.6	8.4	6.9
Degree Utilization, x	0.62	0.27	0.50	1.28	0.13	0.84
Capacity (veh/h)	433	463	482	552	394	515
Control Delay (s)	22.0	12.1	16.2	159.0	12.7	36.3
Approach Delay (s)	18.9		122.0		12.7	36.3
Approach LOS	C		F		B	E

Intersection Summary			
Delay	75.2		
HCM Level of Service	F		
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.483
Loss Time (sec):	0	Average Delay (sec/veh):	12.7
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk									Dante							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1	0	1	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1
Volume Module:																				
Base Vol:	62		7		10	30		15		37	112		498		62	62		297		51
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	1.00		
Initial Bse:	62		7		10	30		15		37	112		498		62	62		297		51
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		0.92	0.92	0.92	0.92		
PHF Volume:	67		8		11	33		16		40	122		541		67	67		323		55
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Reduced Vol:	67		8		11	33		16		40	122		541		67	67		323		55
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	1.00		
FinalVolume:	67		8		11	33		16		40	122		541		67	67		323		55
Saturation Flow Module:																				
Adjustment:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	1.00		
Lanes:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	2.00	1.00		1.00	1.00	2.00	1.00		
Final Sat.:	396		416		452	394		416		454	517		1120		620	476		1027		565
Capacity Analysis Module:																				
Vol/Sat:	0.17	0.02	0.02			0.08	0.04	0.09			0.24	0.48	0.11		0.14	0.31		0.10		
Crit Moves:	****							****				****				****				
Delay/Veh:	12.5	10.7	10.0			11.7	10.8	10.4			11.5	14.5	8.9		11.1	12.3		9.4		
Delay Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00		
AdjDel/Veh:	12.5	10.7	10.0			11.7	10.8	10.4			11.5	14.5	8.9		11.1	12.3		9.4		
LOS by Move:	B		B		A	B		B		B	B		B		A	B		B		A
ApproachDel:	12.1					11.0					13.5					11.8				
Delay Adj:	1.00					1.00					1.00					1.00				
ApprAdjDel:	12.1					11.0					13.5					11.8				
LOS by Appr:	B					B					B					B				
AllWayAvgQ:	0.2	0.0	0.0			0.1	0.0	0.1			0.3	0.9	0.1		0.1	0.4		0.1		

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	736	80	165	903	72	178	839	163	83	826	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3500		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3500		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	210	800	87	179	982	78	193	912	177	90	898	135
RTOR Reduction (vph)	0	0	39	0	5	0	0	0	38	0	0	35
Lane Group Flow (vph)	210	800	48	179	1055	0	193	912	139	90	898	100
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	15.9	45.0	45.0	11.0	40.1		11.0	32.0	32.0	6.0	27.0	27.0
Effective Green, g (s)	15.9	45.0	45.0	11.0	40.1		11.0	32.0	32.0	6.0	27.0	27.0
Actuated g/C Ratio	0.14	0.41	0.41	0.10	0.36		0.10	0.29	0.29	0.05	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	256	762	648	177	1276		177	1030	461	97	869	389
v/s Ratio Prot	c0.12	c0.43		c0.10	0.30		c0.11	0.26		0.05	c0.25	
v/s Ratio Perm			0.03						0.09			0.06
v/c Ratio	0.82	1.05	0.07	1.01	0.83		1.09	0.89	0.30	0.93	1.03	0.26
Uniform Delay, d1	45.7	32.5	19.8	49.5	31.8		49.5	37.2	30.3	51.8	41.5	33.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.6	46.5	0.0	70.6	4.5		93.8	9.3	0.4	67.5	39.4	0.3
Delay (s)	64.2	79.0	19.9	120.1	36.3		143.3	46.5	30.7	119.3	80.9	33.8
Level of Service	E	E	B	F	D		F	D	C	F	F	C
Approach Delay (s)		71.5			48.4			58.9			78.3	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM Average Control Delay	63.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	39	25	6	4	60	104	12	226	2	84	246	57
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	42	27	7	4	65	113	13	246	2	91	267	62
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	867	724	267	742	784	246	329			248		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	867	724	267	742	784	246	329			248		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	77	92	99	98	78	86	99			93		
cM capacity (veh/h)	183	324	771	289	299	793	1230			1318		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	76	183	259	2	359	62
Volume Left	42	4	13	0	91	0
Volume Right	7	113	0	2	0	62
cSH	235	486	1230	1700	1318	1700
Volume to Capacity	0.32	0.38	0.01	0.00	0.07	0.04
Queue Length 95th (ft)	34	43	1	0	6	0
Control Delay (s)	27.4	16.8	0.5	0.0	2.5	0.0
Lane LOS	D	C	A		A	
Approach Delay (s)	27.4	16.8	0.5		2.1	
Approach LOS	D	C				

Intersection Summary			
Average Delay	6.6		
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	815	275	504	1497	107	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	886	299	548	1627	116	317
RTOR Reduction (vph)	0	112	0	0	0	272
Lane Group Flow (vph)	886	187	548	1627	116	45
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	55.0	55.0	36.0	95.0	17.0	17.0
Effective Green, g (s)	55.0	55.0	36.0	95.0	17.0	17.0
Actuated g/C Ratio	0.46	0.46	0.30	0.79	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	854	726	531	2802	251	224
v/s Ratio Prot	c0.48		c0.31	0.46	c0.07	
v/s Ratio Perm		0.12				0.03
v/c Ratio	1.04	0.26	1.03	0.58	0.46	0.20
Uniform Delay, d1	32.5	20.0	42.0	4.8	47.3	45.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.9	0.2	47.5	0.3	6.0	2.0
Delay (s)	73.4	20.2	89.5	5.1	53.3	47.5
Level of Service	E	C	F	A	D	D
Approach Delay (s)	60.0			26.4	49.1	
Approach LOS	E			C	D	

Intersection Summary			
HCM Average Control Delay	39.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (vph)	70	1084	1649	368	328	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	1178	1792	400	357	351
RTOR Reduction (vph)	0	0	0	185	0	225
Lane Group Flow (vph)	76	1178	1792	215	357	126
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	7.5	51.8	40.3	40.3	15.2	15.2
Effective Green, g (s)	7.5	51.8	40.3	40.3	15.2	15.2
Actuated g/C Ratio	0.10	0.69	0.54	0.54	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	177	1287	1902	851	359	321
v/s Ratio Prot	0.04	c0.63	0.51		c0.20	
v/s Ratio Perm				0.14		0.08
v/c Ratio	0.43	0.92	0.94	0.25	0.99	0.39
Uniform Delay, d1	31.7	9.8	16.3	9.3	29.9	25.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	10.2	10.1	0.2	46.1	3.6
Delay (s)	33.4	20.0	26.3	9.4	76.0	29.5
Level of Service	C	B	C	A	E	C
Approach Delay (s)		20.8	23.2		52.9	
Approach LOS		C	C		D	

Intersection Summary			
HCM Average Control Delay	27.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	47	1312	52	434	1751	286	214	285	46	46	600	892
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	1426	57	472	1903	311	233	310	50	50	652	970
RTOR Reduction (vph)	0	0	19	0	0	80	0	0	32	0	0	219
Lane Group Flow (vph)	51	1426	38	472	1903	231	233	310	18	50	652	751
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	4.0	34.0	34.0	21.0	51.0	51.0	11.0	42.7	42.7	6.3	38.0	38.0
Effective Green, g (s)	4.0	34.0	34.0	21.0	51.0	51.0	11.0	42.7	42.7	6.3	38.0	38.0
Actuated g/C Ratio	0.03	0.28	0.28	0.18	0.42	0.42	0.09	0.36	0.36	0.05	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	59	1003	449	310	1504	673	162	1259	563	93	1121	501
v/s Ratio Prot	0.03	c0.40		c0.27	0.54		c0.13	0.09		0.03	0.18	
v/s Ratio Perm			0.02			0.15			0.01			c0.47
v/c Ratio	0.86	1.42	0.09	1.52	1.27	0.34	1.44	0.25	0.03	0.54	0.58	1.50
Uniform Delay, d1	57.7	43.0	31.6	49.5	34.5	23.2	54.5	27.3	25.2	55.4	34.3	41.0
Progression Factor	1.00	1.00	1.00	0.82	0.62	0.34	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	70.2	195.6	0.1	243.4	122.2	0.2	228.7	0.5	0.1	5.9	2.2	235.2
Delay (s)	127.9	238.6	31.7	284.1	143.5	8.0	283.2	27.8	25.3	61.3	36.5	276.2
Level of Service	F	F	C	F	F	A	F	C	C	E	D	F
Approach Delay (s)		227.3			152.5			127.9			176.3	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	174.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	113.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	1706	151	205	1823	250	276	774	151	445	445	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	1854	164	223	1982	272	300	841	164	484	484	185
RTOR Reduction (vph)	0	0	45	0	0	65	0	0	56	0	0	110
Lane Group Flow (vph)	315	1854	119	223	1982	207	300	841	109	484	484	75
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	11.0	48.0	48.0	9.0	46.0	46.0	14.6	30.0	30.0	17.0	32.4	32.4
Effective Green, g (s)	11.0	48.0	48.0	9.0	46.0	46.0	14.6	30.0	30.0	17.0	32.4	32.4
Actuated g/C Ratio	0.09	0.40	0.40	0.08	0.38	0.38	0.12	0.25	0.25	0.14	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	315	2034	633	257	1949	607	418	885	396	486	956	427
v/s Ratio Prot	c0.09	0.36		0.06	c0.39		0.09	c0.24		c0.14	0.14	
v/s Ratio Perm			0.08			0.13			0.07			0.05
v/c Ratio	1.00	0.91	0.19	0.87	1.02	0.34	0.72	0.95	0.27	1.00	0.51	0.18
Uniform Delay, d1	54.5	34.0	23.4	54.9	37.0	26.2	50.7	44.3	36.2	51.5	37.0	33.6
Progression Factor	1.35	0.63	0.43	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.2	0.7	0.0	25.1	24.7	0.3	5.8	20.4	1.7	39.5	1.9	0.9
Delay (s)	89.0	22.3	10.0	80.0	61.7	26.6	56.5	64.6	37.9	91.0	39.0	34.5
Level of Service	F	C	A	E	E	C	E	E	D	F	D	C
Approach Delay (s)		30.4			59.5			59.4			60.1	
Approach LOS		C			E			E			E	

Intersection Summary			
HCM Average Control Delay	50.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	573	1474	222	310	1513	171	432	672	189	219	447	425
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	623	1602	241	337	1645	186	470	730	205	238	486	462
RTOR Reduction (vph)	0	0	105	0	0	89	0	0	111	0	0	218
Lane Group Flow (vph)	623	1602	136	337	1645	97	470	730	94	238	486	244
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.0	34.1	34.1	10.9	29.0	29.0	12.0	22.0	22.0	7.0	17.0	17.0
Effective Green, g (s)	16.0	34.1	34.1	10.9	29.0	29.0	12.0	22.0	22.0	7.0	17.0	17.0
Actuated g/C Ratio	0.18	0.38	0.38	0.12	0.32	0.32	0.13	0.24	0.24	0.08	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	610	1927	600	416	1639	510	458	865	387	267	668	299
v/s Ratio Prot	c0.18	0.32		0.10	c0.32		c0.14	c0.21		0.07	0.14	
v/s Ratio Perm			0.09			0.06			0.06			0.15
v/c Ratio	1.02	0.83	0.23	0.81	1.00	0.19	1.03	0.84	0.24	0.89	0.73	0.82
Uniform Delay, d1	37.0	25.3	19.0	38.5	30.5	22.0	39.0	32.4	27.3	41.1	34.3	35.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	41.9	3.2	0.2	11.3	23.1	0.2	48.9	9.9	1.5	28.7	6.8	21.2
Delay (s)	78.9	28.6	19.2	49.9	53.6	22.2	87.9	42.2	28.8	69.8	41.1	56.2
Level of Service	E	C	B	D	D	C	F	D	C	E	D	E
Approach Delay (s)		40.4			50.3			55.5			52.8	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	48.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	224	1418	126	264	1576	116	232	355	130	134	490	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	243	1541	137	287	1713	126	252	386	141	146	533	190
RTOR Reduction (vph)	0	0	89	0	0	67	0	0	102	0	0	106
Lane Group Flow (vph)	243	1541	48	287	1713	59	252	386	39	146	533	84
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	5.0	23.0	23.0	4.0	22.0	22.0	5.0	18.0	18.0	4.0	17.0	17.0
Effective Green, g (s)	5.0	23.0	23.0	4.0	22.0	22.0	5.0	18.0	18.0	4.0	17.0	17.0
Actuated g/C Ratio	0.08	0.35	0.35	0.06	0.34	0.34	0.08	0.28	0.28	0.06	0.26	0.26
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	264	1799	560	211	1721	536	264	980	438	211	926	414
v/s Ratio Prot	0.07	0.30		c0.08	c0.34		c0.07	0.11		0.04	c0.15	
v/s Ratio Perm			0.03			0.04			0.02			0.05
v/c Ratio	0.92	0.86	0.09	1.36	1.00	0.11	0.95	0.39	0.09	0.69	0.58	0.20
Uniform Delay, d1	29.8	19.5	14.0	30.5	21.4	14.8	29.9	19.1	17.4	29.9	20.9	18.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.9	4.3	0.1	189.6	20.4	0.1	42.7	1.2	0.4	9.4	2.6	1.1
Delay (s)	64.7	23.7	14.1	220.1	41.9	14.9	72.6	20.3	17.8	39.3	23.5	19.8
Level of Service	E	C	B	F	D	B	E	C	B	D	C	B
Approach Delay (s)		28.2			64.4			36.7			25.3	
Approach LOS		C			E			D			C	

Intersection Summary			
HCM Average Control Delay	42.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1046	65	382	1202	0	51	0	504	163	113	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.93	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3297	
Flt Permitted		1.00	1.00	0.95	1.00		0.60		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1121		1583	1770	3297	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1137	71	415	1307	0	55	0	548	177	123	103
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	375	0	64	0
Lane Group Flow (vph)	0	1137	44	415	1307	0	55	0	173	177	162	0
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		27.4	27.4	20.8	52.2		18.0		18.0	18.0	18.0	
Effective Green, g (s)		27.4	27.4	20.8	52.2		18.0		18.0	18.0	18.0	
Actuated g/C Ratio		0.35	0.35	0.27	0.67		0.23		0.23	0.23	0.23	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1240	555	471	2362		258		364	407	759	
v/s Ratio Prot		c0.32		c0.23	0.37						0.05	
v/s Ratio Perm			0.03				0.05		c0.11	0.10		
v/c Ratio		0.92	0.08	0.88	0.55		0.21		0.48	0.43	0.21	
Uniform Delay, d1		24.3	17.0	27.5	6.9		24.4		26.0	25.7	24.4	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		10.7	0.1	17.3	0.3		0.4		1.0	3.4	0.6	
Delay (s)		35.0	17.0	44.8	7.1		24.8		27.0	29.1	25.0	
Level of Service		C	B	D	A		C		C	C	C	
Approach Delay (s)		33.9			16.2			26.8			26.8	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	1116	0	0	930	698	582	21	841	201	0	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1483	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.45		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1483	1504	1619		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	1213	0	0	1011	759	633	23	914	218	0	407
RTOR Reduction (vph)	0	0	0	0	0	188	0	37	37	0	0	191
Lane Group Flow (vph)	261	1213	0	0	1011	571	544	486	466	218	0	216
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	15.0	55.0			36.0	36.0	37.0	37.0	37.0	16.0		16.0
Effective Green, g (s)	15.0	55.0			36.0	36.0	37.0	37.0	37.0	16.0		16.0
Actuated g/C Ratio	0.12	0.46			0.30	0.30	0.31	0.31	0.31	0.13		0.13
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	221	1622			1062	475	518	457	464	216		211
v/s Ratio Prot	c0.15	0.34			0.29		0.32	c0.33				
v/s Ratio Perm						c0.36			0.31	0.13		c0.14
v/c Ratio	1.18	0.75			0.95	1.20	1.05	1.06	1.01	1.01		1.03
Uniform Delay, d1	52.5	26.8			41.2	42.0	41.5	41.5	41.5	52.0		52.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	118.1	1.9			17.2	109.4	53.4	60.2	43.0	63.6		68.7
Delay (s)	170.6	28.7			58.4	151.4	94.9	101.7	84.5	115.6		120.7
Level of Service	F	C			E	F	F	F	F	F		F
Approach Delay (s)		53.8			98.3			93.8			118.9	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	87.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Scenario 3 – Phase 1D and 1E

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (vph)	105	32	12	524	1133	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1794	1863	1583	3433	1583
Flt Permitted		0.79	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1474	1863	1583	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	35	13	570	1232	168
RTOR Reduction (vph)	0	0	0	318	0	64
Lane Group Flow (vph)	0	149	13	252	1232	104
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)		35.3	35.3	35.3	36.7	36.7
Effective Green, g (s)		35.3	35.3	35.3	36.7	36.7
Actuated g/C Ratio		0.44	0.44	0.44	0.46	0.46
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		650	822	698	1575	726
v/s Ratio Prot			0.01			
v/s Ratio Perm		0.10		c0.16	c0.36	0.07
v/c Ratio		0.23	0.02	0.36	0.78	0.14
Uniform Delay, d1		13.9	12.6	14.8	18.3	12.5
Progression Factor		1.00	1.62	8.24	0.74	0.41
Incremental Delay, d2		0.8	0.0	1.4	0.2	0.0
Delay (s)		14.7	20.5	123.7	13.8	5.1
Level of Service		B	C	F	B	A
Approach Delay (s)		14.7	121.4		12.8	
Approach LOS		B	F		B	

Intersection Summary			
HCM Average Control Delay	42.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	55	767	628	0	0	1354
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	834	683	0	0	1472
RTOR Reduction (vph)	0	447	0	0	0	0
Lane Group Flow (vph)	60	387	683	0	0	1472
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	13.9	13.9	58.1			58.1
Effective Green, g (s)	13.9	13.9	58.1			58.1
Actuated g/C Ratio	0.17	0.17	0.73			0.73
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	308	484	1353			1353
v/s Ratio Prot	0.03		0.37			c0.79
v/s Ratio Perm		c0.14				
v/c Ratio	0.19	0.80	0.50			1.09
Uniform Delay, d1	28.3	31.7	4.7			10.9
Progression Factor	1.00	1.00	0.66			1.36
Incremental Delay, d2	1.4	13.0	0.3			49.2
Delay (s)	29.7	44.7	3.4			64.1
Level of Service	C	D	A			E
Approach Delay (s)	43.7		3.4			64.1
Approach LOS	D		A			E

Intersection Summary			
HCM Average Control Delay	44.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	398	115	285	62	200	66	190	1123	64	117	1027	623
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	433	125	310	67	217	72	207	1221	70	127	1116	677
RTOR Reduction (vph)	0	0	143	0	0	62	0	0	45	0	0	472
Lane Group Flow (vph)	433	125	167	67	217	10	207	1221	25	127	1116	206
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			
Actuated Green, G (s)	14.4	22.2	22.2	3.2	11.0	11.0	6.0	28.1	28.1	10.5	32.6	14.4
Effective Green, g (s)	14.4	22.2	22.2	3.2	11.0	11.0	6.0	28.1	28.1	10.5	32.6	14.4
Actuated g/C Ratio	0.18	0.28	0.28	0.04	0.14	0.14	0.08	0.35	0.35	0.13	0.41	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	618	982	439	137	487	218	257	1786	556	232	1442	285
v/s Ratio Prot	0.13	0.04		0.02	0.06		0.06	c0.24		0.07	c0.32	c0.13
v/s Ratio Perm			c0.11			0.01			0.02			
v/c Ratio	0.70	0.13	0.38	0.49	0.45	0.05	0.81	0.68	0.04	0.55	0.77	0.72
Uniform Delay, d1	30.8	21.6	23.3	37.6	31.7	29.9	36.4	22.2	17.1	32.5	20.5	30.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.92	0.91	1.00	1.00	1.00
Incremental Delay, d2	3.6	0.1	0.6	2.7	0.7	0.1	12.3	1.5	0.1	2.6	4.1	8.7
Delay (s)	34.4	21.7	23.9	40.3	32.4	30.0	46.6	21.9	15.6	35.2	24.6	39.6
Level of Service	C	C	C	D	C	C	D	C	B	D	C	D
Approach Delay (s)		28.8			33.4			25.0			30.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #1 Weber/Herndon
******************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: B[ 14.7]
******************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  1! 0  0    0  1  2  0  1    0  1  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    18     0    0     0     0 1481    83     8 1799     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0    18     0    0     0     0 1481    83     8 1799     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    20     0    0     0     0 1610    90     9 1955     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    20     0    0     0     0 1610    90     9 1955     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9   7.5  6.5   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3   3.5  4.0   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   537  2509 3673   489  xxxx xxxx xxxxx  1700 xxxx xxxxx
Potent Cap.: xxxx xxxx   494    15    5   530  xxxx xxxx xxxxx   380 xxxx xxxxx
Move Cap.:   xxxx xxxx   494    14    5   530  xxxx xxxx xxxxx   380 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.04  0.00 0.00  0.00  xxxx xxxx  xxxx  0.02 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.1  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx  12.6 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  14.7 xxxx xxxxx
LOS by Move:    *    *     B     *    *     *     *    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx   0.1 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.2 xxxx xxxxx  14.7 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     A    *     *     B    *     *
ApproachDel:      12.6           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	278	584	373	59	1037	223	390	29	225	206	40	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	3539	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	3539	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	302	635	405	64	1127	242	424	32	245	224	43	276
RTOR Reduction (vph)	0	0	146	0	0	140	0	0	143	0	0	188
Lane Group Flow (vph)	302	635	259	64	1127	102	424	32	102	224	43	88
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.8	29.6	51.5	3.2	25.0	25.0	21.9	23.0	23.0	8.7	9.8	9.8
Effective Green, g (s)	7.8	29.6	51.5	3.2	25.0	25.0	21.9	23.0	23.0	8.7	9.8	9.8
Actuated g/C Ratio	0.10	0.37	0.64	0.04	0.31	0.31	0.27	0.29	0.29	0.11	0.12	0.12
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	333	1870	1013	136	1099	492	934	532	452	371	227	193
v/s Ratio Prot	c0.09	0.12	0.07	0.02	c0.32		c0.12	0.02		c0.07	0.02	
v/s Ratio Perm			0.09			0.06			0.06			c0.06
v/c Ratio	0.91	0.34	0.26	0.47	1.03	0.21	0.45	0.06	0.23	0.60	0.19	0.46
Uniform Delay, d1	36.0	18.4	6.2	37.8	27.8	20.4	24.3	20.9	22.0	34.3	31.8	32.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.9	0.1	0.1	2.6	33.8	0.2	1.6	0.2	1.2	2.8	0.4	1.7
Delay (s)	62.9	18.5	6.4	40.4	61.6	20.7	25.9	21.1	23.1	37.0	32.2	34.6
Level of Service	E	B	A	D	E	C	C	C	C	D	C	C
Approach Delay (s)		24.8			53.7			24.7			35.4	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM Average Control Delay	36.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	717	8	162	1023	6	41	32	113	6	129	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1645		3433	1715	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	1645		3433	1715	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	779	9	176	1112	7	45	35	123	7	140	158
RTOR Reduction (vph)	0	0	6	0	0	5	0	82	0	0	64	0
Lane Group Flow (vph)	75	779	3	176	1112	2	45	76	0	7	234	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	3.0	18.8	18.8	3.8	19.6	19.6	2.2	19.3		0.7	17.8	
Effective Green, g (s)	3.0	18.8	18.8	3.8	19.6	19.6	2.2	19.3		0.7	17.8	
Actuated g/C Ratio	0.05	0.32	0.32	0.06	0.33	0.33	0.04	0.33		0.01	0.30	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	91	1135	508	223	1184	529	129	542		41	521	
v/s Ratio Prot	0.04	0.22		c0.05	c0.31		c0.01	0.05		0.00	c0.14	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.82	0.69	0.01	0.79	0.94	0.00	0.35	0.14		0.17	0.45	
Uniform Delay, d1	27.5	17.3	13.5	27.0	18.9	13.0	27.5	13.8		28.7	16.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	42.8	1.7	0.0	16.7	13.8	0.0	1.6	0.5		2.0	2.8	
Delay (s)	70.4	19.1	13.5	43.8	32.8	13.0	29.1	14.3		30.6	19.2	
Level of Service	E	B	B	D	C	B	C	B		C	B	
Approach Delay (s)		23.5			34.2			17.6			19.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	27.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1191	103	108	1319	99	135	31	309	171	67	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1609		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1609		3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	1295	112	117	1434	108	147	34	336	186	73	29
RTOR Reduction (vph)	0	0	63	0	0	33	0	100	0	0	0	22
Lane Group Flow (vph)	8	1295	49	117	1434	75	147	270	0	186	73	7
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	31.5	31.5	3.1	33.8	33.8	4.0	17.0		4.0	17.0	17.0
Effective Green, g (s)	0.8	31.5	31.5	3.1	33.8	33.8	4.0	17.0		4.0	17.0	17.0
Actuated g/C Ratio	0.01	0.44	0.44	0.04	0.47	0.47	0.06	0.24		0.06	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	38	1557	696	149	1671	747	192	382		192	442	376
v/s Ratio Prot	0.00	0.37		c0.03	c0.41		0.04	c0.17		c0.05	0.04	
v/s Ratio Perm			0.03			0.05						0.00
v/c Ratio	0.21	0.83	0.07	0.79	0.86	0.10	0.77	0.71		0.97	0.17	0.02
Uniform Delay, d1	35.1	17.7	11.6	33.9	16.8	10.5	33.3	25.0		33.7	21.7	20.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.8	4.0	0.0	23.2	4.6	0.1	16.5	10.5		55.2	0.8	0.1
Delay (s)	37.8	21.7	11.6	57.1	21.4	10.5	49.9	35.6		89.0	22.5	21.0
Level of Service	D	C	B	E	C	B	D	D		F	C	C
Approach Delay (s)		21.0			23.2			39.6			65.3	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	71.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	1256	172	90	1088	264	153	286	147	488	397	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	1365	187	98	1183	287	166	311	160	530	432	303
RTOR Reduction (vph)	0	0	128	0	0	214	0	0	121	0	0	139
Lane Group Flow (vph)	283	1365	59	98	1183	73	166	311	39	530	432	164
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	19.6	19.6	3.2	16.8	16.8	6.8	16.0	16.0	11.0	20.2	20.2
Effective Green, g (s)	6.0	19.6	19.6	3.2	16.8	16.8	6.8	16.0	16.0	11.0	20.2	20.2
Actuated g/C Ratio	0.09	0.30	0.30	0.05	0.26	0.26	0.10	0.24	0.24	0.17	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	313	1515	472	167	1298	404	355	861	385	574	1086	486
v/s Ratio Prot	c0.08	c0.27		0.03	0.23		0.05	0.09		c0.15	c0.12	
v/s Ratio Perm			0.04			0.05			0.02			0.10
v/c Ratio	0.90	0.90	0.12	0.59	0.91	0.18	0.47	0.36	0.10	0.92	0.40	0.34
Uniform Delay, d1	29.6	22.2	16.8	30.7	23.8	19.1	27.8	20.7	19.3	27.0	18.0	17.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.7	7.7	0.1	5.2	9.8	0.2	1.0	1.2	0.5	20.6	1.1	1.9
Delay (s)	57.4	29.9	17.0	35.8	33.6	19.3	28.8	21.8	19.8	47.6	19.1	19.5
Level of Service	E	C	B	D	C	B	C	C	B	D	B	B
Approach Delay (s)		32.8			31.1			23.1			31.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1899	1	2	1444	56	0	1	0	56	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.76		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		3539		2736		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	2064	1	2	1570	61	0	1	0	61	0	1
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0	0	1
Lane Group Flow (vph)	1	2064	1	2	1570	35	0	1	0	61	0	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		6
Actuated Green, G (s)	0.7	26.4	26.4	0.7	26.4	26.4		6.5		6.5		6.5
Effective Green, g (s)	0.7	26.4	26.4	0.7	26.4	26.4		6.5		6.5		6.5
Actuated g/C Ratio	0.02	0.58	0.58	0.02	0.58	0.58		0.14		0.14		0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	53	2944	916	53	2944	916		504		390		226
v/s Ratio Prot	0.00	c0.41		c0.00	0.31			0.00				
v/s Ratio Perm			0.00			0.02				c0.02		0.00
v/c Ratio	0.02	0.70	0.00	0.04	0.53	0.04		0.00		0.16		0.00
Uniform Delay, d1	22.1	6.8	4.0	22.1	5.8	4.1		16.8		17.1		16.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2	0.1	0.8	0.0	0.3	0.2	0.0		0.0		0.2		0.0
Delay (s)	22.3	7.6	4.0	22.4	6.0	4.2		16.8		17.3		16.8
Level of Service	C	A	A	C	A	A		B		B		B
Approach Delay (s)		7.6			6.0			16.8			17.3	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	45.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	1696	204	370	1246	25	169	98	421	66	94	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3482		3433	3529		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.66	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	1770	3482		3433	3529		1232	1863	1583	1211	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	1843	222	402	1354	27	184	107	458	72	102	51
RTOR Reduction (vph)	0	9	0	0	1	0	0	0	140	0	0	41
Lane Group Flow (vph)	83	2056	0	402	1380	0	184	107	318	72	102	10
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	7.7	56.8		12.0	61.1		20.0	20.0	20.0	20.0	20.0	20.0
Effective Green, g (s)	7.7	56.8		12.0	61.1		20.0	20.0	20.0	20.0	20.0	20.0
Actuated g/C Ratio	0.08	0.56		0.12	0.61		0.20	0.20	0.20	0.20	0.20	0.20
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	135	1962		409	2139		244	370	314	240	370	314
v/s Ratio Prot	0.05	c0.59		c0.12	0.39			0.06			0.05	
v/s Ratio Perm							0.15		c0.20	0.06		0.01
v/c Ratio	0.61	1.05		0.98	0.65		0.75	0.29	1.01	0.30	0.28	0.03
Uniform Delay, d1	45.1	22.0		44.3	12.8		38.1	34.4	40.4	34.4	34.3	32.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	34.2		39.7	0.7		19.3	2.0	53.8	3.2	1.8	0.2
Delay (s)	53.2	56.2		84.0	13.5		57.3	36.3	94.2	37.6	36.1	32.8
Level of Service	D	E		F	B		E	D	F	D	D	C
Approach Delay (s)		56.1			29.4			76.9			35.8	
Approach LOS		E			C			E			D	

Intersection Summary			
HCM Average Control Delay	48.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	100.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	2228	97	228	1424	248	149	137	263	222	159	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	2422	105	248	1548	270	162	149	286	241	173	166
RTOR Reduction (vph)	0	0	8	0	0	112	0	0	83	0	0	124
Lane Group Flow (vph)	132	2422	97	248	1548	158	162	149	203	241	173	42
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.6	72.0	72.0	7.0	70.4	70.4	6.0	18.0	18.0	7.0	19.0	19.0
Effective Green, g (s)	8.6	72.0	72.0	7.0	70.4	70.4	6.0	18.0	18.0	7.0	19.0	19.0
Actuated g/C Ratio	0.07	0.60	0.60	0.06	0.59	0.59	0.05	0.15	0.15	0.06	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	246	2123	950	200	2983	929	172	531	237	200	560	251
v/s Ratio Prot	0.04	c0.68		c0.07	0.30		0.05	0.04		c0.07	0.05	
v/s Ratio Perm			0.06			0.10			c0.13			0.03
v/c Ratio	0.54	1.14	0.10	1.24	0.52	0.17	0.94	0.28	0.86	1.20	0.31	0.17
Uniform Delay, d1	53.8	24.0	10.2	56.5	14.7	11.4	56.8	45.3	49.7	56.5	44.7	43.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	69.6	0.0	143.1	0.2	0.1	51.6	1.3	30.6	129.8	1.4	1.4
Delay (s)	56.0	93.6	10.3	199.6	14.9	11.5	108.4	46.6	80.3	186.3	46.1	45.1
Level of Service	E	F	B	F	B	B	F	D	F	F	D	D
Approach Delay (s)		88.5			36.6			79.5			104.1	
Approach LOS		F			D			E			F	

Intersection Summary			
HCM Average Control Delay	70.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	2666	181	333	1973	130	94	77	307	250	103	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	2898	197	362	2145	141	102	84	334	272	112	53
RTOR Reduction (vph)	0	0	50	0	0	34	0	0	93	0	0	41
Lane Group Flow (vph)	68	2898	147	362	2145	107	102	84	241	272	112	12
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	59.8	59.8	11.0	66.8	66.8	6.9	18.0	18.0	16.0	27.1	27.1
Effective Green, g (s)	4.0	59.8	59.8	11.0	66.8	66.8	6.9	18.0	18.0	16.0	27.1	27.1
Actuated g/C Ratio	0.03	0.50	0.50	0.09	0.55	0.55	0.06	0.15	0.15	0.13	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2517	784	313	2812	875	196	527	236	234	1141	355
v/s Ratio Prot	0.02	c0.57		c0.11	0.42		0.03	0.02		c0.15	0.02	
v/s Ratio Perm			0.09			0.07			c0.15			0.01
v/c Ratio	0.60	1.15	0.19	1.16	0.76	0.12	0.52	0.16	1.02	1.16	0.10	0.03
Uniform Delay, d1	57.6	30.5	17.0	54.9	20.9	12.9	55.3	44.8	51.4	52.4	37.2	36.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	73.2	0.1	100.3	1.3	0.1	2.5	0.6	64.4	109.7	0.2	0.2
Delay (s)	65.7	103.7	17.1	155.2	22.1	13.0	57.8	45.5	115.8	162.1	37.3	36.8
Level of Service	E	F	B	F	C	B	E	D	F	F	D	D
Approach Delay (s)		97.5			39.8			93.1			115.0	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	75.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	953	2181	109	247	1349	375	155	805	219	173	731	791
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1036	2371	118	268	1466	408	168	875	238	188	795	860
RTOR Reduction (vph)	0	0	35	0	0	79	0	0	123	0	0	1
Lane Group Flow (vph)	1036	2371	83	268	1466	329	168	875	115	188	795	859
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	36.0	61.0	61.0	10.0	35.0	35.0	6.0	24.0	24.0	9.0	27.0	63.0
Effective Green, g (s)	36.0	61.0	61.0	10.0	35.0	35.0	6.0	24.0	24.0	9.0	27.0	63.0
Actuated g/C Ratio	0.30	0.51	0.51	0.08	0.29	0.29	0.05	0.20	0.20	0.08	0.22	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1030	2585	805	286	1483	462	172	1017	317	257	796	884
v/s Ratio Prot	c0.30	0.47		0.08	c0.29		c0.05	0.17		0.05	c0.22	c0.29
v/s Ratio Perm			0.05			0.21			0.07			0.25
v/c Ratio	1.01	0.92	0.10	0.94	0.99	0.71	0.98	0.86	0.36	0.73	1.00	0.97
Uniform Delay, d1	42.0	27.2	15.3	54.7	42.3	38.0	56.9	46.4	41.4	54.3	46.5	27.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.5	5.7	0.1	36.4	20.4	5.2	61.1	9.5	3.2	10.2	31.6	23.4
Delay (s)	71.5	32.9	15.4	91.1	62.7	43.2	118.1	55.9	44.6	64.6	78.1	51.1
Level of Service	E	C	B	F	E	D	F	E	D	E	E	D
Approach Delay (s)		43.6			62.6			61.9			64.1	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	55.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	234	1976	140	109	1629	238	129	254	125	219	384	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	254	2148	152	118	1771	259	140	276	136	238	417	255
RTOR Reduction (vph)	0	0	65	0	0	90	0	0	84	0	0	88
Lane Group Flow (vph)	254	2148	88	118	1771	169	140	276	52	238	417	167
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	37.0	37.0	4.0	33.0	33.0	5.0	17.0	17.0	6.0	18.0	18.0
Effective Green, g (s)	8.0	37.0	37.0	4.0	33.0	33.0	5.0	17.0	17.0	6.0	18.0	18.0
Actuated g/C Ratio	0.10	0.46	0.46	0.05	0.41	0.41	0.06	0.21	0.21	0.08	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	2352	732	172	2098	653	215	1081	336	257	1144	356
v/s Ratio Prot	c0.07	c0.42		0.03	0.35		0.04	0.05		c0.07	0.08	
v/s Ratio Perm			0.06			0.11			0.03			c0.11
v/c Ratio	0.74	0.91	0.12	0.69	0.84	0.26	0.65	0.26	0.15	0.93	0.36	0.47
Uniform Delay, d1	35.0	20.0	12.2	37.4	21.2	15.5	36.6	26.2	25.6	36.8	26.2	26.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.3	6.0	0.1	10.8	3.3	0.2	6.9	0.6	1.0	36.5	0.9	4.4
Delay (s)	43.3	26.0	12.3	48.2	24.5	15.7	43.5	26.8	26.6	73.3	27.1	31.3
Level of Service	D	C	B	D	C	B	D	C	C	E	C	C
Approach Delay (s)		26.9			24.7			31.0			40.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	870	396	0	0	584	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	946	430	0	0	635	199
RTOR Reduction (vph)	0	263	0	0	0	43
Lane Group Flow (vph)	946	167	0	0	635	156
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	31.1	31.1			40.9	40.9
Effective Green, g (s)	31.1	31.1			40.9	40.9
Actuated g/C Ratio	0.39	0.39			0.51	0.51
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1376	615			1755	809
v/s Ratio Prot	c0.27				c0.18	
v/s Ratio Perm		0.11				0.10
v/c Ratio	0.69	0.27			0.36	0.19
Uniform Delay, d1	20.4	16.7			11.7	10.6
Progression Factor	0.34	0.04			1.00	1.00
Incremental Delay, d2	1.1	0.2			0.6	0.5
Delay (s)	7.9	0.9			12.3	11.1
Level of Service	A	A			B	B
Approach Delay (s)	5.7			0.0	12.0	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	34	60	4	333	94	83	97	0	79	7	0	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3508		1770	3539	1583	1770		1583	1770		1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3508		1770	3539	1583	1770		1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	65	4	362	102	90	105	0	86	8	0	432
RTOR Reduction (vph)	0	3	0	0	0	37	0	0	72	0	0	362
Lane Group Flow (vph)	37	66	0	362	102	53	105	0	14	8	0	70
Turn Type	Prot			Prot		Perm	custom		custom	custom		custom
Protected Phases	5	2		1	6							
Permitted Phases						6	4		4	8		8
Actuated Green, G (s)	3.2	20.8		17.5	35.1	35.1	9.7		9.7	9.7		9.7
Effective Green, g (s)	3.2	20.8		17.5	35.1	35.1	9.7		9.7	9.7		9.7
Actuated g/C Ratio	0.05	0.35		0.29	0.59	0.59	0.16		0.16	0.16		0.16
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	94	1216		516	2070	926	286		256	286		256
v/s Ratio Prot	0.02	0.02		c0.20	0.03							
v/s Ratio Perm						c0.03	c0.06		0.01	0.00		0.04
v/c Ratio	0.39	0.05		0.70	0.05	0.06	0.37		0.05	0.03		0.27
Uniform Delay, d1	27.5	13.1		18.9	5.3	5.3	22.4		21.3	21.2		22.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	2.7	0.1		4.3	0.0	0.1	0.8		0.1	0.0		0.6
Delay (s)	30.2	13.1		23.2	5.4	5.5	23.2		21.4	21.2		22.6
Level of Service	C	B		C	A	A	C		C	C		C
Approach Delay (s)		19.1			17.0			22.4			22.6	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	26	286	189	41	175	149
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	311	205	45	190	162

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	28	311	250	352
Volume Left (vph)	28	0	0	190
Volume Right (vph)	0	311	45	0
Hadj (s)	0.53	-0.67	-0.07	0.14
Departure Headway (s)	6.6	5.4	5.3	5.4
Degree Utilization, x	0.05	0.47	0.37	0.53
Capacity (veh/h)	513	616	638	641
Control Delay (s)	8.8	11.9	11.4	14.2
Approach Delay (s)	11.7		11.4	14.2
Approach LOS	B		B	B

Intersection Summary			
Delay	12.5		
HCM Level of Service	B		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Polk/Sierra

Cycle (sec):	100	Critical Vol./Cap.(X):	0.509
Loss Time (sec):	0	Average Delay (sec/veh):	12.6
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk						Dante					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0 1 0			1 0 1 0 1			1 0 0 1 0			1 0 1 0 1		
Volume Module:												
Base Vol:	52	237	23	60	189	28	54	104	70	40	65	70
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	52	237	23	60	189	28	54	104	70	40	65	70
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	57	258	25	65	205	30	59	113	76	43	71	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	258	25	65	205	30	59	113	76	43	71	76
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	57	258	25	65	205	30	59	113	76	43	71	76
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.91	0.09	1.00	1.00	1.00	1.00	0.60	0.40	1.00	1.00	1.00
Final Sat.:	506	506	49	471	508	557	475	318	214	439	468	514
Capacity Analysis Module:												
Vol/Sat:	0.11	0.51	0.51	0.14	0.40	0.05	0.12	0.36	0.36	0.10	0.15	0.15
Crit Moves:		****			****				****		****	
Delay/Veh:	10.3	14.8	14.8	11.1	13.7	9.1	10.8	12.2	12.2	11.1	11.0	10.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.3	14.8	14.8	11.1	13.7	9.1	10.8	12.2	12.2	11.1	11.0	10.2
LOS by Move:	B	B	B	B	B	A	B	B	B	B	B	B
ApproachDel:		14.0			12.7			11.9			10.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		14.0			12.7			11.9			10.7	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.1	0.9	0.9	0.1	0.6	0.1	0.1	0.5	0.5	0.1	0.2	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	69	4	7	10	4	190	8	487	0	62	247	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	75	4	8	11	4	207	9	529	0	67	268	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	905	961	280	960	973	265	291			529		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	905	961	280	960	973	265	291			529		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	52	98	99	94	98	72	99			93		
cM capacity (veh/h)	155	236	717	195	233	734	1267			1034		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	75	4	8	11	4	207	9	265	265	0	67	291
Volume Left	75	0	0	11	0	0	9	0	0	0	67	0
Volume Right	0	0	8	0	0	207	0	0	0	0	0	23
cSH	155	236	717	195	233	734	1267	1700	1700	1700	1034	1700
Volume to Capacity	0.48	0.02	0.01	0.06	0.02	0.28	0.01	0.16	0.16	0.00	0.07	0.17
Queue Length 95th (ft)	57	1	1	4	1	29	1	0	0	0	5	0
Control Delay (s)	48.3	20.5	10.1	24.6	20.8	11.8	7.9	0.0	0.0	0.0	8.7	0.0
Lane LOS	E	C	B	C	C	B	A				A	
Approach Delay (s)	43.6			12.6			0.1				1.6	
Approach LOS	E			B								

Intersection Summary				
Average Delay	6.0			
Intersection Capacity Utilization	39.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	93	184	529	154	126	208
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	101	200	575	167	137	226

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	301	575	167	137	226
Volume Left (vph)	0	575	0	137	0
Volume Right (vph)	200	0	0	0	226
Hadj (s)	-0.36	0.53	0.03	0.53	-0.67
Departure Headway (s)	6.0	6.7	6.2	7.6	6.4
Degree Utilization, x	0.50	1.07	0.29	0.29	0.40
Capacity (veh/h)	582	532	570	460	545
Control Delay (s)	15.0	83.3	10.5	12.5	12.6
Approach Delay (s)	15.0	66.9		12.5	
Approach LOS	C	F		B	

Intersection Summary			
Delay	41.8		
HCM Level of Service	E		
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	49	185	8	4	125	251	2	4	4	544	10	169
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	201	9	4	136	273	2	4	4	591	11	184

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	154	109	140	273	11	786
Volume Left (vph)	53	0	4	0	2	591
Volume Right (vph)	0	9	0	273	4	184
Hadj (s)	0.21	-0.02	0.05	-0.67	-0.17	0.04
Departure Headway (s)	7.4	7.1	7.0	6.3	7.0	5.8
Degree Utilization, x	0.31	0.22	0.27	0.48	0.02	1.26
Capacity (veh/h)	479	494	503	564	476	617
Control Delay (s)	12.5	10.9	11.4	13.7	10.2	150.2
Approach Delay (s)	11.8		12.9		10.2	150.2
Approach LOS	B		B		B	F

Intersection Summary			
Delay	86.0		
HCM Level of Service	F		
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.452
Loss Time (sec):	0	Average Delay (sec/veh):	12.7
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk									Dante							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1	0	1	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1
Volume Module:																				
Base Vol:	185		12		20	103		14		52	19		218		40	28		318		32
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	185		12		20	103		14		52	19		218		40	28		318		32
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92	0.92		0.92		0.92	0.92		0.92	
PHF Volume:	201		13		22	112		15		57	21		237		43	30		346		35
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Reduced Vol:	201		13		22	112		15		57	21		237		43	30		346		35
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
FinalVolume:	201		13		22	112		15		57	21		237		43	30		346		35
Saturation Flow Module:																				
Adjustment:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Lanes:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	2.00		1.00		1.00	2.00		1.00	
Final Sat.:	445		467		514	429		452		497	448		965		528	467		1008		553
Capacity Analysis Module:																				
Vol/Sat:	0.45	0.03		0.04		0.26	0.03		0.11		0.05	0.25		0.08		0.07	0.34		0.06	
Crit Moves:	****					****						****					****			
Delay/Veh:	16.1	10.1		9.5		13.1	10.3		10.2		10.6	11.9		9.6		10.5	12.9		9.2	
Delay Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	16.1	10.1		9.5		13.1	10.3		10.2		10.6	11.9		9.6		10.5	12.9		9.2	
LOS by Move:	C	B		A		B	B		B		B	B		A		B	B		A	
ApproachDel:	15.2					12.0					11.5					12.4				
Delay Adj:	1.00					1.00					1.00					1.00				
ApprAdjDel:	15.2					12.0					11.5					12.4				
LOS by Appr:	C					B					B					B				
AllWayAvgQ:	0.7	0.0		0.0		0.3	0.0		0.1		0.0	0.3		0.1		0.1	0.5		0.1	

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	893	81	104	545	95	49	432	82	86	461	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	971	88	113	592	103	53	470	89	93	501	75
RTOR Reduction (vph)	0	0	40	0	15	0	0	0	46	0	0	43
Lane Group Flow (vph)	185	971	48	113	680	0	53	470	43	93	501	32
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.9	47.0	47.0	6.0	39.1		3.2	16.0	16.0	5.0	17.8	17.8
Effective Green, g (s)	13.9	47.0	47.0	6.0	39.1		3.2	16.0	16.0	5.0	17.8	17.8
Actuated g/C Ratio	0.15	0.52	0.52	0.07	0.43		0.04	0.18	0.18	0.06	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	273	973	827	118	1504		63	629	281	98	700	313
v/s Ratio Prot	0.10	c0.52		c0.06	0.20		0.03	0.13		c0.05	c0.14	
v/s Ratio Perm			0.03						0.03			0.02
v/c Ratio	0.68	1.00	0.06	0.96	0.45		0.84	0.75	0.15	0.95	0.72	0.10
Uniform Delay, d1	35.9	21.5	10.6	41.9	17.9		43.1	35.1	31.3	42.4	33.7	29.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	28.1	0.0	68.8	0.2		60.8	4.8	0.3	73.5	3.5	0.1
Delay (s)	42.5	49.6	10.6	110.7	18.1		104.0	39.9	31.5	115.9	37.2	29.7
Level of Service	D	D	B	F	B		F	D	C	F	D	C
Approach Delay (s)		45.8			31.1			44.2			47.3	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	42.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	29	11	4	18	68	8	334	6	45	178	26
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	32	12	4	20	74	9	363	7	49	193	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	755	678	193	699	700	363	222			370		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	755	678	193	699	700	363	222			370		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	76	91	99	99	94	89	99			96		
cM capacity (veh/h)	267	356	848	314	346	682	1347			1189		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	109	98	372	7	242	28
Volume Left	65	4	9	0	49	0
Volume Right	12	74	0	7	0	28
cSH	314	547	1347	1700	1189	1700
Volume to Capacity	0.35	0.18	0.01	0.00	0.04	0.02
Queue Length 95th (ft)	38	16	0	0	3	0
Control Delay (s)	22.5	13.0	0.2	0.0	1.9	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	22.5	13.0	0.2		1.7	
Approach LOS	C	B				

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	900	488	568	841	71	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	978	530	617	914	77	290
RTOR Reduction (vph)	0	179	0	0	0	249
Lane Group Flow (vph)	978	351	617	914	77	41
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	55.0	55.0	36.0	95.0	17.0	17.0
Effective Green, g (s)	55.0	55.0	36.0	95.0	17.0	17.0
Actuated g/C Ratio	0.46	0.46	0.30	0.79	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	854	726	531	2802	251	224
v/s Ratio Prot	c0.53		c0.35	0.26	c0.04	
v/s Ratio Perm		0.22				0.03
v/c Ratio	1.15	0.48	1.16	0.33	0.31	0.18
Uniform Delay, d1	32.5	22.6	42.0	3.5	46.2	45.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	79.1	0.5	92.1	0.1	3.1	1.8
Delay (s)	111.6	23.1	134.1	3.6	49.4	47.2
Level of Service	F	C	F	A	D	D
Approach Delay (s)	80.5			56.2	47.6	
Approach LOS	F			E	D	

Intersection Summary			
HCM Average Control Delay	66.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (vph)	117	1038	1153	260	145	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	127	1128	1253	283	158	276
RTOR Reduction (vph)	0	0	0	138	0	217
Lane Group Flow (vph)	127	1128	1253	145	158	59
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	8.7	51.0	38.3	38.3	16.0	16.0
Effective Green, g (s)	8.7	51.0	38.3	38.3	16.0	16.0
Actuated g/C Ratio	0.12	0.68	0.51	0.51	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	205	1267	1807	808	378	338
v/s Ratio Prot	0.07	c0.61	0.35		c0.09	
v/s Ratio Perm				0.09		0.04
v/c Ratio	0.62	0.89	0.69	0.18	0.42	0.17
Uniform Delay, d1	31.6	9.7	13.9	9.9	25.5	24.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	8.2	1.2	0.1	3.4	1.1
Delay (s)	37.1	17.9	15.1	10.0	28.9	25.2
Level of Service	D	B	B	A	C	C
Approach Delay (s)		19.8	14.1		26.5	
Approach LOS		B	B		C	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	36	1010	39	370	1124	180	216	392	31	17	302	527
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1098	42	402	1222	196	235	426	34	18	328	573
RTOR Reduction (vph)	0	0	19	0	0	80	0	0	24	0	0	308
Lane Group Flow (vph)	39	1098	23	402	1222	116	235	426	10	18	328	265
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	3.6	35.6	35.6	25.0	57.0	57.0	15.0	31.4	31.4	2.0	18.4	18.4
Effective Green, g (s)	3.6	35.6	35.6	25.0	57.0	57.0	15.0	31.4	31.4	2.0	18.4	18.4
Actuated g/C Ratio	0.03	0.32	0.32	0.23	0.52	0.52	0.14	0.29	0.29	0.02	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1145	512	402	1834	820	241	1010	452	32	592	265
v/s Ratio Prot	0.02	c0.31		c0.23	0.35		c0.13	0.12		0.01	0.09	
v/s Ratio Perm			0.01			0.07			0.01			c0.17
v/c Ratio	0.67	0.96	0.05	1.00	0.67	0.14	0.98	0.42	0.02	0.56	0.55	1.00
Uniform Delay, d1	52.6	36.5	25.5	42.5	19.5	13.8	47.3	31.9	28.3	53.6	42.0	45.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.6	17.4	0.0	44.9	0.9	0.1	50.5	1.3	0.1	20.7	3.7	55.2
Delay (s)	79.2	53.9	25.6	87.4	20.4	13.9	97.8	33.2	28.3	74.2	45.7	101.0
Level of Service	E	D	C	F	C	B	F	C	C	E	D	F
Approach Delay (s)		53.7			34.5			54.8			80.7	
Approach LOS		D			C			D			F	

Intersection Summary			
HCM Average Control Delay	51.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	1206	74	121	1142	94	171	230	64	240	695	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	1311	80	132	1241	102	186	250	70	261	755	158
RTOR Reduction (vph)	0	0	56	0	0	71	0	0	51	0	0	112
Lane Group Flow (vph)	112	1311	24	132	1241	31	186	250	19	261	755	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	18.0	18.0	3.2	18.0	18.0	5.3	16.5	16.5	6.3	17.5	17.5
Effective Green, g (s)	3.2	18.0	18.0	3.2	18.0	18.0	5.3	16.5	16.5	6.3	17.5	17.5
Actuated g/C Ratio	0.05	0.30	0.30	0.05	0.30	0.30	0.09	0.28	0.28	0.10	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1526	475	183	1526	475	303	973	435	360	1032	462
v/s Ratio Prot	0.03	c0.26		c0.04	0.24		0.05	0.07		c0.08	c0.21	
v/s Ratio Perm			0.02			0.02			0.01			0.03
v/c Ratio	0.61	0.86	0.05	0.72	0.81	0.06	0.61	0.26	0.04	0.72	0.73	0.10
Uniform Delay, d1	27.8	19.8	14.9	28.0	19.4	15.0	26.4	17.0	16.0	26.0	19.1	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	5.1	0.0	13.1	3.4	0.1	3.7	0.6	0.2	7.1	4.6	0.4
Delay (s)	33.7	24.9	15.0	41.1	22.9	15.0	30.0	17.6	16.2	33.1	23.7	15.9
Level of Service	C	C	B	D	C	B	C	B	B	C	C	B
Approach Delay (s)		25.0			24.0			22.0			24.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	251	1443	101	144	952	59	181	408	384	279	510	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	273	1568	110	157	1035	64	197	443	417	303	554	439
RTOR Reduction (vph)	0	0	63	0	0	46	0	0	113	0	0	112
Lane Group Flow (vph)	273	1568	47	157	1035	18	197	443	304	303	554	327
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	24.0	24.0	4.0	20.0	20.0	5.0	19.0	19.0	7.0	21.0	21.0
Effective Green, g (s)	8.0	24.0	24.0	4.0	20.0	20.0	5.0	19.0	19.0	7.0	21.0	21.0
Actuated g/C Ratio	0.11	0.34	0.34	0.06	0.29	0.29	0.07	0.27	0.27	0.10	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	392	1743	543	196	1453	452	245	961	430	343	1062	475
v/s Ratio Prot	c0.08	c0.31		0.05	0.20		0.06	0.13		c0.09	0.16	
v/s Ratio Perm			0.03			0.01			0.19			c0.21
v/c Ratio	0.70	0.90	0.09	0.80	0.71	0.04	0.80	0.46	0.71	0.88	0.52	0.69
Uniform Delay, d1	29.8	21.9	15.6	32.6	22.4	18.1	32.0	21.2	23.0	31.1	20.3	21.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3	6.6	0.1	20.5	1.7	0.0	17.2	1.6	9.4	22.5	1.8	7.9
Delay (s)	35.1	28.5	15.6	53.1	24.1	18.1	49.2	22.8	32.4	53.6	22.2	29.5
Level of Service	D	C	B	D	C	B	D	C	C	D	C	C
Approach Delay (s)		28.7			27.4			31.5			32.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	1586	146	156	1072	67	201	537	266	148	417	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	1724	159	170	1165	73	218	584	289	161	453	170
RTOR Reduction (vph)	0	0	98	0	0	46	0	0	114	0	0	113
Lane Group Flow (vph)	133	1724	61	170	1165	27	218	584	175	161	453	57
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	23.8	23.8	4.0	23.8	23.8	5.0	16.2	16.2	5.0	16.2	16.2
Effective Green, g (s)	4.0	23.8	23.8	4.0	23.8	23.8	5.0	16.2	16.2	5.0	16.2	16.2
Actuated g/C Ratio	0.06	0.37	0.37	0.06	0.37	0.37	0.08	0.25	0.25	0.08	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	211	1862	580	211	1862	580	264	882	395	264	882	395
v/s Ratio Prot	0.04	c0.34		c0.05	0.23		c0.06	c0.17		0.05	0.13	
v/s Ratio Perm			0.04			0.02			0.11			0.04
v/c Ratio	0.63	0.93	0.10	0.81	0.63	0.05	0.83	0.66	0.44	0.61	0.51	0.14
Uniform Delay, d1	29.8	19.8	13.6	30.1	16.9	13.3	29.6	21.9	20.6	29.1	21.0	19.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.0	8.4	0.1	19.6	0.7	0.0	18.6	3.9	3.6	4.0	2.1	0.8
Delay (s)	35.8	28.2	13.7	49.8	17.6	13.3	48.2	25.8	24.2	33.0	23.1	19.8
Level of Service	D	C	B	D	B	B	D	C	C	C	C	B
Approach Delay (s)		27.5			21.3			29.9			24.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1467	35	139	502	0	20	0	408	161	30	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.89	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3161	
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1265		1583	1770	3161	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1595	38	151	546	0	22	0	443	175	33	82
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	155	0	61	0
Lane Group Flow (vph)	0	1595	27	151	546	0	22	0	288	175	54	0
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		35.8	35.8	8.0	47.8		19.0		19.0	19.0	19.0	
Effective Green, g (s)		35.8	35.8	8.0	47.8		19.0		19.0	19.0	19.0	
Actuated g/C Ratio		0.48	0.48	0.11	0.64		0.25		0.25	0.25	0.25	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1694	758	189	2262		321		402	450	803	
v/s Ratio Prot		c0.45		c0.09	0.15						0.02	
v/s Ratio Perm			0.02				0.02		c0.18	0.10		
v/c Ratio		0.94	0.04	0.80	0.24		0.07		0.72	0.39	0.07	
Uniform Delay, d1		18.5	10.3	32.6	5.8		21.2		25.4	23.1	21.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		10.9	0.0	20.5	0.1		0.1		6.0	2.5	0.2	
Delay (s)		29.4	10.4	53.2	5.8		21.3		31.4	25.6	21.3	
Level of Service		C	B	D	A		C		C	C	C	
Approach Delay (s)		29.0			16.1			30.9			23.9	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	344	1096	0	0	554	298	262	15	487	179	0	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.87	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1473	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.57		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1473	1504	2054		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	374	1191	0	0	602	324	285	16	529	195	0	229
RTOR Reduction (vph)	0	0	0	0	0	181	0	83	83	0	0	188
Lane Group Flow (vph)	374	1191	0	0	602	143	256	205	203	195	0	41
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	21.0	42.4			17.4	17.4	18.0	18.0	18.0	16.0		16.0
Effective Green, g (s)	21.0	42.4			17.4	17.4	18.0	18.0	18.0	16.0		16.0
Actuated g/C Ratio	0.24	0.48			0.20	0.20	0.20	0.20	0.20	0.18		0.18
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	420	1697			697	312	342	300	306	372		287
v/s Ratio Prot	c0.21	0.34			c0.17		c0.15	0.14				
v/s Ratio Perm						0.09			0.14	c0.09		0.03
v/c Ratio	0.89	0.70			0.86	0.46	0.75	0.68	0.66	0.52		0.14
Uniform Delay, d1	32.6	18.0			34.4	31.3	33.1	32.6	32.4	32.8		30.4
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	20.3	1.3			10.8	1.1	13.9	12.0	10.8	5.2		1.1
Delay (s)	52.9	19.4			45.2	32.4	47.0	44.5	43.3	38.0		31.5
Level of Service	D	B			D	C	D	D	D	D		C
Approach Delay (s)		27.4			40.7			44.9			34.5	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (vph)	97	35	14	522	1362	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1797	1863	1583	3433	1583
Flt Permitted		0.79	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1479	1863	1583	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	38	15	567	1480	155
RTOR Reduction (vph)	0	0	0	354	0	44
Lane Group Flow (vph)	0	143	15	213	1480	111
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)		33.8	33.8	33.8	48.2	48.2
Effective Green, g (s)		33.8	33.8	33.8	48.2	48.2
Actuated g/C Ratio		0.38	0.38	0.38	0.54	0.54
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		555	700	595	1839	848
v/s Ratio Prot			0.01			
v/s Ratio Perm		0.10		c0.13	c0.43	0.07
v/c Ratio		0.26	0.02	0.36	0.80	0.13
Uniform Delay, d1		19.4	17.7	20.3	17.1	10.4
Progression Factor		1.00	1.20	6.55	0.60	0.41
Incremental Delay, d2		1.1	0.1	1.6	0.2	0.0
Delay (s)		20.5	21.3	134.5	10.6	4.3
Level of Service		C	C	F	B	A
Approach Delay (s)		20.5	131.6		10.0	
Approach LOS		C	F		A	

Intersection Summary			
HCM Average Control Delay	40.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	88	1077	672	0	0	1423
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	1171	730	0	0	1547
RTOR Reduction (vph)	0	363	0	0	0	0
Lane Group Flow (vph)	96	808	730	0	0	1547
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	21.0	21.0	61.0			61.0
Effective Green, g (s)	21.0	21.0	61.0			61.0
Actuated g/C Ratio	0.23	0.23	0.68			0.68
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	413	650	1263			1263
v/s Ratio Prot	0.05		0.39			c0.83
v/s Ratio Perm		c0.29				
v/c Ratio	0.23	1.24	0.58			1.22
Uniform Delay, d1	28.0	34.5	7.7			14.5
Progression Factor	1.00	1.00	0.61			1.10
Incremental Delay, d2	1.3	122.3	0.6			105.4
Delay (s)	29.3	156.8	5.3			121.4
Level of Service	C	F	A			F
Approach Delay (s)	147.1		5.3			121.4
Approach LOS	F		A			F

Intersection Summary			
HCM Average Control Delay	106.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	568	200	127	97	197	191	153	1458	77	105	1188	472
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	617	217	138	105	214	208	166	1585	84	114	1291	513
RTOR Reduction (vph)	0	0	96	0	0	146	0	0	52	0	0	256
Lane Group Flow (vph)	617	217	42	105	214	62	166	1585	32	114	1291	257
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			
Actuated Green, G (s)	21.3	27.7	27.7	4.8	11.2	11.2	5.7	33.4	33.4	8.1	35.8	21.3
Effective Green, g (s)	21.3	27.7	27.7	4.8	11.2	11.2	5.7	33.4	33.4	8.1	35.8	21.3
Actuated g/C Ratio	0.24	0.31	0.31	0.05	0.12	0.12	0.06	0.37	0.37	0.09	0.40	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	812	1089	487	183	440	197	217	1887	587	159	1408	375
v/s Ratio Prot	c0.18	0.06		0.03	c0.06		0.05	c0.31		0.06	c0.36	0.16
v/s Ratio Perm			0.03			0.04			0.02			
v/c Ratio	0.76	0.20	0.09	0.57	0.49	0.31	0.76	0.84	0.06	0.72	0.92	0.69
Uniform Delay, d1	32.0	23.0	22.2	41.6	36.7	35.9	41.5	25.9	18.2	39.8	25.7	31.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	0.84	0.51	0.78	0.67	1.31
Incremental Delay, d2	4.1	0.1	0.1	4.3	0.8	0.9	5.6	1.7	0.1	13.3	10.3	4.8
Delay (s)	36.1	23.1	22.2	45.9	37.6	36.8	48.9	23.5	9.4	44.6	27.4	45.9
Level of Service	D	C	C	D	D	D	D	C	A	D	C	D
Approach Delay (s)		31.2			38.9			25.1			33.4	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #1 Weber/Herndon
******************************************************************************
Average Delay (sec/veh):      0.6       Worst Case Level Of Service: D[ 26.7]
******************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  1! 0  0    0  1  2  0  1    0  1  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0   101     0    0     0     0 2145   167    16 1726     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0   101     0    0     0     0 2145   167    16 1726     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0   110     0    0     0     0 2332   182    17 1876     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0   110     0    0     0     0 2332   182    17 1876     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9   7.5  6.5   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3   3.5  4.0   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   777  2688 4424   469  xxxx xxxx xxxxx  2513 xxxx xxxxx
Potent Cap.: xxxx xxxx   344    11    2   546  xxxx xxxx xxxxx   183 xxxx xxxxx
Move Cap.:   xxxx xxxx   344     7    1   546  xxxx xxxx xxxxx   183 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.32  0.00 0.00  0.00  xxxx xxxx  xxxx  0.10 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   1.3  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.3 xxxx xxxxx
Control Del:xxxxx xxxx  20.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  26.7 xxxx xxxxx
LOS by Move:    *    *     C     *    *     *     *    *     *     D    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx   0.3 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.2 xxxx xxxxx  26.7 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     A    *     *     D    *     *
ApproachDel:      20.3           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         C                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	237	1138	419	239	790	188	386	106	231	224	102	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	258	1237	455	260	859	204	420	115	251	243	111	277
RTOR Reduction (vph)	0	0	154	0	0	143	0	0	180	0	0	239
Lane Group Flow (vph)	258	1237	301	260	859	61	420	115	71	243	111	38
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.5	26.9	51.1	10.5	26.9	26.9	24.2	25.6	25.6	11.0	12.4	12.4
Effective Green, g (s)	10.5	26.9	51.1	10.5	26.9	26.9	24.2	25.6	25.6	11.0	12.4	12.4
Actuated g/C Ratio	0.12	0.30	0.57	0.12	0.30	0.30	0.27	0.28	0.28	0.12	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	401	1520	969	401	1520	473	923	1007	450	420	257	218
v/s Ratio Prot	0.08	c0.24	0.08	0.08	c0.17		c0.12	0.03		c0.07	c0.06	
v/s Ratio Perm			0.11			0.04			0.05			0.02
v/c Ratio	0.64	0.81	0.31	0.65	0.57	0.13	0.46	0.11	0.16	0.58	0.43	0.18
Uniform Delay, d1	38.0	29.2	10.2	38.0	26.6	23.0	27.4	23.8	24.1	37.3	35.6	34.3
Progression Factor	0.85	0.55	0.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	2.4	0.1	3.6	0.5	0.1	1.6	0.2	0.8	1.9	1.2	0.4
Delay (s)	34.5	18.5	0.6	41.6	27.1	23.1	29.0	24.0	24.9	39.2	36.7	34.7
Level of Service	C	B	A	D	C	C	C	C	C	D	D	C
Approach Delay (s)		16.4			29.3			27.0			36.8	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM Average Control Delay	24.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	132	1222	24	79	963	10	14	26	80	6	12	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3433	3539	1583	3433	1651		3433	1637	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3433	3539	1583	3433	1651		3433	1637	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	143	1328	26	86	1047	11	15	28	87	7	13	55
RTOR Reduction (vph)	0	0	15	0	0	7	0	64	0	0	41	0
Lane Group Flow (vph)	143	1328	11	86	1047	4	15	51	0	7	27	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	7.0	25.0	25.0	3.9	21.9	21.9	0.7	16.1		0.7	16.1	
Effective Green, g (s)	7.0	25.0	25.0	3.9	21.9	21.9	0.7	16.1		0.7	16.1	
Actuated g/C Ratio	0.11	0.41	0.41	0.06	0.35	0.35	0.01	0.26		0.01	0.26	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	201	2060	641	217	1256	562	39	431		39	427	
v/s Ratio Prot	c0.08	c0.26		0.03	c0.30		c0.00	c0.03		0.00	0.02	
v/s Ratio Perm			0.01			0.00						
v/c Ratio	0.71	0.64	0.02	0.40	0.83	0.01	0.38	0.12		0.18	0.06	
Uniform Delay, d1	26.4	14.8	11.0	27.8	18.2	12.9	30.3	17.4		30.2	17.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	11.3	0.7	0.0	1.2	4.9	0.0	6.2	0.6		2.2	0.3	
Delay (s)	37.6	15.5	11.0	29.0	23.1	12.9	36.5	17.9		32.4	17.4	
Level of Service	D	B	B	C	C	B	D	B		C	B	
Approach Delay (s)		17.5			23.5			20.1			18.8	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	1560	164	377	1429	202	88	83	261	207	80	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1651		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1651		3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	1696	178	410	1553	220	96	90	284	225	87	29
RTOR Reduction (vph)	0	0	85	0	0	48	0	107	0	0	0	23
Lane Group Flow (vph)	10	1696	93	410	1553	172	96	267	0	225	87	6
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	45.2	45.2	10.0	54.4	54.4	4.0	16.8		6.0	18.8	18.8
Effective Green, g (s)	0.8	45.2	45.2	10.0	54.4	54.4	4.0	16.8		6.0	18.8	18.8
Actuated g/C Ratio	0.01	0.48	0.48	0.11	0.58	0.58	0.04	0.18		0.06	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	29	1702	761	365	2048	916	146	295		219	373	317
v/s Ratio Prot	0.00	c0.48		c0.12	0.44		0.03	c0.16		c0.07	0.05	
v/s Ratio Perm			0.06			0.11						0.00
v/c Ratio	0.34	1.00	0.12	1.12	0.76	0.19	0.66	0.91		1.03	0.23	0.02
Uniform Delay, d1	46.3	24.3	13.5	42.0	14.9	9.4	44.3	37.8		44.0	31.6	30.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.0	20.8	0.1	84.9	1.7	0.1	10.2	33.0		68.1	1.5	0.1
Delay (s)	53.4	45.1	13.5	126.9	16.5	9.5	54.5	70.8		112.1	33.0	30.3
Level of Service	D	D	B	F	B	A	D	E		F	C	C
Approach Delay (s)		42.2			36.5			67.5			85.0	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM Average Control Delay	45.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	94.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	473	1383	169	103	1476	523	184	549	65	571	487	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	514	1503	184	112	1604	568	200	597	71	621	529	379
RTOR Reduction (vph)	0	0	83	0	0	241	0	0	46	0	0	163
Lane Group Flow (vph)	514	1503	101	112	1604	327	200	597	25	621	529	216
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.0	37.0	37.0	4.8	28.8	28.8	7.0	17.0	17.0	16.0	26.0	26.0
Effective Green, g (s)	13.0	37.0	37.0	4.8	28.8	28.8	7.0	17.0	17.0	16.0	26.0	26.0
Actuated g/C Ratio	0.14	0.41	0.41	0.05	0.32	0.32	0.08	0.19	0.19	0.18	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	492	2072	645	181	1613	502	265	663	296	605	1013	453
v/s Ratio Prot	c0.15	0.30		0.03	c0.32		0.06	c0.17		c0.18	0.15	
v/s Ratio Perm			0.06			0.21			0.02			0.14
v/c Ratio	1.04	0.73	0.16	0.62	0.99	0.65	0.75	0.90	0.09	1.03	0.52	0.48
Uniform Delay, d1	38.9	22.6	17.0	42.1	30.9	26.7	41.1	36.1	30.5	37.4	27.2	26.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	52.7	1.3	0.1	6.2	20.9	3.0	11.5	17.6	0.6	43.5	1.9	3.6
Delay (s)	91.6	23.9	17.1	48.3	51.9	29.7	52.6	53.7	31.1	80.9	29.1	30.3
Level of Service	F	C	B	D	D	C	D	D	C	F	C	C
Approach Delay (s)		39.2			46.2			51.6			50.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	45.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	90.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	2009	1	4	2095	66	2	0	4	66	1	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.76	1.00		0.76	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	2736	3008		2728	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	2184	1	4	2277	72	2	0	4	72	1	14
RTOR Reduction (vph)	0	0	0	0	0	26	0	3	0	0	0	12
Lane Group Flow (vph)	3	2184	1	4	2277	46	2	1	0	72	1	2
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		6
Actuated Green, G (s)	0.7	28.0	28.0	0.7	28.0	28.0	6.6	6.6		6.6	6.6	6.6
Effective Green, g (s)	0.7	28.0	28.0	0.7	28.0	28.0	6.6	6.6		6.6	6.6	6.6
Actuated g/C Ratio	0.01	0.59	0.59	0.01	0.59	0.59	0.14	0.14		0.14	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	51	3010	937	51	3010	937	382	420		381	260	221
v/s Ratio Prot	0.00	0.43		c0.00	c0.45			0.00			0.00	
v/s Ratio Perm			0.00			0.03	0.00			c0.03		0.00
v/c Ratio	0.06	0.73	0.00	0.08	0.76	0.05	0.01	0.00		0.19	0.00	0.01
Uniform Delay, d1	23.0	6.9	3.9	23.0	7.1	4.1	17.5	17.5		18.0	17.5	17.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	0.9	0.0	0.7	1.1	0.0	0.0	0.0		0.2	0.0	0.0
Delay (s)	23.5	7.8	3.9	23.6	8.3	4.1	17.5	17.5		18.2	17.5	17.5
Level of Service	C	A	A	C	A	A	B	B		B	B	B
Approach Delay (s)		7.8			8.2			17.5			18.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	47.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	1671	375	484	1835	63	351	96	414	28	85	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3442		1770	3522		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.68	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	1770	3442		1770	3522		1262	1863	1583	1220	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	1816	408	526	1995	68	382	104	450	30	92	72
RTOR Reduction (vph)	0	16	0	0	2	0	0	0	224	0	0	54
Lane Group Flow (vph)	68	2208	0	526	2061	0	382	104	227	30	92	18
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	5.0	54.0		24.0	73.0		30.0	30.0	30.0	30.0	30.0	30.0
Effective Green, g (s)	5.0	54.0		24.0	73.0		30.0	30.0	30.0	30.0	30.0	30.0
Actuated g/C Ratio	0.04	0.45		0.20	0.61		0.25	0.25	0.25	0.25	0.25	0.25
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	74	1549		354	2143		316	466	396	305	466	396
v/s Ratio Prot	0.04	c0.64		c0.30	0.59			0.06			0.05	
v/s Ratio Perm							c0.30		0.14	0.02		0.01
v/c Ratio	0.92	1.43		1.49	0.96		1.21	0.22	0.57	0.10	0.20	0.05
Uniform Delay, d1	57.3	33.0		48.0	22.2		45.0	35.7	39.4	34.6	35.5	34.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	76.3	195.3		233.2	11.7		119.8	1.1	5.9	0.6	0.9	0.2
Delay (s)	133.6	228.3		281.2	33.9		164.8	36.9	45.3	35.2	36.4	34.4
Level of Service	F	F		F	C		F	D	D	D	D	C
Approach Delay (s)		225.5			84.2			93.1			35.5	
Approach LOS		F			F			F			D	

Intersection Summary			
HCM Average Control Delay	137.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	121.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	228	1921	146	332	2182	390	195	247	254	278	232	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	248	2088	159	361	2372	424	212	268	276	302	252	379
RTOR Reduction (vph)	0	0	13	0	0	88	0	0	87	0	0	83
Lane Group Flow (vph)	248	2088	146	361	2372	336	212	268	189	302	252	297
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	65.0	65.0	11.0	69.0	69.0	7.0	18.0	18.0	10.0	21.0	21.0
Effective Green, g (s)	7.0	65.0	65.0	11.0	69.0	69.0	7.0	18.0	18.0	10.0	21.0	21.0
Actuated g/C Ratio	0.06	0.54	0.54	0.09	0.57	0.57	0.06	0.15	0.15	0.08	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	200	1917	857	315	2035	910	200	531	237	286	619	277
v/s Ratio Prot	0.07	0.59		c0.11	c0.67		0.06	0.08		c0.09	0.07	
v/s Ratio Perm			0.09			0.21			0.12			c0.19
v/c Ratio	1.24	1.09	0.17	1.15	1.17	0.37	1.06	0.50	0.80	1.06	0.41	1.07
Uniform Delay, d1	56.5	27.5	13.9	54.5	25.5	13.8	56.5	46.9	49.3	55.0	44.0	49.5
Progression Factor	1.00	1.00	1.00	0.76	1.17	2.13	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	143.1	49.4	0.1	69.5	75.1	0.0	80.4	3.4	23.9	68.7	2.0	74.0
Delay (s)	199.6	76.9	14.0	111.1	105.0	29.4	136.9	50.3	73.1	123.7	46.0	123.5
Level of Service	F	E	B	F	F	C	F	D	E	F	D	F
Approach Delay (s)		85.1			95.5			82.9			102.6	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	91.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	2202	180	303	2828	308	183	144	464	214	152	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	2393	196	329	3074	335	199	157	504	233	165	177
RTOR Reduction (vph)	0	0	60	0	0	59	0	0	93	0	0	56
Lane Group Flow (vph)	111	2393	136	329	3074	276	199	157	411	233	165	121
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	55.0	55.0	11.0	62.0	62.0	11.1	24.0	24.0	14.0	26.9	26.9
Effective Green, g (s)	4.0	55.0	55.0	11.0	62.0	62.0	11.1	24.0	24.0	14.0	26.9	26.9
Actuated g/C Ratio	0.03	0.46	0.46	0.09	0.52	0.52	0.09	0.20	0.20	0.12	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2331	726	315	2627	818	318	708	317	207	1140	355
v/s Ratio Prot	0.03	0.47		c0.10	c0.60		0.06	0.04		c0.13	0.03	
v/s Ratio Perm			0.09			0.17			c0.26			c0.08
v/c Ratio	0.97	1.03	0.19	1.04	1.17	0.34	0.63	0.22	1.30	1.13	0.14	0.34
Uniform Delay, d1	57.9	32.5	19.3	54.5	29.0	17.0	52.4	40.2	48.0	53.0	37.3	39.1
Progression Factor	1.22	0.64	0.43	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.1	14.2	0.0	62.8	81.0	0.2	3.8	0.7	155.1	100.4	0.3	2.6
Delay (s)	89.8	35.1	8.3	117.3	110.0	17.2	56.3	40.9	203.1	153.4	37.6	41.7
Level of Service	F	D	A	F	F	B	E	D	F	F	D	D
Approach Delay (s)		35.4			102.3			139.5			85.8	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	82.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	963	1798	70	275	2191	217	176	889	184	309	833	1063
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1047	1954	76	299	2382	236	191	966	200	336	905	1155
RTOR Reduction (vph)	0	0	27	0	0	55	0	0	158	0	0	1
Lane Group Flow (vph)	1047	1954	49	299	2382	181	191	966	42	336	905	1154
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	30.0	59.2	59.2	12.8	42.0	42.0	6.0	23.0	23.0	9.0	26.0	56.0
Effective Green, g (s)	30.0	59.2	59.2	12.8	42.0	42.0	6.0	23.0	23.0	9.0	26.0	56.0
Actuated g/C Ratio	0.25	0.49	0.49	0.11	0.35	0.35	0.05	0.19	0.19	0.08	0.22	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	858	2509	781	366	1780	554	172	975	303	257	767	792
v/s Ratio Prot	0.30	0.38		0.09	c0.47		0.06	0.19		c0.10	0.26	c0.36
v/s Ratio Perm			0.03			0.11			0.03			0.36
v/c Ratio	1.22	0.78	0.06	0.82	1.34	0.33	1.11	0.99	0.14	1.31	1.18	1.46
Uniform Delay, d1	45.0	25.0	15.9	52.5	39.0	28.6	57.0	48.4	40.3	55.5	47.0	32.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	109.6	1.6	0.0	13.2	156.1	0.3	101.3	26.7	1.0	163.5	94.2	212.9
Delay (s)	154.6	26.6	15.9	65.6	195.1	29.0	158.3	75.1	41.2	219.0	141.2	244.9
Level of Service	F	C	B	E	F	C	F	E	D	F	F	F
Approach Delay (s)		69.9			168.4			81.8			202.1	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	133.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	123.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	256	1824	361	180	1617	261	221	624	97	287	807	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	278	1983	392	196	1758	284	240	678	105	312	877	530
RTOR Reduction (vph)	0	0	143	0	0	88	0	0	83	0	0	103
Lane Group Flow (vph)	278	1983	249	196	1758	196	240	678	22	312	877	427
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	37.0	37.0	6.0	35.0	35.0	7.0	18.9	18.9	12.1	24.0	24.0
Effective Green, g (s)	8.0	37.0	37.0	6.0	35.0	35.0	7.0	18.9	18.9	12.1	24.0	24.0
Actuated g/C Ratio	0.09	0.41	0.41	0.07	0.39	0.39	0.08	0.21	0.21	0.13	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	305	2091	651	229	1978	616	267	1068	332	462	1356	422
v/s Ratio Prot	c0.08	c0.39		0.06	0.35		c0.07	0.13		0.09	0.17	
v/s Ratio Perm			0.16			0.12			0.01			c0.27
v/c Ratio	0.91	0.95	0.38	0.86	0.89	0.32	0.90	0.63	0.07	0.68	0.65	1.01
Uniform Delay, d1	40.6	25.6	18.5	41.6	25.7	19.2	41.1	32.4	28.5	37.1	29.2	33.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.8	10.0	0.4	25.5	5.3	0.3	29.8	2.9	0.4	3.9	2.4	47.0
Delay (s)	70.4	35.6	18.9	67.0	31.0	19.5	71.0	35.3	28.9	41.0	31.6	80.0
Level of Service	E	D	B	E	C	B	E	D	C	D	C	F
Approach Delay (s)		36.8			32.7			43.0			48.2	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	39.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	737	702	0	0	566	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	801	763	0	0	615	67
RTOR Reduction (vph)	0	487	0	0	0	30
Lane Group Flow (vph)	801	276	0	0	615	37
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	32.6	32.6			49.4	49.4
Effective Green, g (s)	32.6	32.6			49.4	49.4
Actuated g/C Ratio	0.36	0.36			0.55	0.55
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1282	573			1884	869
v/s Ratio Prot	c0.23				c0.18	
v/s Ratio Perm		0.17				0.02
v/c Ratio	0.62	0.48			0.33	0.04
Uniform Delay, d1	23.7	22.2			11.2	9.4
Progression Factor	0.45	2.43			1.00	1.00
Incremental Delay, d2	0.6	0.4			0.5	0.1
Delay (s)	11.2	54.3			11.6	9.5
Level of Service	B	D			B	A
Approach Delay (s)	32.2			0.0	11.4	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	97	187	16	144	255	238	199	0	129	24	0	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3498		1770	3539	1583	1770		1583	1770		1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3498		1770	3539	1583	1770		1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	203	17	157	277	259	216	0	140	26	0	84
RTOR Reduction (vph)	0	8	0	0	0	145	0	0	111	0	0	66
Lane Group Flow (vph)	105	212	0	157	277	114	216	0	29	26	0	18
Turn Type	Prot			Prot		Perm	custom		custom	custom		custom
Protected Phases	5	2		1	6							
Permitted Phases						6	4		4	8		8
Actuated Green, G (s)	8.9	26.2		9.2	26.5	26.5	12.6		12.6	12.6		12.6
Effective Green, g (s)	8.9	26.2		9.2	26.5	26.5	12.6		12.6	12.6		12.6
Actuated g/C Ratio	0.15	0.44		0.15	0.44	0.44	0.21		0.21	0.21		0.21
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	263	1527		271	1563	699	372		332	372		332
v/s Ratio Prot	c0.06	0.06		c0.09	c0.08							
v/s Ratio Perm						0.07	c0.12		0.02	0.01		0.01
v/c Ratio	0.40	0.14		0.58	0.18	0.16	0.58		0.09	0.07		0.05
Uniform Delay, d1	23.1	10.1		23.6	10.1	10.1	21.3		19.1	19.0		18.9
Progression Factor	1.00	1.00		0.53	0.29	0.14	1.00		1.00	1.00		1.00
Incremental Delay, d2	1.0	0.2		2.9	0.2	0.5	2.3		0.1	0.1		0.1
Delay (s)	24.1	10.3		15.5	3.2	1.9	23.6		19.2	19.1		19.0
Level of Service	C	B		B	A	A	C		B	B		B
Approach Delay (s)		14.8			5.5			21.9			19.0	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	49	89	66	27	130	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	97	72	29	141	80

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	53	97	101	222
Volume Left (vph)	53	0	0	141
Volume Right (vph)	0	97	29	0
Hadj (s)	0.53	-0.67	-0.14	0.16
Departure Headway (s)	5.8	4.6	4.4	4.6
Degree Utilization, x	0.09	0.12	0.12	0.28
Capacity (veh/h)	589	736	777	758
Control Delay (s)	8.1	7.0	8.0	9.3
Approach Delay (s)	7.4		8.0	9.3
Approach LOS	A		A	A

Intersection Summary			
Delay	8.4		
HCM Level of Service	A		
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Polk/Sierra

Cycle (sec):	100	Critical Vol./Cap.(X):	0.591
Loss Time (sec):	0	Average Delay (sec/veh):	14.0
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk								Dante					
Approach:	North Bound			South Bound			East Bound			West Bound				
Movement:	L	T	R	L	T	R	L	T	R	L	T	R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign				
Rights:	Include			Include			Include			Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0		
Lanes:	1 0 0 1 0			1 0 1 0 1			1 0 0 1 0			1 0 1 0 1				
Volume Module:														
Base Vol:	53	276	25	97	299	52	35	51	12	12	66	79		
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Initial Bse:	53	276	25	97	299	52	35	51	12	12	66	79		
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
PHF Volume:	58	300	27	105	325	57	38	55	13	13	72	86		
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0		
Reduced Vol:	58	300	27	105	325	57	38	55	13	13	72	86		
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
FinalVolume:	58	300	27	105	325	57	38	55	13	13	72	86		
Saturation Flow Module:														
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Lanes:	1.00	0.92	0.08	1.00	1.00	1.00	1.00	0.81	0.19	1.00	1.00	1.00		
Final Sat.:	526	533	48	505	550	605	441	387	91	426	454	499		
Capacity Analysis Module:														
Vol/Sat:	0.11	0.56	0.56	0.21	0.59	0.09	0.09	0.14	0.14	0.03	0.16	0.17		
Crit Moves:			****		****				****			****		
Delay/Veh:	10.0	15.7	15.7	11.4	17.5	9.0	10.9	10.7	10.7	10.7	11.3	10.5		
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
AdjDel/Veh:	10.0	15.7	15.7	11.4	17.5	9.0	10.9	10.7	10.7	10.7	11.3	10.5		
LOS by Move:	B	C	C	B	C	A	B	B	B	B	B	B		
ApproachDel:	14.9			15.2			10.8			10.9				
Delay Adj:	1.00			1.00			1.00			1.00				
ApprAdjDel:	14.9			15.2			10.8			10.9				
LOS by Appr:	B			C			B			B				
AllWayAvgQ:	0.1	1.1	1.1	0.2	1.3	0.1	0.1	0.1	0.1	0.0	0.2	0.2		

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	52	3	3	14	5	78	7	383	0	68	499	45
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	57	3	3	15	5	85	8	416	0	74	542	49
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1026	1146	567	1127	1171	208	591			416		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1026	1146	567	1127	1171	208	591			416		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	64	98	99	90	97	89	99			94		
cM capacity (veh/h)	156	184	467	148	178	798	980			1139		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	57	3	3	15	5	85	8	208	208	0	74	591
Volume Left	57	0	0	15	0	0	8	0	0	0	74	0
Volume Right	0	0	3	0	0	85	0	0	0	0	0	49
cSH	156	184	467	148	178	798	980	1700	1700	1700	1139	1700
Volume to Capacity	0.36	0.02	0.01	0.10	0.03	0.11	0.01	0.12	0.12	0.00	0.06	0.35
Queue Length 95th (ft)	38	1	1	8	2	9	1	0	0	0	5	0
Control Delay (s)	40.6	25.0	12.8	32.2	25.9	10.0	8.7	0.0	0.0	0.0	8.4	0.0
Lane LOS	E	C	B	D	D	B	A				A	
Approach Delay (s)	38.4			14.1			0.2				0.9	
Approach LOS	E			B								

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	227	130	371	224	135	741
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	247	141	403	243	147	805

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	388	403	243	147	805
Volume Left (vph)	0	403	0	147	0
Volume Right (vph)	141	0	0	0	805
Hadj (s)	-0.18	0.53	0.03	0.53	-0.67
Departure Headway (s)	7.1	7.9	7.4	8.0	6.8
Degree Utilization, x	0.76	0.89	0.50	0.33	1.52
Capacity (veh/h)	501	448	480	443	534
Control Delay (s)	29.3	46.3	16.5	13.7	260.6
Approach Delay (s)	29.3	35.1		222.6	
Approach LOS	D	E		F	

Intersection Summary			
Delay	123.8		
HCM Level of Service	F		
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	148	168	15	8	207	656	21	27	9	337	20	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	161	183	16	9	225	713	23	29	10	366	22	124

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	252	108	234	713	62	512
Volume Left (vph)	161	0	9	0	23	366
Volume Right (vph)	0	16	0	713	10	124
Hadj (s)	0.35	-0.07	0.05	-0.67	0.01	0.03
Departure Headway (s)	8.3	7.9	7.6	6.9	8.6	6.9
Degree Utilization, x	0.58	0.24	0.50	1.37	0.15	0.98
Capacity (veh/h)	421	450	465	523	402	520
Control Delay (s)	21.0	12.1	16.7	196.3	13.1	59.7
Approach Delay (s)	18.4		152.0		13.1	59.7
Approach LOS	C		F		B	F

Intersection Summary			
Delay	96.7		
HCM Level of Service	F		
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.717
Loss Time (sec):	0	Average Delay (sec/veh):	19.0
Optimal Cycle:	0	Level Of Service:	C

Street Name:	Polk									Dante							
Approach:	North Bound			South Bound			East Bound			West Bound							
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign							
Rights:	Include			Include			Include			Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0					
Lanes:	1	0 1	0 1	1	0 1	0 1	1	0 2	0 1	1	0 2	0 1					
Volume Module:																	
Base Vol:	62	7	10	35	15	30	112	686	62	62	473	48					
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Initial Bse:	62	7	10	35	15	30	112	686	62	62	473	48					
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92					
PHF Volume:	67	8	11	38	16	33	122	746	67	67	514	52					
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0					
Reduced Vol:	67	8	11	38	16	33	122	746	67	67	514	52					
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
FinalVolume:	67	8	11	38	16	33	122	746	67	67	514	52					
Saturation Flow Module:																	
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00					
Final Sat.:	343	355	381	340	354	382	476	1040	563	443	961	519					
Capacity Analysis Module:																	
Vol/Sat:	0.20	0.02	0.03	0.11	0.05	0.09	0.26	0.72	0.12	0.15	0.54	0.10					
Crit Moves:	****			****				****			****						
Delay/Veh:	14.2	11.8	11.2	13.2	12.0	11.6	12.5	24.5	9.6	11.8	17.7	10.0					
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
AdjDel/Veh:	14.2	11.8	11.2	13.2	12.0	11.6	12.5	24.5	9.6	11.8	17.7	10.0					
LOS by Move:	B	B	B	B	B	B	B	C	A	B	C	A					
ApproachDel:	13.6			12.4			21.9			16.4							
Delay Adj:	1.00			1.00			1.00			1.00							
ApprAdjDel:	13.6			12.4			21.9			16.4							
LOS by Appr:	B			B			C			C							
AllWayAvgQ:	0.2	0.0	0.0	0.1	0.0	0.1	0.3	2.2	0.1	0.2	1.0	0.1					

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	192	734	80	165	901	72	196	839	160	83	829	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3500		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3500		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	209	798	87	179	979	78	213	912	174	90	901	130
RTOR Reduction (vph)	0	0	43	0	6	0	0	0	42	0	0	37
Lane Group Flow (vph)	209	798	44	179	1051	0	213	912	132	90	901	93
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	14.3	39.0	39.0	10.0	34.7		11.0	29.0	29.0	6.0	24.0	24.0
Effective Green, g (s)	14.3	39.0	39.0	10.0	34.7		11.0	29.0	29.0	6.0	24.0	24.0
Actuated g/C Ratio	0.14	0.39	0.39	0.10	0.35		0.11	0.29	0.29	0.06	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	253	727	617	177	1215		195	1026	459	106	849	380
v/s Ratio Prot	c0.12	c0.43		c0.10	0.30		c0.12	0.26		0.05	c0.25	
v/s Ratio Perm			0.03						0.08			0.06
v/c Ratio	0.83	1.10	0.07	1.01	0.87		1.09	0.89	0.29	0.85	1.06	0.24
Uniform Delay, d1	41.6	30.5	19.1	45.0	30.5		44.5	34.0	27.5	46.6	38.0	30.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.3	63.3	0.0	70.6	6.6		91.3	9.5	0.3	43.4	48.5	0.3
Delay (s)	60.9	93.8	19.2	115.6	37.1		135.8	43.5	27.8	89.9	86.5	31.0
Level of Service	E	F	B	F	D		F	D	C	F	F	C
Approach Delay (s)		81.6			48.5			56.5			80.3	
Approach LOS		F			D			E			F	

Intersection Summary			
HCM Average Control Delay	65.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	40	25	6	4	60	107	12	233	2	92	272	57
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	27	7	4	65	116	13	253	2	100	296	62
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	924	777	296	795	837	253	358			255		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	924	777	296	795	837	253	358			255		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	91	99	98	76	85	99			92		
cM capacity (veh/h)	163	300	744	263	277	785	1201			1310		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	77	186	266	2	396	62
Volume Left	43	4	13	0	100	0
Volume Right	7	116	0	2	0	62
cSH	211	464	1201	1700	1310	1700
Volume to Capacity	0.37	0.40	0.01	0.00	0.08	0.04
Queue Length 95th (ft)	40	47	1	0	6	0
Control Delay (s)	31.6	17.8	0.5	0.0	2.6	0.0
Lane LOS	D	C	A		A	
Approach Delay (s)	31.6	17.8	0.5		2.2	
Approach LOS	D	C				

Intersection Summary				
Average Delay	7.0			
Intersection Capacity Utilization	59.5%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	826	275	503	1478	113	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	898	299	547	1607	123	317
RTOR Reduction (vph)	0	110	0	0	0	275
Lane Group Flow (vph)	898	189	547	1607	123	42
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	56.0	56.0	36.0	96.0	16.0	16.0
Effective Green, g (s)	56.0	56.0	36.0	96.0	16.0	16.0
Actuated g/C Ratio	0.47	0.47	0.30	0.80	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	869	739	531	2831	236	211
v/s Ratio Prot	c0.48		c0.31	0.45	c0.07	
v/s Ratio Perm		0.12				0.03
v/c Ratio	1.03	0.26	1.03	0.57	0.52	0.20
Uniform Delay, d1	32.0	19.4	42.0	4.4	48.4	46.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.4	0.2	47.0	0.3	8.0	2.1
Delay (s)	71.4	19.6	89.0	4.7	56.4	48.4
Level of Service	E	B	F	A	E	D
Approach Delay (s)	58.5			26.1	50.7	
Approach LOS	E			C	D	

Intersection Summary			
HCM Average Control Delay	39.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (vph)	80	1084	1646	362	318	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	1178	1789	393	346	334
RTOR Reduction (vph)	0	0	0	170	0	110
Lane Group Flow (vph)	87	1178	1789	223	346	224
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	4.8	54.2	45.4	45.4	17.8	17.8
Effective Green, g (s)	4.8	54.2	45.4	45.4	17.8	17.8
Actuated g/C Ratio	0.06	0.68	0.57	0.57	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	106	1262	2008	898	394	352
v/s Ratio Prot	0.05	c0.63	0.51		c0.20	
v/s Ratio Perm				0.14		0.14
v/c Ratio	0.82	0.93	0.89	0.25	0.88	0.64
Uniform Delay, d1	37.2	11.3	15.1	8.7	30.1	28.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	37.7	12.5	5.4	0.1	23.2	8.5
Delay (s)	74.9	23.8	20.6	8.9	53.2	36.6
Level of Service	E	C	C	A	D	D
Approach Delay (s)		27.4	18.5		45.1	
Approach LOS		C	B		D	

Intersection Summary			
HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	44	1313	52	432	1752	285	216	313	44	46	622	892
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	1427	57	470	1904	310	235	340	48	50	676	970
RTOR Reduction (vph)	0	0	18	0	0	78	0	0	32	0	0	219
Lane Group Flow (vph)	48	1427	39	470	1904	232	235	340	16	50	676	751
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	3.2	35.8	35.8	21.0	53.6	53.6	11.0	40.9	40.9	6.3	36.2	36.2
Effective Green, g (s)	3.2	35.8	35.8	21.0	53.6	53.6	11.0	40.9	40.9	6.3	36.2	36.2
Actuated g/C Ratio	0.03	0.30	0.30	0.18	0.45	0.45	0.09	0.34	0.34	0.05	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	47	1056	472	310	1581	707	162	1206	540	93	1068	478
v/s Ratio Prot	0.03	c0.40		c0.27	0.54		c0.13	0.10		0.03	0.19	
v/s Ratio Perm			0.02			0.15			0.01			c0.47
v/c Ratio	1.02	1.35	0.08	1.52	1.20	0.33	1.45	0.28	0.03	0.54	0.63	1.57
Uniform Delay, d1	58.4	42.1	30.3	49.5	33.2	21.5	54.5	28.8	26.3	55.4	36.2	41.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	137.5	164.4	0.1	248.2	98.2	0.3	233.8	0.6	0.1	5.9	2.9	266.7
Delay (s)	195.9	206.5	30.4	297.7	131.4	21.8	288.3	29.4	26.4	61.3	39.0	308.6
Level of Service	F	F	C	F	F	C	F	C	C	E	D	F
Approach Delay (s)		199.6			147.9			126.8			193.9	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	169.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	113.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	291	1706	153	205	1814	247	277	804	151	457	450	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	316	1854	166	223	1972	268	301	874	164	497	489	185
RTOR Reduction (vph)	0	0	49	0	0	70	0	0	58	0	0	136
Lane Group Flow (vph)	316	1854	117	223	1972	198	301	874	106	497	489	49
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	43.0	43.0	8.0	41.0	41.0	13.8	27.0	27.0	16.0	29.2	29.2
Effective Green, g (s)	10.0	43.0	43.0	8.0	41.0	41.0	13.8	27.0	27.0	16.0	29.2	29.2
Actuated g/C Ratio	0.09	0.39	0.39	0.07	0.37	0.37	0.13	0.25	0.25	0.15	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	312	1988	619	250	1895	590	431	869	389	499	939	420
v/s Ratio Prot	0.09	c0.36		0.06	c0.39		0.09	c0.25		c0.14	0.14	
v/s Ratio Perm			0.07			0.12			0.07			0.03
v/c Ratio	1.01	0.93	0.19	0.89	1.04	0.34	0.70	1.01	0.27	1.00	0.52	0.12
Uniform Delay, d1	50.0	32.1	22.0	50.6	34.5	24.7	46.1	41.5	33.6	47.0	34.4	30.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	54.2	8.7	0.1	30.2	32.1	0.3	4.9	31.9	1.7	39.0	2.1	0.6
Delay (s)	104.2	40.8	22.2	80.8	66.6	25.1	51.0	73.4	35.3	86.0	36.5	31.2
Level of Service	F	D	C	F	E	C	D	E	D	F	D	C
Approach Delay (s)		48.0			63.4			63.7			56.7	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	57.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	575	1515	222	310	1539	170	432	666	189	221	446	423
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	625	1647	241	337	1673	185	470	724	205	240	485	460
RTOR Reduction (vph)	0	0	102	0	0	87	0	0	112	0	0	218
Lane Group Flow (vph)	625	1647	139	337	1673	98	470	724	93	240	485	242
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.0	34.1	34.1	10.9	29.0	29.0	12.0	22.0	22.0	7.0	17.0	17.0
Effective Green, g (s)	16.0	34.1	34.1	10.9	29.0	29.0	12.0	22.0	22.0	7.0	17.0	17.0
Actuated g/C Ratio	0.18	0.38	0.38	0.12	0.32	0.32	0.13	0.24	0.24	0.08	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	610	1927	600	416	1639	510	458	865	387	267	668	299
v/s Ratio Prot	c0.18	0.32		0.10	c0.33		c0.14	c0.20		0.07	0.14	
v/s Ratio Perm			0.09			0.06			0.06			0.15
v/c Ratio	1.02	0.85	0.23	0.81	1.02	0.19	1.03	0.84	0.24	0.90	0.73	0.81
Uniform Delay, d1	37.0	25.7	19.0	38.5	30.5	22.0	39.0	32.3	27.3	41.1	34.3	34.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	42.8	3.9	0.2	11.3	27.6	0.2	48.9	9.5	1.5	29.8	6.8	20.5
Delay (s)	79.8	29.6	19.2	49.9	58.1	22.2	87.9	41.8	28.8	71.0	41.1	55.5
Level of Service	E	C	B	D	E	C	F	D	C	E	D	E
Approach Delay (s)		41.1			53.8			55.4			52.7	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	49.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	222	1450	127	267	1587	114	238	356	130	134	489	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	241	1576	138	290	1725	124	259	387	141	146	532	191
RTOR Reduction (vph)	0	0	83	0	0	56	0	0	107	0	0	131
Lane Group Flow (vph)	241	1576	55	290	1725	68	259	387	34	146	532	60
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	26.0	26.0	8.0	28.0	28.0	7.0	18.1	18.1	6.9	18.0	18.0
Effective Green, g (s)	6.0	26.0	26.0	8.0	28.0	28.0	7.0	18.1	18.1	6.9	18.0	18.0
Actuated g/C Ratio	0.08	0.35	0.35	0.11	0.37	0.37	0.09	0.24	0.24	0.09	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	275	1763	549	366	1898	591	320	854	382	316	849	380
v/s Ratio Prot	0.07	0.31		c0.08	c0.34		c0.08	0.11		0.04	c0.15	
v/s Ratio Perm			0.03			0.04			0.02			0.04
v/c Ratio	0.88	0.89	0.10	0.79	0.91	0.11	0.81	0.45	0.09	0.46	0.63	0.16
Uniform Delay, d1	34.1	23.2	16.6	32.7	22.3	15.4	33.3	24.2	22.1	32.3	25.5	22.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.3	6.3	0.1	11.2	6.8	0.1	14.0	1.7	0.5	1.1	3.5	0.9
Delay (s)	59.4	29.5	16.7	43.9	29.1	15.5	47.3	26.0	22.5	33.4	29.0	23.4
Level of Service	E	C	B	D	C	B	D	C	C	C	C	C
Approach Delay (s)		32.2			30.3			32.4			28.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1051	65	382	1206	0	51	0	508	153	120	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.93	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3302	
Flt Permitted		1.00	1.00	0.95	1.00		0.60		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1114		1583	1770	3302	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1142	71	415	1311	0	55	0	552	166	130	105
RTOR Reduction (vph)	0	0	28	0	0	0	0	0	371	0	62	0
Lane Group Flow (vph)	0	1142	43	415	1311	0	55	0	181	166	173	0
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		25.8	25.8	19.3	49.1		17.0		17.0	17.0	17.0	
Effective Green, g (s)		25.8	25.8	19.3	49.1		17.0		17.0	17.0	17.0	
Actuated g/C Ratio		0.35	0.35	0.26	0.66		0.23		0.23	0.23	0.23	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1232	551	461	2345		256		363	406	758	
v/s Ratio Prot		c0.32		c0.23	0.37						0.05	
v/s Ratio Perm			0.03				0.05		c0.11	0.09		
v/c Ratio		0.93	0.08	0.90	0.56		0.21		0.50	0.41	0.23	
Uniform Delay, d1		23.2	16.2	26.5	6.7		23.1		24.8	24.3	23.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		11.9	0.1	20.4	0.3		0.4		1.1	3.0	0.7	
Delay (s)		35.1	16.2	46.8	7.0		23.6		25.9	27.3	23.9	
Level of Service		D	B	D	A		C		C	C	C	
Approach Delay (s)		34.0			16.6			25.7			25.3	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	243	1115	0	0	923	698	589	21	841	200	0	375
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1485	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.45		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1485	1504	1623		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	264	1212	0	0	1003	759	640	23	914	217	0	408
RTOR Reduction (vph)	0	0	0	0	0	190	0	37	37	0	0	200
Lane Group Flow (vph)	264	1212	0	0	1003	569	544	484	475	217	0	208
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	16.0	55.0			35.0	35.0	37.0	37.0	37.0	16.0		16.0
Effective Green, g (s)	16.0	55.0			35.0	35.0	37.0	37.0	37.0	16.0		16.0
Actuated g/C Ratio	0.13	0.46			0.29	0.29	0.31	0.31	0.31	0.13		0.13
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	236	1622			1032	462	518	458	464	216		211
v/s Ratio Prot	c0.15	0.34			0.28		0.32	c0.33				
v/s Ratio Perm						c0.36			0.32	c0.13		0.13
v/c Ratio	1.12	0.75			0.97	1.23	1.05	1.06	1.02	1.00		0.98
Uniform Delay, d1	52.0	26.8			42.0	42.5	41.5	41.5	41.5	52.0		51.9
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	94.2	1.9			21.4	122.1	53.4	57.6	47.7	62.4		58.2
Delay (s)	146.2	28.7			63.4	164.6	94.9	99.1	89.2	114.4		110.0
Level of Service	F	C			E	F	F	F	F	F		F
Approach Delay (s)		49.7			107.0			94.4			111.6	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	88.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Queuing

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (vph)	105	32	12	524	1133	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1794	1863	1583	3433	1583
Flt Permitted		0.79	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1474	1863	1583	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	35	13	570	1232	168
RTOR Reduction (vph)	0	0	0	318	0	64
Lane Group Flow (vph)	0	149	13	252	1232	104
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)		35.3	35.3	35.3	36.7	36.7
Effective Green, g (s)		35.3	35.3	35.3	36.7	36.7
Actuated g/C Ratio		0.44	0.44	0.44	0.46	0.46
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		650	822	698	1575	726
v/s Ratio Prot			0.01			
v/s Ratio Perm		0.10		c0.16	c0.36	0.07
v/c Ratio		0.23	0.02	0.36	0.78	0.14
Uniform Delay, d1		13.9	12.6	14.8	18.3	12.5
Progression Factor		1.00	1.62	8.24	0.74	0.41
Incremental Delay, d2		0.8	0.0	1.4	0.2	0.0
Delay (s)		14.7	20.5	123.7	13.8	5.1
Level of Service		B	C	F	B	A
Approach Delay (s)		14.7	121.4		12.8	
Approach LOS		B	F		B	

Intersection Summary			
HCM Average Control Delay	42.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	55	767	628	0	0	1354
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	834	683	0	0	1472
RTOR Reduction (vph)	0	447	0	0	0	0
Lane Group Flow (vph)	60	387	683	0	0	1472
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	13.9	13.9	58.1			58.1
Effective Green, g (s)	13.9	13.9	58.1			58.1
Actuated g/C Ratio	0.17	0.17	0.73			0.73
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	308	484	1353			1353
v/s Ratio Prot	0.03		0.37			c0.79
v/s Ratio Perm		c0.14				
v/c Ratio	0.19	0.80	0.50			1.09
Uniform Delay, d1	28.3	31.7	4.7			10.9
Progression Factor	1.00	1.00	0.66			1.36
Incremental Delay, d2	1.4	13.0	0.3			49.2
Delay (s)	29.7	44.7	3.4			64.1
Level of Service	C	D	A			E
Approach Delay (s)	43.7		3.4			64.1
Approach LOS	D		A			E

Intersection Summary			
HCM Average Control Delay	44.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	398	115	285	62	200	66	190	1123	64	117	1027	623
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	433	125	310	67	217	72	207	1221	70	127	1116	677
RTOR Reduction (vph)	0	0	143	0	0	62	0	0	45	0	0	472
Lane Group Flow (vph)	433	125	167	67	217	10	207	1221	25	127	1116	206
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			
Actuated Green, G (s)	14.4	22.2	22.2	3.2	11.0	11.0	6.0	28.1	28.1	10.5	32.6	14.4
Effective Green, g (s)	14.4	22.2	22.2	3.2	11.0	11.0	6.0	28.1	28.1	10.5	32.6	14.4
Actuated g/C Ratio	0.18	0.28	0.28	0.04	0.14	0.14	0.08	0.35	0.35	0.13	0.41	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	618	982	439	137	487	218	257	1786	556	232	1442	285
v/s Ratio Prot	0.13	0.04		0.02	0.06		0.06	c0.24		0.07	c0.32	c0.13
v/s Ratio Perm			c0.11			0.01			0.02			
v/c Ratio	0.70	0.13	0.38	0.49	0.45	0.05	0.81	0.68	0.04	0.55	0.77	0.72
Uniform Delay, d1	30.8	21.6	23.3	37.6	31.7	29.9	36.4	22.2	17.1	32.5	20.5	30.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.92	0.91	1.00	1.00	1.00
Incremental Delay, d2	3.6	0.1	0.6	2.7	0.7	0.1	12.3	1.5	0.1	2.6	4.1	8.7
Delay (s)	34.4	21.7	23.9	40.3	32.4	30.0	46.6	21.9	15.6	35.2	24.6	39.6
Level of Service	C	C	C	D	C	C	D	C	B	D	C	D
Approach Delay (s)		28.8			33.4			25.0			30.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #1 Weber/Herndon
*******************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: B[ 13.3]
*******************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  1! 0  0    0  1  2  0  1    0  1  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    15     0    0     0     0 1277   125     7 1741     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0    15     0    0     0     0 1277   125     7 1741     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    16     0    0     0     0 1388   136     8 1892     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    16     0    0     0     0 1388   136     8 1892     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9   7.5  6.5   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3   3.5  4.0   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   463  2370 3432   473  xxxx xxxx xxxxx  1524 xxxx xxxxx
Potent Cap.: xxxx xxxx   551    19    7   543  xxxx xxxx xxxxx   443 xxxx xxxxx
Move Cap.:   xxxx xxxx   551    18    7   543  xxxx xxxx xxxxx   443 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.03  0.00 0.00  0.00  xxxx xxxx  xxxx  0.02 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.1  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx  11.7 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  13.3 xxxx xxxxx
LOS by Move:    *    *     B     *    *     *     *    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx   0.1 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.2 xxxx xxxxx  13.3 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     A    *     *     B    *     *
ApproachDel:      11.7           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	278	584	373	59	1037	223	390	29	225	206	40	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	3539	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	3539	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	302	635	405	64	1127	242	424	32	245	224	43	276
RTOR Reduction (vph)	0	0	146	0	0	140	0	0	143	0	0	188
Lane Group Flow (vph)	302	635	259	64	1127	102	424	32	102	224	43	88
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.8	29.6	51.5	3.2	25.0	25.0	21.9	23.0	23.0	8.7	9.8	9.8
Effective Green, g (s)	7.8	29.6	51.5	3.2	25.0	25.0	21.9	23.0	23.0	8.7	9.8	9.8
Actuated g/C Ratio	0.10	0.37	0.64	0.04	0.31	0.31	0.27	0.29	0.29	0.11	0.12	0.12
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	333	1870	1013	136	1099	492	934	532	452	371	227	193
v/s Ratio Prot	c0.09	0.12	0.07	0.02	c0.32		c0.12	0.02		c0.07	0.02	
v/s Ratio Perm			0.09			0.06			0.06			c0.06
v/c Ratio	0.91	0.34	0.26	0.47	1.03	0.21	0.45	0.06	0.23	0.60	0.19	0.46
Uniform Delay, d1	36.0	18.4	6.2	37.8	27.8	20.4	24.3	20.9	22.0	34.3	31.8	32.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.9	0.1	0.1	2.6	33.8	0.2	1.6	0.2	1.2	2.8	0.4	1.7
Delay (s)	62.9	18.5	6.4	40.4	61.6	20.7	25.9	21.1	23.1	37.0	32.2	34.6
Level of Service	E	B	A	D	E	C	C	C	C	D	C	C
Approach Delay (s)		24.8			53.7			24.7			35.4	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM Average Control Delay	36.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	717	8	162	1023	6	41	32	113	6	129	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1645		3433	1715	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	1645		3433	1715	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	779	9	176	1112	7	45	35	123	7	140	158
RTOR Reduction (vph)	0	0	6	0	0	5	0	82	0	0	64	0
Lane Group Flow (vph)	75	779	3	176	1112	2	45	76	0	7	234	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	3.0	18.8	18.8	3.8	19.6	19.6	2.2	19.3		0.7	17.8	
Effective Green, g (s)	3.0	18.8	18.8	3.8	19.6	19.6	2.2	19.3		0.7	17.8	
Actuated g/C Ratio	0.05	0.32	0.32	0.06	0.33	0.33	0.04	0.33		0.01	0.30	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	91	1135	508	223	1184	529	129	542		41	521	
v/s Ratio Prot	0.04	0.22		c0.05	c0.31		c0.01	0.05		0.00	c0.14	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.82	0.69	0.01	0.79	0.94	0.00	0.35	0.14		0.17	0.45	
Uniform Delay, d1	27.5	17.3	13.5	27.0	18.9	13.0	27.5	13.8		28.7	16.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	42.8	1.7	0.0	16.7	13.8	0.0	1.6	0.5		2.0	2.8	
Delay (s)	70.4	19.1	13.5	43.8	32.8	13.0	29.1	14.3		30.6	19.2	
Level of Service	E	B	B	D	C	B	C	B		C	B	
Approach Delay (s)		23.5			34.2			17.6			19.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	27.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1191	103	108	1319	99	135	31	309	171	67	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1609		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1609		3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	1295	112	117	1434	108	147	34	336	186	73	29
RTOR Reduction (vph)	0	0	63	0	0	33	0	100	0	0	0	22
Lane Group Flow (vph)	8	1295	49	117	1434	75	147	270	0	186	73	7
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	31.5	31.5	3.1	33.8	33.8	4.0	17.0		4.0	17.0	17.0
Effective Green, g (s)	0.8	31.5	31.5	3.1	33.8	33.8	4.0	17.0		4.0	17.0	17.0
Actuated g/C Ratio	0.01	0.44	0.44	0.04	0.47	0.47	0.06	0.24		0.06	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	38	1557	696	149	1671	747	192	382		192	442	376
v/s Ratio Prot	0.00	0.37		c0.03	c0.41		0.04	c0.17		c0.05	0.04	
v/s Ratio Perm			0.03			0.05						0.00
v/c Ratio	0.21	0.83	0.07	0.79	0.86	0.10	0.77	0.71		0.97	0.17	0.02
Uniform Delay, d1	35.1	17.7	11.6	33.9	16.8	10.5	33.3	25.0		33.7	21.7	20.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.8	4.0	0.0	23.2	4.6	0.1	16.5	10.5		55.2	0.8	0.1
Delay (s)	37.8	21.7	11.6	57.1	21.4	10.5	49.9	35.6		89.0	22.5	21.0
Level of Service	D	C	B	E	C	B	D	D		F	C	C
Approach Delay (s)		21.0			23.2			39.6			65.3	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	71.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	1256	172	90	1088	264	153	286	147	488	397	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	1365	187	98	1183	287	166	311	160	530	432	303
RTOR Reduction (vph)	0	0	128	0	0	214	0	0	121	0	0	139
Lane Group Flow (vph)	283	1365	59	98	1183	73	166	311	39	530	432	164
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	19.6	19.6	3.2	16.8	16.8	6.8	16.0	16.0	11.0	20.2	20.2
Effective Green, g (s)	6.0	19.6	19.6	3.2	16.8	16.8	6.8	16.0	16.0	11.0	20.2	20.2
Actuated g/C Ratio	0.09	0.30	0.30	0.05	0.26	0.26	0.10	0.24	0.24	0.17	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	313	1515	472	167	1298	404	355	861	385	574	1086	486
v/s Ratio Prot	c0.08	c0.27		0.03	0.23		0.05	0.09		c0.15	c0.12	
v/s Ratio Perm			0.04			0.05			0.02			0.10
v/c Ratio	0.90	0.90	0.12	0.59	0.91	0.18	0.47	0.36	0.10	0.92	0.40	0.34
Uniform Delay, d1	29.6	22.2	16.8	30.7	23.8	19.1	27.8	20.7	19.3	27.0	18.0	17.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.7	7.7	0.1	5.2	9.8	0.2	1.0	1.2	0.5	20.6	1.1	1.9
Delay (s)	57.4	29.9	17.0	35.8	33.6	19.3	28.8	21.8	19.8	47.6	19.1	19.5
Level of Service	E	C	B	D	C	B	C	C	B	D	B	B
Approach Delay (s)		32.8			31.1			23.1			31.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1899	1	2	1444	56	0	1	0	56	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.76		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		3539		2736		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	2064	1	2	1570	61	0	1	0	61	0	1
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0	0	1
Lane Group Flow (vph)	1	2064	1	2	1570	35	0	1	0	61	0	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		6
Actuated Green, G (s)	0.7	26.4	26.4	0.7	26.4	26.4		6.5		6.5		6.5
Effective Green, g (s)	0.7	26.4	26.4	0.7	26.4	26.4		6.5		6.5		6.5
Actuated g/C Ratio	0.02	0.58	0.58	0.02	0.58	0.58		0.14		0.14		0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	53	2944	916	53	2944	916		504		390		226
v/s Ratio Prot	0.00	c0.41		c0.00	0.31			0.00				
v/s Ratio Perm			0.00			0.02				c0.02		0.00
v/c Ratio	0.02	0.70	0.00	0.04	0.53	0.04		0.00		0.16		0.00
Uniform Delay, d1	22.1	6.8	4.0	22.1	5.8	4.1		16.8		17.1		16.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2	0.1	0.8	0.0	0.3	0.2	0.0		0.0		0.2		0.0
Delay (s)	22.3	7.6	4.0	22.4	6.0	4.2		16.8		17.3		16.8
Level of Service	C	A	A	C	A	A		B		B		B
Approach Delay (s)		7.6			6.0			16.8			17.3	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	45.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	1696	204	370	1246	25	169	98	421	66	94	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3482		3433	3529		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.66	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	1770	3482		3433	3529		1232	1863	1583	1211	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	1843	222	402	1354	27	184	107	458	72	102	51
RTOR Reduction (vph)	0	9	0	0	1	0	0	0	140	0	0	41
Lane Group Flow (vph)	83	2056	0	402	1380	0	184	107	318	72	102	10
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	7.7	56.8		12.0	61.1		20.0	20.0	20.0	20.0	20.0	20.0
Effective Green, g (s)	7.7	56.8		12.0	61.1		20.0	20.0	20.0	20.0	20.0	20.0
Actuated g/C Ratio	0.08	0.56		0.12	0.61		0.20	0.20	0.20	0.20	0.20	0.20
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	135	1962		409	2139		244	370	314	240	370	314
v/s Ratio Prot	0.05	c0.59		c0.12	0.39			0.06			0.05	
v/s Ratio Perm							0.15		c0.20	0.06		0.01
v/c Ratio	0.61	1.05		0.98	0.65		0.75	0.29	1.01	0.30	0.28	0.03
Uniform Delay, d1	45.1	22.0		44.3	12.8		38.1	34.4	40.4	34.4	34.3	32.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	34.2		39.7	0.7		19.3	2.0	53.8	3.2	1.8	0.2
Delay (s)	53.2	56.2		84.0	13.5		57.3	36.3	94.2	37.6	36.1	32.8
Level of Service	D	E		F	B		E	D	F	D	D	C
Approach Delay (s)		56.1			29.4			76.9			35.8	
Approach LOS		E			C			E			D	

Intersection Summary			
HCM Average Control Delay	48.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	100.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	2228	97	228	1424	248	149	137	263	222	159	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	2422	105	248	1548	270	162	149	286	241	173	166
RTOR Reduction (vph)	0	0	8	0	0	112	0	0	83	0	0	124
Lane Group Flow (vph)	132	2422	97	248	1548	158	162	149	203	241	173	42
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.6	72.0	72.0	7.0	70.4	70.4	6.0	18.0	18.0	7.0	19.0	19.0
Effective Green, g (s)	8.6	72.0	72.0	7.0	70.4	70.4	6.0	18.0	18.0	7.0	19.0	19.0
Actuated g/C Ratio	0.07	0.60	0.60	0.06	0.59	0.59	0.05	0.15	0.15	0.06	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	246	2123	950	200	2983	929	172	531	237	200	560	251
v/s Ratio Prot	0.04	c0.68		c0.07	0.30		0.05	0.04		c0.07	0.05	
v/s Ratio Perm			0.06			0.10			c0.13			0.03
v/c Ratio	0.54	1.14	0.10	1.24	0.52	0.17	0.94	0.28	0.86	1.20	0.31	0.17
Uniform Delay, d1	53.8	24.0	10.2	56.5	14.7	11.4	56.8	45.3	49.7	56.5	44.7	43.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	69.6	0.0	143.1	0.2	0.1	51.6	1.3	30.6	129.8	1.4	1.4
Delay (s)	56.0	93.6	10.3	199.6	14.9	11.5	108.4	46.6	80.3	186.3	46.1	45.1
Level of Service	E	F	B	F	B	B	F	D	F	F	D	D
Approach Delay (s)		88.5			36.6			79.5			104.1	
Approach LOS		F			D			E			F	

Intersection Summary			
HCM Average Control Delay	70.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	2666	181	333	1973	130	94	77	307	250	103	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	2898	197	362	2145	141	102	84	334	272	112	53
RTOR Reduction (vph)	0	0	50	0	0	34	0	0	93	0	0	41
Lane Group Flow (vph)	68	2898	147	362	2145	107	102	84	241	272	112	12
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	59.8	59.8	11.0	66.8	66.8	6.9	18.0	18.0	16.0	27.1	27.1
Effective Green, g (s)	4.0	59.8	59.8	11.0	66.8	66.8	6.9	18.0	18.0	16.0	27.1	27.1
Actuated g/C Ratio	0.03	0.50	0.50	0.09	0.55	0.55	0.06	0.15	0.15	0.13	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2517	784	313	2812	875	196	527	236	234	1141	355
v/s Ratio Prot	0.02	c0.57		c0.11	0.42		0.03	0.02		c0.15	0.02	
v/s Ratio Perm			0.09			0.07			c0.15			0.01
v/c Ratio	0.60	1.15	0.19	1.16	0.76	0.12	0.52	0.16	1.02	1.16	0.10	0.03
Uniform Delay, d1	57.6	30.5	17.0	54.9	20.9	12.9	55.3	44.8	51.4	52.4	37.2	36.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	73.2	0.1	100.3	1.3	0.1	2.5	0.6	64.4	109.7	0.2	0.2
Delay (s)	65.7	103.7	17.1	155.2	22.1	13.0	57.8	45.5	115.8	162.1	37.3	36.8
Level of Service	E	F	B	F	C	B	E	D	F	F	D	D
Approach Delay (s)		97.5			39.8			93.1			115.0	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	75.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	953	2181	109	247	1349	375	155	805	219	173	731	791
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1036	2371	118	268	1466	408	168	875	238	188	795	860
RTOR Reduction (vph)	0	0	35	0	0	79	0	0	123	0	0	1
Lane Group Flow (vph)	1036	2371	83	268	1466	329	168	875	115	188	795	859
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	36.0	61.0	61.0	10.0	35.0	35.0	6.0	24.0	24.0	9.0	27.0	63.0
Effective Green, g (s)	36.0	61.0	61.0	10.0	35.0	35.0	6.0	24.0	24.0	9.0	27.0	63.0
Actuated g/C Ratio	0.30	0.51	0.51	0.08	0.29	0.29	0.05	0.20	0.20	0.08	0.22	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1030	2585	805	286	1483	462	172	1017	317	257	796	884
v/s Ratio Prot	c0.30	0.47		0.08	c0.29		c0.05	0.17		0.05	c0.22	c0.29
v/s Ratio Perm			0.05			0.21			0.07			0.25
v/c Ratio	1.01	0.92	0.10	0.94	0.99	0.71	0.98	0.86	0.36	0.73	1.00	0.97
Uniform Delay, d1	42.0	27.2	15.3	54.7	42.3	38.0	56.9	46.4	41.4	54.3	46.5	27.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.5	5.7	0.1	36.4	20.4	5.2	61.1	9.5	3.2	10.2	31.6	23.4
Delay (s)	71.5	32.9	15.4	91.1	62.7	43.2	118.1	55.9	44.6	64.6	78.1	51.1
Level of Service	E	C	B	F	E	D	F	E	D	E	E	D
Approach Delay (s)		43.6			62.6			61.9			64.1	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	55.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	234	1976	140	109	1629	238	129	254	125	219	384	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	254	2148	152	118	1771	259	140	276	136	238	417	255
RTOR Reduction (vph)	0	0	65	0	0	90	0	0	84	0	0	88
Lane Group Flow (vph)	254	2148	88	118	1771	169	140	276	52	238	417	167
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	37.0	37.0	4.0	33.0	33.0	5.0	17.0	17.0	6.0	18.0	18.0
Effective Green, g (s)	8.0	37.0	37.0	4.0	33.0	33.0	5.0	17.0	17.0	6.0	18.0	18.0
Actuated g/C Ratio	0.10	0.46	0.46	0.05	0.41	0.41	0.06	0.21	0.21	0.08	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	2352	732	172	2098	653	215	1081	336	257	1144	356
v/s Ratio Prot	c0.07	c0.42		0.03	0.35		0.04	0.05		c0.07	0.08	
v/s Ratio Perm			0.06			0.11			0.03			c0.11
v/c Ratio	0.74	0.91	0.12	0.69	0.84	0.26	0.65	0.26	0.15	0.93	0.36	0.47
Uniform Delay, d1	35.0	20.0	12.2	37.4	21.2	15.5	36.6	26.2	25.6	36.8	26.2	26.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.3	6.0	0.1	10.8	3.3	0.2	6.9	0.6	1.0	36.5	0.9	4.4
Delay (s)	43.3	26.0	12.3	48.2	24.5	15.7	43.5	26.8	26.6	73.3	27.1	31.3
Level of Service	D	C	B	D	C	B	D	C	C	E	C	C
Approach Delay (s)		26.9			24.7			31.0			40.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	870	396	0	0	584	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	946	430	0	0	635	199
RTOR Reduction (vph)	0	263	0	0	0	43
Lane Group Flow (vph)	946	167	0	0	635	156
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	31.1	31.1			40.9	40.9
Effective Green, g (s)	31.1	31.1			40.9	40.9
Actuated g/C Ratio	0.39	0.39			0.51	0.51
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1376	615			1755	809
v/s Ratio Prot	c0.27				c0.18	
v/s Ratio Perm		0.11				0.10
v/c Ratio	0.69	0.27			0.36	0.19
Uniform Delay, d1	20.4	16.7			11.7	10.6
Progression Factor	0.34	0.04			1.00	1.00
Incremental Delay, d2	1.1	0.2			0.6	0.5
Delay (s)	7.9	0.9			12.3	11.1
Level of Service	A	A			B	B
Approach Delay (s)	5.7			0.0	12.0	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	34	60	4	333	94	83	97	0	79	7	0	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3508		1770	3539	1583	1770		1583	1770		1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3508		1770	3539	1583	1770		1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	65	4	362	102	90	105	0	86	8	0	432
RTOR Reduction (vph)	0	3	0	0	0	37	0	0	72	0	0	362
Lane Group Flow (vph)	37	66	0	362	102	53	105	0	14	8	0	70
Turn Type	Prot			Prot		Perm	custom		custom	custom		custom
Protected Phases	5	2		1	6							
Permitted Phases						6	4		4	8		8
Actuated Green, G (s)	3.2	20.8		17.5	35.1	35.1	9.7		9.7	9.7		9.7
Effective Green, g (s)	3.2	20.8		17.5	35.1	35.1	9.7		9.7	9.7		9.7
Actuated g/C Ratio	0.05	0.35		0.29	0.59	0.59	0.16		0.16	0.16		0.16
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	94	1216		516	2070	926	286		256	286		256
v/s Ratio Prot	0.02	0.02		c0.20	0.03							
v/s Ratio Perm						c0.03	c0.06		0.01	0.00		0.04
v/c Ratio	0.39	0.05		0.70	0.05	0.06	0.37		0.05	0.03		0.27
Uniform Delay, d1	27.5	13.1		18.9	5.3	5.3	22.4		21.3	21.2		22.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	2.7	0.1		4.3	0.0	0.1	0.8		0.1	0.0		0.6
Delay (s)	30.2	13.1		23.2	5.4	5.5	23.2		21.4	21.2		22.6
Level of Service	C	B		C	A	A	C		C	C		C
Approach Delay (s)		19.1			17.0			22.4			22.6	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	26	286	189	41	175	149
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	311	205	45	190	162

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	28	311	250	352
Volume Left (vph)	28	0	0	190
Volume Right (vph)	0	311	45	0
Hadj (s)	0.53	-0.67	-0.07	0.14
Departure Headway (s)	6.6	5.4	5.3	5.4
Degree Utilization, x	0.05	0.47	0.37	0.53
Capacity (veh/h)	513	616	638	641
Control Delay (s)	8.8	11.9	11.4	14.2
Approach Delay (s)	11.7		11.4	14.2
Approach LOS	B		B	B

Intersection Summary			
Delay	12.5		
HCM Level of Service	B		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Polk/Sierra

Cycle (sec):	100	Critical Vol./Cap.(X):	0.509
Loss Time (sec):	0	Average Delay (sec/veh):	12.6
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk									Dante							
Approach:	North Bound			South Bound			East Bound			West Bound							
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign							
Rights:	Include			Include			Include			Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0					
Lanes:	1 0	0 1	0	1 0	1 0	1	1 0	0 1	0	1 0	1 0	1					
Volume Module:																	
Base Vol:	52	237	23	60	189	28	54	104	70	40	65	70					
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Initial Bse:	52	237	23	60	189	28	54	104	70	40	65	70					
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92					
PHF Volume:	57	258	25	65	205	30	59	113	76	43	71	76					
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0					
Reduced Vol:	57	258	25	65	205	30	59	113	76	43	71	76					
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
FinalVolume:	57	258	25	65	205	30	59	113	76	43	71	76					
Saturation Flow Module:																	
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Lanes:	1.00	0.91	0.09	1.00	1.00	1.00	1.00	0.60	0.40	1.00	1.00	1.00					
Final Sat.:	506	506	49	471	508	557	475	318	214	439	468	514					
Capacity Analysis Module:																	
Vol/Sat:	0.11	0.51	0.51	0.14	0.40	0.05	0.12	0.36	0.36	0.10	0.15	0.15					
Crit Moves:		****			****				****		****						
Delay/Veh:	10.3	14.8	14.8	11.1	13.7	9.1	10.8	12.2	12.2	11.1	11.0	10.2					
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
AdjDel/Veh:	10.3	14.8	14.8	11.1	13.7	9.1	10.8	12.2	12.2	11.1	11.0	10.2					
LOS by Move:	B	B	B	B	B	A	B	B	B	B	B	B					
ApproachDel:	14.0			12.7			11.9			10.7							
Delay Adj:	1.00			1.00			1.00			1.00							
ApprAdjDel:	14.0			12.7			11.9			10.7							
LOS by Appr:	B			B			B			B							
AllWayAvgQ:	0.1	0.9	0.9	0.1	0.6	0.1	0.1	0.5	0.5	0.1	0.2	0.1					

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	69	4	7	10	4	190	8	487	0	62	247	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	75	4	8	11	4	207	9	529	0	67	268	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	905	961	280	960	973	265	291			529		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	905	961	280	960	973	265	291			529		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	52	98	99	94	98	72	99			93		
cM capacity (veh/h)	155	236	717	195	233	734	1267			1034		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	75	4	8	11	4	207	9	265	265	0	67	291
Volume Left	75	0	0	11	0	0	9	0	0	0	67	0
Volume Right	0	0	8	0	0	207	0	0	0	0	0	23
cSH	155	236	717	195	233	734	1267	1700	1700	1700	1034	1700
Volume to Capacity	0.48	0.02	0.01	0.06	0.02	0.28	0.01	0.16	0.16	0.00	0.07	0.17
Queue Length 95th (ft)	57	1	1	4	1	29	1	0	0	0	5	0
Control Delay (s)	48.3	20.5	10.1	24.6	20.8	11.8	7.9	0.0	0.0	0.0	8.7	0.0
Lane LOS	E	C	B	C	C	B	A				A	
Approach Delay (s)	43.6			12.6			0.1				1.6	
Approach LOS	E			B								

Intersection Summary				
Average Delay	6.0			
Intersection Capacity Utilization	39.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	93	184	529	154	126	208
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	101	200	575	167	137	226

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	301	575	167	137	226
Volume Left (vph)	0	575	0	137	0
Volume Right (vph)	200	0	0	0	226
Hadj (s)	-0.36	0.53	0.03	0.53	-0.67
Departure Headway (s)	6.0	6.7	6.2	7.6	6.4
Degree Utilization, x	0.50	1.07	0.29	0.29	0.40
Capacity (veh/h)	582	532	570	460	545
Control Delay (s)	15.0	83.3	10.5	12.5	12.6
Approach Delay (s)	15.0	66.9		12.5	
Approach LOS	C	F		B	

Intersection Summary			
Delay	41.8		
HCM Level of Service	E		
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	49	185	8	4	125	251	2	4	4	544	10	169
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	201	9	4	136	273	2	4	4	591	11	184

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	154	109	140	273	11	786
Volume Left (vph)	53	0	4	0	2	591
Volume Right (vph)	0	9	0	273	4	184
Hadj (s)	0.21	-0.02	0.05	-0.67	-0.17	0.04
Departure Headway (s)	7.4	7.1	7.0	6.3	7.0	5.8
Degree Utilization, x	0.31	0.22	0.27	0.48	0.02	1.26
Capacity (veh/h)	479	494	503	564	476	617
Control Delay (s)	12.5	10.9	11.4	13.7	10.2	150.2
Approach Delay (s)	11.8		12.9		10.2	150.2
Approach LOS	B		B		B	F

Intersection Summary			
Delay	86.0		
HCM Level of Service	F		
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.456
Loss Time (sec):	0	Average Delay (sec/veh):	12.8
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk									Dante					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	185	12	20	103	14	52	19	232	40	28	324	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	185	12	20	103	14	52	19	232	40	28	324	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	201	13	22	112	15	57	21	252	43	30	352	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	201	13	22	112	15	57	21	252	43	30	352	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	201	13	22	112	15	57	21	252	43	30	352	35
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	441	462	508	425	447	491	447	962	526	463	1001	547
Capacity Analysis Module:												
Vol/Sat:	0.46	0.03	0.04	0.26	0.03	0.12	0.05	0.26	0.08	0.07	0.35	0.06
Crit Moves:	****			****				****			****	
Delay/Veh:	16.3	10.2	9.6	13.2	10.4	10.3	10.6	12.1	9.6	10.6	13.1	9.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.3	10.2	9.6	13.2	10.4	10.3	10.6	12.1	9.6	10.6	13.1	9.3
LOS by Move:	C	B	A	B	B	B	B	B	A	B	B	A
ApproachDel:	15.4			12.1			11.7			12.6		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	15.4			12.1			11.7			12.6		
LOS by Appr:	C			B			B			B		
AllWayAvgQ:	0.7	0.0	0.0	0.3	0.0	0.1	0.0	0.3	0.1	0.1	0.5	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	893	81	104	545	95	49	432	82	86	461	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	971	88	113	592	103	53	470	89	93	501	75
RTOR Reduction (vph)	0	0	40	0	15	0	0	0	46	0	0	43
Lane Group Flow (vph)	185	971	48	113	680	0	53	470	43	93	501	32
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.9	47.0	47.0	6.0	39.1		3.2	16.0	16.0	5.0	17.8	17.8
Effective Green, g (s)	13.9	47.0	47.0	6.0	39.1		3.2	16.0	16.0	5.0	17.8	17.8
Actuated g/C Ratio	0.15	0.52	0.52	0.07	0.43		0.04	0.18	0.18	0.06	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	273	973	827	118	1504		63	629	281	98	700	313
v/s Ratio Prot	0.10	c0.52		c0.06	0.20		0.03	0.13		c0.05	c0.14	
v/s Ratio Perm			0.03						0.03			0.02
v/c Ratio	0.68	1.00	0.06	0.96	0.45		0.84	0.75	0.15	0.95	0.72	0.10
Uniform Delay, d1	35.9	21.5	10.6	41.9	17.9		43.1	35.1	31.3	42.4	33.7	29.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	28.1	0.0	68.8	0.2		60.8	4.8	0.3	73.5	3.5	0.1
Delay (s)	42.5	49.6	10.6	110.7	18.1		104.0	39.9	31.5	115.9	37.2	29.7
Level of Service	D	D	B	F	B		F	D	C	F	D	C
Approach Delay (s)		45.8			31.1			44.2			47.3	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	42.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	29	11	4	18	68	8	334	6	45	178	26
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	32	12	4	20	74	9	363	7	49	193	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	755	678	193	699	700	363	222			370		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	755	678	193	699	700	363	222			370		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	76	91	99	99	94	89	99			96		
cM capacity (veh/h)	267	356	848	314	346	682	1347			1189		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	109	98	372	7	242	28
Volume Left	65	4	9	0	49	0
Volume Right	12	74	0	7	0	28
cSH	314	547	1347	1700	1189	1700
Volume to Capacity	0.35	0.18	0.01	0.00	0.04	0.02
Queue Length 95th (ft)	38	16	0	0	3	0
Control Delay (s)	22.5	13.0	0.2	0.0	1.9	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	22.5	13.0	0.2		1.7	
Approach LOS	C	B				

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	900	488	568	841	71	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	978	530	617	914	77	290
RTOR Reduction (vph)	0	179	0	0	0	249
Lane Group Flow (vph)	978	351	617	914	77	41
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	55.0	55.0	36.0	95.0	17.0	17.0
Effective Green, g (s)	55.0	55.0	36.0	95.0	17.0	17.0
Actuated g/C Ratio	0.46	0.46	0.30	0.79	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	854	726	531	2802	251	224
v/s Ratio Prot	c0.53		c0.35	0.26	c0.04	
v/s Ratio Perm		0.22				0.03
v/c Ratio	1.15	0.48	1.16	0.33	0.31	0.18
Uniform Delay, d1	32.5	22.6	42.0	3.5	46.2	45.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	79.1	0.5	92.1	0.1	3.1	1.8
Delay (s)	111.6	23.1	134.1	3.6	49.4	47.2
Level of Service	F	C	F	A	D	D
Approach Delay (s)	80.5			56.2	47.6	
Approach LOS	F			E	D	

Intersection Summary			
HCM Average Control Delay	66.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (vph)	117	1038	1153	260	145	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	127	1128	1253	283	158	276
RTOR Reduction (vph)	0	0	0	138	0	217
Lane Group Flow (vph)	127	1128	1253	145	158	59
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	8.7	51.0	38.3	38.3	16.0	16.0
Effective Green, g (s)	8.7	51.0	38.3	38.3	16.0	16.0
Actuated g/C Ratio	0.12	0.68	0.51	0.51	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	205	1267	1807	808	378	338
v/s Ratio Prot	0.07	c0.61	0.35		c0.09	
v/s Ratio Perm				0.09		0.04
v/c Ratio	0.62	0.89	0.69	0.18	0.42	0.17
Uniform Delay, d1	31.6	9.7	13.9	9.9	25.5	24.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	8.2	1.2	0.1	3.4	1.1
Delay (s)	37.1	17.9	15.1	10.0	28.9	25.2
Level of Service	D	B	B	A	C	C
Approach Delay (s)		19.8	14.1		26.5	
Approach LOS		B	B		C	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	36	1010	39	370	1124	180	216	392	31	17	302	527
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1098	42	402	1222	196	235	426	34	18	328	573
RTOR Reduction (vph)	0	0	19	0	0	80	0	0	24	0	0	308
Lane Group Flow (vph)	39	1098	23	402	1222	116	235	426	10	18	328	265
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	3.6	35.6	35.6	25.0	57.0	57.0	15.0	31.4	31.4	2.0	18.4	18.4
Effective Green, g (s)	3.6	35.6	35.6	25.0	57.0	57.0	15.0	31.4	31.4	2.0	18.4	18.4
Actuated g/C Ratio	0.03	0.32	0.32	0.23	0.52	0.52	0.14	0.29	0.29	0.02	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1145	512	402	1834	820	241	1010	452	32	592	265
v/s Ratio Prot	0.02	c0.31		c0.23	0.35		c0.13	0.12		0.01	0.09	
v/s Ratio Perm			0.01			0.07			0.01			c0.17
v/c Ratio	0.67	0.96	0.05	1.00	0.67	0.14	0.98	0.42	0.02	0.56	0.55	1.00
Uniform Delay, d1	52.6	36.5	25.5	42.5	19.5	13.8	47.3	31.9	28.3	53.6	42.0	45.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.6	17.4	0.0	44.9	0.9	0.1	50.5	1.3	0.1	20.7	3.7	55.2
Delay (s)	79.2	53.9	25.6	87.4	20.4	13.9	97.8	33.2	28.3	74.2	45.7	101.0
Level of Service	E	D	C	F	C	B	F	C	C	E	D	F
Approach Delay (s)		53.7			34.5			54.8			80.7	
Approach LOS		D			C			D			F	

Intersection Summary			
HCM Average Control Delay	51.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	1206	74	121	1142	94	171	230	64	240	695	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	1311	80	132	1241	102	186	250	70	261	755	158
RTOR Reduction (vph)	0	0	56	0	0	71	0	0	51	0	0	112
Lane Group Flow (vph)	112	1311	24	132	1241	31	186	250	19	261	755	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	18.0	18.0	3.2	18.0	18.0	5.3	16.5	16.5	6.3	17.5	17.5
Effective Green, g (s)	3.2	18.0	18.0	3.2	18.0	18.0	5.3	16.5	16.5	6.3	17.5	17.5
Actuated g/C Ratio	0.05	0.30	0.30	0.05	0.30	0.30	0.09	0.28	0.28	0.10	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1526	475	183	1526	475	303	973	435	360	1032	462
v/s Ratio Prot	0.03	c0.26		c0.04	0.24		0.05	0.07		c0.08	c0.21	
v/s Ratio Perm			0.02			0.02			0.01			0.03
v/c Ratio	0.61	0.86	0.05	0.72	0.81	0.06	0.61	0.26	0.04	0.72	0.73	0.10
Uniform Delay, d1	27.8	19.8	14.9	28.0	19.4	15.0	26.4	17.0	16.0	26.0	19.1	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	5.1	0.0	13.1	3.4	0.1	3.7	0.6	0.2	7.1	4.6	0.4
Delay (s)	33.7	24.9	15.0	41.1	22.9	15.0	30.0	17.6	16.2	33.1	23.7	15.9
Level of Service	C	C	B	D	C	B	C	B	B	C	C	B
Approach Delay (s)		25.0			24.0			22.0			24.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	251	1443	101	144	952	59	181	408	384	279	510	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	273	1568	110	157	1035	64	197	443	417	303	554	439
RTOR Reduction (vph)	0	0	63	0	0	46	0	0	113	0	0	112
Lane Group Flow (vph)	273	1568	47	157	1035	18	197	443	304	303	554	327
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	24.0	24.0	4.0	20.0	20.0	5.0	19.0	19.0	7.0	21.0	21.0
Effective Green, g (s)	8.0	24.0	24.0	4.0	20.0	20.0	5.0	19.0	19.0	7.0	21.0	21.0
Actuated g/C Ratio	0.11	0.34	0.34	0.06	0.29	0.29	0.07	0.27	0.27	0.10	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	392	1743	543	196	1453	452	245	961	430	343	1062	475
v/s Ratio Prot	c0.08	c0.31		0.05	0.20		0.06	0.13		c0.09	0.16	
v/s Ratio Perm			0.03			0.01			0.19			c0.21
v/c Ratio	0.70	0.90	0.09	0.80	0.71	0.04	0.80	0.46	0.71	0.88	0.52	0.69
Uniform Delay, d1	29.8	21.9	15.6	32.6	22.4	18.1	32.0	21.2	23.0	31.1	20.3	21.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3	6.6	0.1	20.5	1.7	0.0	17.2	1.6	9.4	22.5	1.8	7.9
Delay (s)	35.1	28.5	15.6	53.1	24.1	18.1	49.2	22.8	32.4	53.6	22.2	29.5
Level of Service	D	C	B	D	C	B	D	C	C	D	C	C
Approach Delay (s)		28.7			27.4			31.5			32.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	1586	146	156	1072	67	201	537	266	148	417	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	1724	159	170	1165	73	218	584	289	161	453	170
RTOR Reduction (vph)	0	0	98	0	0	46	0	0	114	0	0	113
Lane Group Flow (vph)	133	1724	61	170	1165	27	218	584	175	161	453	57
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	23.8	23.8	4.0	23.8	23.8	5.0	16.2	16.2	5.0	16.2	16.2
Effective Green, g (s)	4.0	23.8	23.8	4.0	23.8	23.8	5.0	16.2	16.2	5.0	16.2	16.2
Actuated g/C Ratio	0.06	0.37	0.37	0.06	0.37	0.37	0.08	0.25	0.25	0.08	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	211	1862	580	211	1862	580	264	882	395	264	882	395
v/s Ratio Prot	0.04	c0.34		c0.05	0.23		c0.06	c0.17		0.05	0.13	
v/s Ratio Perm			0.04			0.02			0.11			0.04
v/c Ratio	0.63	0.93	0.10	0.81	0.63	0.05	0.83	0.66	0.44	0.61	0.51	0.14
Uniform Delay, d1	29.8	19.8	13.6	30.1	16.9	13.3	29.6	21.9	20.6	29.1	21.0	19.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.0	8.4	0.1	19.6	0.7	0.0	18.6	3.9	3.6	4.0	2.1	0.8
Delay (s)	35.8	28.2	13.7	49.8	17.6	13.3	48.2	25.8	24.2	33.0	23.1	19.8
Level of Service	D	C	B	D	B	B	D	C	C	C	C	B
Approach Delay (s)		27.5			21.3			29.9			24.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1467	35	139	502	0	20	0	408	161	30	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.89	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3161	
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1265		1583	1770	3161	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1595	38	151	546	0	22	0	443	175	33	82
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	155	0	61	0
Lane Group Flow (vph)	0	1595	27	151	546	0	22	0	288	175	54	0
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		35.8	35.8	8.0	47.8		19.0		19.0	19.0	19.0	
Effective Green, g (s)		35.8	35.8	8.0	47.8		19.0		19.0	19.0	19.0	
Actuated g/C Ratio		0.48	0.48	0.11	0.64		0.25		0.25	0.25	0.25	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1694	758	189	2262		321		402	450	803	
v/s Ratio Prot		c0.45		c0.09	0.15						0.02	
v/s Ratio Perm			0.02				0.02		c0.18	0.10		
v/c Ratio		0.94	0.04	0.80	0.24		0.07		0.72	0.39	0.07	
Uniform Delay, d1		18.5	10.3	32.6	5.8		21.2		25.4	23.1	21.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		10.9	0.0	20.5	0.1		0.1		6.0	2.5	0.2	
Delay (s)		29.4	10.4	53.2	5.8		21.3		31.4	25.6	21.3	
Level of Service		C	B	D	A		C		C	C	C	
Approach Delay (s)		29.0			16.1			30.9			23.9	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	344	1096	0	0	554	298	262	15	487	179	0	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.87	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1473	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.57		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1473	1504	2054		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	374	1191	0	0	602	324	285	16	529	195	0	229
RTOR Reduction (vph)	0	0	0	0	0	181	0	83	83	0	0	188
Lane Group Flow (vph)	374	1191	0	0	602	143	256	205	203	195	0	41
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	21.0	42.4			17.4	17.4	18.0	18.0	18.0	16.0		16.0
Effective Green, g (s)	21.0	42.4			17.4	17.4	18.0	18.0	18.0	16.0		16.0
Actuated g/C Ratio	0.24	0.48			0.20	0.20	0.20	0.20	0.20	0.18		0.18
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	420	1697			697	312	342	300	306	372		287
v/s Ratio Prot	c0.21	0.34			c0.17		c0.15	0.14				
v/s Ratio Perm						0.09			0.14	c0.09		0.03
v/c Ratio	0.89	0.70			0.86	0.46	0.75	0.68	0.66	0.52		0.14
Uniform Delay, d1	32.6	18.0			34.4	31.3	33.1	32.6	32.4	32.8		30.4
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	20.3	1.3			10.8	1.1	13.9	12.0	10.8	5.2		1.1
Delay (s)	52.9	19.4			45.2	32.4	47.0	44.5	43.3	38.0		31.5
Level of Service	D	B			D	C	D	D	D	D		C
Approach Delay (s)		27.4			40.7			44.9			34.5	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Scenario 4 – Phase 1F

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (vph)	105	32	12	547	1175	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1794	1863	1583	3433	1583
Flt Permitted		0.79	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1472	1863	1583	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	35	13	595	1277	168
RTOR Reduction (vph)	0	0	0	342	0	62
Lane Group Flow (vph)	0	149	13	253	1277	106
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)		34.0	34.0	34.0	38.0	38.0
Effective Green, g (s)		34.0	34.0	34.0	38.0	38.0
Actuated g/C Ratio		0.42	0.42	0.42	0.48	0.48
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		626	792	673	1631	752
v/s Ratio Prot			0.01			
v/s Ratio Perm		0.10		c0.16	c0.37	0.07
v/c Ratio		0.24	0.02	0.38	0.78	0.14
Uniform Delay, d1		14.7	13.3	15.7	17.6	11.8
Progression Factor		1.00	2.35	10.94	0.73	0.85
Incremental Delay, d2		0.9	0.0	1.5	0.2	0.0
Delay (s)		15.6	31.3	173.7	13.0	10.0
Level of Service		B	C	F	B	B
Approach Delay (s)		15.6	170.6		12.7	
Approach LOS		B	F		B	

Intersection Summary			
HCM Average Control Delay	56.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	55	825	651	0	0	1396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	897	708	0	0	1517
RTOR Reduction (vph)	0	417	0	0	0	0
Lane Group Flow (vph)	60	480	708	0	0	1517
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	15.4	15.4	56.6			56.6
Effective Green, g (s)	15.4	15.4	56.6			56.6
Actuated g/C Ratio	0.19	0.19	0.71			0.71
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	341	536	1318			1318
v/s Ratio Prot	0.03		0.38			c0.81
v/s Ratio Perm		c0.17				
v/c Ratio	0.18	0.90	0.54			1.15
Uniform Delay, d1	27.0	31.5	5.5			11.7
Progression Factor	1.00	1.00	0.74			1.20
Incremental Delay, d2	1.1	20.2	0.4			74.7
Delay (s)	28.1	51.7	4.4			88.8
Level of Service	C	D	A			F
Approach Delay (s)	50.3		4.4			88.8
Approach LOS	D		A			F

Intersection Summary			
HCM Average Control Delay	58.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	402	114	285	62	200	67	187	1208	63	119	1069	627
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	437	124	310	67	217	73	203	1313	68	129	1162	682
RTOR Reduction (vph)	0	0	137	0	0	63	0	0	43	0	0	453
Lane Group Flow (vph)	437	124	173	67	217	10	203	1313	25	129	1162	229
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			
Actuated Green, G (s)	13.8	21.6	21.6	3.2	11.0	11.0	5.8	29.9	29.9	9.3	33.4	13.8
Effective Green, g (s)	13.8	21.6	21.6	3.2	11.0	11.0	5.8	29.9	29.9	9.3	33.4	13.8
Actuated g/C Ratio	0.17	0.27	0.27	0.04	0.14	0.14	0.07	0.37	0.37	0.12	0.42	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	592	956	427	137	487	218	249	1901	592	206	1478	273
v/s Ratio Prot	0.13	0.04		0.02	0.06		0.06	0.26		c0.07	c0.33	c0.14
v/s Ratio Perm			c0.11			0.01			0.02			
v/c Ratio	0.74	0.13	0.40	0.49	0.45	0.05	0.82	0.69	0.04	0.63	0.79	0.84
Uniform Delay, d1	31.4	22.1	23.9	37.6	31.7	29.9	36.6	21.1	15.9	33.7	20.2	32.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.02	0.95	1.05	0.86	0.41	2.52
Incremental Delay, d2	4.8	0.1	0.6	2.7	0.7	0.1	12.3	1.3	0.1	4.4	3.2	15.7
Delay (s)	36.2	22.2	24.6	40.3	32.4	30.0	49.5	21.3	16.8	33.4	11.5	96.5
Level of Service	D	C	C	D	C	C	D	C	B	C	B	F
Approach Delay (s)		30.0			33.4			24.7			42.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	33.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

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-------------------------------------------------------------------------------
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                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #1 Weber/Herndon
*******************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: B[ 13.3]
*******************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  1! 0  0    0  1  2  0  1    0  1  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    15     0    0     0     0 1277   125     7 1741     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0    15     0    0     0     0 1277   125     7 1741     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0    16     0    0     0     0 1388   136     8 1892     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    16     0    0     0     0 1388   136     8 1892     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9   7.5  6.5   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3   3.5  4.0   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   463  2370 3432   473  xxxx xxxx xxxxx  1524 xxxx xxxxx
Potent Cap.: xxxx xxxx   551    19    7   543  xxxx xxxx xxxxx   443 xxxx xxxxx
Move Cap.:   xxxx xxxx   551    18    7   543  xxxx xxxx xxxxx   443 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.03  0.00 0.00  0.00  xxxx xxxx  xxxx  0.02 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.1  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx  11.7 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  13.3 xxxx xxxxx
LOS by Move:    *    *     B     *    *     *     *    *     *     B    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx   0.1 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.2 xxxx xxxxx  13.3 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     A    *     *     B    *     *
ApproachDel:      11.7           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	278	589	425	254	1044	223	443	41	262	206	49	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	302	640	462	276	1135	242	482	45	285	224	53	276
RTOR Reduction (vph)	0	0	202	0	0	179	0	0	196	0	0	244
Lane Group Flow (vph)	302	640	260	276	1135	63	482	45	89	224	53	32
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	9.1	19.7	45.1	10.3	20.9	20.9	25.4	25.0	25.0	9.0	8.6	8.6
Effective Green, g (s)	9.1	19.7	45.1	10.3	20.9	20.9	25.4	25.0	25.0	9.0	8.6	8.6
Actuated g/C Ratio	0.11	0.25	0.56	0.13	0.26	0.26	0.32	0.31	0.31	0.11	0.11	0.11
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	391	1252	892	442	1328	414	1090	582	495	386	200	170
v/s Ratio Prot	c0.09	0.13	0.09	0.08	c0.22		c0.14	0.02		c0.07	c0.03	
v/s Ratio Perm			0.07			0.04			0.06			0.02
v/c Ratio	0.77	0.51	0.29	0.62	0.85	0.15	0.44	0.08	0.18	0.58	0.26	0.19
Uniform Delay, d1	34.4	26.0	9.1	33.0	28.1	22.7	21.7	19.4	20.0	33.7	32.8	32.5
Progression Factor	0.71	0.62	6.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.0	0.3	0.1	2.7	5.6	0.2	1.3	0.3	0.8	2.2	0.7	0.5
Delay (s)	31.4	16.4	54.8	35.8	33.7	22.9	23.0	19.6	20.8	35.9	33.5	33.1
Level of Service	C	B	D	D	C	C	C	B	C	D	C	C
Approach Delay (s)		32.3			32.5			22.0			34.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	638	8	162	890	6	41	32	113	6	129	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1645		3433	1715	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	1645		3433	1715	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	693	9	176	967	7	45	35	123	7	140	158
RTOR Reduction (vph)	0	0	6	0	0	5	0	80	0	0	63	0
Lane Group Flow (vph)	76	693	3	176	967	2	45	78	0	7	235	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	3.0	17.4	17.4	3.7	18.1	18.1	2.2	20.4		0.7	18.9	
Effective Green, g (s)	3.0	17.4	17.4	3.7	18.1	18.1	2.2	20.4		0.7	18.9	
Actuated g/C Ratio	0.05	0.30	0.30	0.06	0.31	0.31	0.04	0.35		0.01	0.32	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	91	1058	473	218	1101	492	130	577		41	557	
v/s Ratio Prot	0.04	0.20		c0.05	c0.27		c0.01	0.05		0.00	c0.14	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.84	0.66	0.01	0.81	0.88	0.00	0.35	0.14		0.17	0.42	
Uniform Delay, d1	27.4	17.8	14.3	26.9	19.0	13.8	27.3	12.9		28.5	15.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	45.3	1.5	0.0	19.3	8.1	0.0	1.6	0.5		2.0	2.3	
Delay (s)	72.7	19.3	14.3	46.2	27.1	13.8	28.9	13.4		30.4	17.7	
Level of Service	E	B	B	D	C	B	C	B		C	B	
Approach Delay (s)		24.4			30.0			16.8			18.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1231	103	108	1384	99	135	31	309	171	67	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1609		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1609		3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	1338	112	117	1504	108	147	34	336	186	73	29
RTOR Reduction (vph)	0	0	60	0	0	30	0	93	0	0	0	23
Lane Group Flow (vph)	8	1338	52	117	1504	78	147	277	0	186	73	6
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	35.1	35.1	3.1	37.4	37.4	5.0	17.1		5.0	17.1	17.1
Effective Green, g (s)	0.8	35.1	35.1	3.1	37.4	37.4	5.0	17.1		5.0	17.1	17.1
Actuated g/C Ratio	0.01	0.46	0.46	0.04	0.49	0.49	0.07	0.22		0.07	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	36	1628	728	139	1735	776	225	361		225	418	355
v/s Ratio Prot	0.00	0.38		c0.03	c0.42		0.04	c0.17		c0.05	0.04	
v/s Ratio Perm			0.03			0.05						0.00
v/c Ratio	0.22	0.82	0.07	0.84	0.87	0.10	0.65	0.77		0.83	0.17	0.02
Uniform Delay, d1	37.4	17.9	11.5	36.4	17.2	10.4	34.8	27.7		35.2	23.9	23.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.1	3.5	0.0	34.5	4.8	0.1	6.7	14.4		21.3	0.9	0.1
Delay (s)	40.6	21.4	11.5	70.9	22.1	10.5	41.5	42.2		56.6	24.8	23.2
Level of Service	D	C	B	E	C	B	D	D		E	C	C
Approach Delay (s)		20.7			24.7			42.0			45.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	76.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	262	1293	174	90	1148	264	155	286	147	488	397	282
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	285	1405	189	98	1248	287	168	311	160	530	432	307
RTOR Reduction (vph)	0	0	126	0	0	214	0	0	119	0	0	137
Lane Group Flow (vph)	285	1405	63	98	1248	73	168	311	41	530	432	170
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	19.6	19.6	3.2	16.8	16.8	6.8	17.0	17.0	10.0	20.2	20.2
Effective Green, g (s)	6.0	19.6	19.6	3.2	16.8	16.8	6.8	17.0	17.0	10.0	20.2	20.2
Actuated g/C Ratio	0.09	0.30	0.30	0.05	0.26	0.26	0.10	0.26	0.26	0.15	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	313	1515	472	167	1298	404	355	914	409	522	1086	486
v/s Ratio Prot	c0.08	c0.28		0.03	0.25		0.05	0.09		c0.15	c0.12	
v/s Ratio Perm			0.04			0.05			0.03			0.11
v/c Ratio	0.91	0.93	0.13	0.59	0.96	0.18	0.47	0.34	0.10	1.02	0.40	0.35
Uniform Delay, d1	29.6	22.4	16.9	30.7	24.2	19.1	27.8	19.8	18.6	27.9	18.0	17.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	29.1	10.1	0.1	5.2	16.6	0.2	1.0	1.0	0.5	43.3	1.1	2.0
Delay (s)	58.7	32.5	17.0	35.8	40.7	19.3	28.8	20.9	19.1	71.2	19.1	19.7
Level of Service	E	C	B	D	D	B	C	C	B	E	B	B
Approach Delay (s)		34.9			36.7			22.5			41.0	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1935	1	2	1504	56	0	1	0	56	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.95		0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00		1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.95		1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583		3539		3433		1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00		0.76		1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583		3539		2736		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	2103	1	2	1635	61	0	1	0	61	0	1
RTOR Reduction (vph)	0	0	0	0	0	25	0	0	0	0	0	1
Lane Group Flow (vph)	1	2103	1	2	1635	36	0	1	0	61	0	0
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		6
Actuated Green, G (s)	0.7	26.8	26.8	0.7	26.8	26.8		6.5		6.5		6.5
Effective Green, g (s)	0.7	26.8	26.8	0.7	26.8	26.8		6.5		6.5		6.5
Actuated g/C Ratio	0.02	0.58	0.58	0.02	0.58	0.58		0.14		0.14		0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0		4.0		4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0		3.0
Lane Grp Cap (vph)	52	2963	922	52	2963	922		500		387		224
v/s Ratio Prot	0.00	c0.41		c0.00	0.32			0.00				
v/s Ratio Perm			0.00			0.02				c0.02		0.00
v/c Ratio	0.02	0.71	0.00	0.04	0.55	0.04		0.00		0.16		0.00
Uniform Delay, d1	22.3	6.8	4.0	22.3	5.9	4.1		17.0		17.3		17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00		1.00
Incremental Delay, d2	0.1	0.8	0.0	0.3	0.2	0.0		0.0		0.2		0.0
Delay (s)	22.5	7.6	4.0	22.6	6.1	4.1		17.0		17.5		17.0
Level of Service	C	A	A	C	A	A		B		B		B
Approach Delay (s)		7.6			6.1			17.0			17.5	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	46.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	1727	208	370	1297	25	177	98	421	66	94	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3482		3433	3529		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.65	1.00	1.00	0.64	1.00	1.00
Satd. Flow (perm)	1770	3482		3433	3529		1216	1863	1583	1195	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	1877	226	402	1410	27	192	107	458	72	102	52
RTOR Reduction (vph)	0	8	0	0	1	0	0	0	138	0	0	41
Lane Group Flow (vph)	84	2095	0	402	1436	0	192	107	320	72	102	11
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	8.3	62.8		13.0	67.5		23.0	23.0	23.0	23.0	23.0	23.0
Effective Green, g (s)	8.3	62.8		13.0	67.5		23.0	23.0	23.0	23.0	23.0	23.0
Actuated g/C Ratio	0.07	0.57		0.12	0.61		0.21	0.21	0.21	0.21	0.21	0.21
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	133	1974		403	2150		252	387	329	248	387	329
v/s Ratio Prot	0.05	c0.60		c0.12	0.41			0.06			0.05	
v/s Ratio Perm							0.16		c0.20	0.06		0.01
v/c Ratio	0.63	1.06		1.00	0.67		0.76	0.28	0.97	0.29	0.26	0.03
Uniform Delay, d1	49.8	24.0		48.9	14.3		41.3	36.9	43.6	37.0	36.8	35.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.4	38.8		43.9	0.8		19.4	1.8	43.2	2.9	1.7	0.2
Delay (s)	59.2	62.8		92.7	15.1		60.7	38.7	86.8	40.0	38.5	35.2
Level of Service	E	E		F	B		E	D	F	D	D	D
Approach Delay (s)		62.6			32.0			73.4			38.2	
Approach LOS		E			C			E			D	

Intersection Summary			
HCM Average Control Delay	51.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	2254	100	228	1468	248	153	137	263	222	159	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	2450	109	248	1596	270	166	149	286	241	173	167
RTOR Reduction (vph)	0	0	8	0	0	112	0	0	83	0	0	121
Lane Group Flow (vph)	133	2450	101	248	1596	158	166	149	203	241	173	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.6	72.0	72.0	7.0	70.4	70.4	6.0	18.0	18.0	7.0	19.0	19.0
Effective Green, g (s)	8.6	72.0	72.0	7.0	70.4	70.4	6.0	18.0	18.0	7.0	19.0	19.0
Actuated g/C Ratio	0.07	0.60	0.60	0.06	0.59	0.59	0.05	0.15	0.15	0.06	0.16	0.16
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	246	2123	950	200	2983	929	172	531	237	200	560	251
v/s Ratio Prot	0.04	c0.69		c0.07	0.31		0.05	0.04		c0.07	0.05	
v/s Ratio Perm			0.06			0.10			c0.13			0.03
v/c Ratio	0.54	1.15	0.11	1.24	0.54	0.17	0.97	0.28	0.86	1.20	0.31	0.18
Uniform Delay, d1	53.8	24.0	10.3	56.5	14.9	11.4	56.9	45.3	49.7	56.5	44.7	43.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	75.2	0.0	143.1	0.2	0.1	57.8	1.3	30.6	129.8	1.4	1.6
Delay (s)	56.2	99.2	10.3	199.6	15.1	11.5	114.7	46.6	80.3	186.3	46.1	45.4
Level of Service	E	F	B	F	B	B	F	D	F	F	D	D
Approach Delay (s)		93.4			36.3			81.4			104.1	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	73.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	2689	183	333	2015	130	95	77	307	250	103	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	2923	199	362	2190	141	103	84	334	272	112	54
RTOR Reduction (vph)	0	0	50	0	0	34	0	0	93	0	0	42
Lane Group Flow (vph)	68	2923	149	362	2190	107	103	84	241	272	112	12
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	59.8	59.8	11.0	66.8	66.8	6.9	18.0	18.0	16.0	27.1	27.1
Effective Green, g (s)	4.0	59.8	59.8	11.0	66.8	66.8	6.9	18.0	18.0	16.0	27.1	27.1
Actuated g/C Ratio	0.03	0.50	0.50	0.09	0.55	0.55	0.06	0.15	0.15	0.13	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2517	784	313	2812	875	196	527	236	234	1141	355
v/s Ratio Prot	0.02	c0.57		c0.11	0.43		0.03	0.02		c0.15	0.02	
v/s Ratio Perm			0.09			0.07			c0.15			0.01
v/c Ratio	0.60	1.16	0.19	1.16	0.78	0.12	0.53	0.16	1.02	1.16	0.10	0.03
Uniform Delay, d1	57.6	30.5	17.0	54.9	21.2	12.9	55.4	44.8	51.4	52.4	37.2	36.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	77.4	0.1	100.3	1.4	0.1	2.5	0.6	64.4	109.7	0.2	0.2
Delay (s)	65.7	107.9	17.1	155.2	22.6	13.0	57.9	45.5	115.8	162.1	37.3	36.8
Level of Service	E	F	B	F	C	B	E	D	F	F	D	D
Approach Delay (s)		101.4			39.9			93.0			114.8	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM Average Control Delay	77.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	956	2199	110	247	1382	375	156	807	219	173	733	796
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1039	2390	120	268	1502	408	170	877	238	188	797	865
RTOR Reduction (vph)	0	0	35	0	0	79	0	0	123	0	0	1
Lane Group Flow (vph)	1039	2390	85	268	1502	329	170	877	115	188	797	864
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	36.0	61.0	61.0	10.0	35.0	35.0	6.0	24.0	24.0	9.0	27.0	63.0
Effective Green, g (s)	36.0	61.0	61.0	10.0	35.0	35.0	6.0	24.0	24.0	9.0	27.0	63.0
Actuated g/C Ratio	0.30	0.51	0.51	0.08	0.29	0.29	0.05	0.20	0.20	0.08	0.22	0.52
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1030	2585	805	286	1483	462	172	1017	317	257	796	884
v/s Ratio Prot	c0.30	0.47		0.08	c0.30		c0.05	0.17		0.05	c0.23	c0.29
v/s Ratio Perm			0.05			0.21			0.07			0.25
v/c Ratio	1.01	0.92	0.11	0.94	1.01	0.71	0.99	0.86	0.36	0.73	1.00	0.98
Uniform Delay, d1	42.0	27.4	15.3	54.7	42.5	38.0	57.0	46.4	41.4	54.3	46.5	27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	30.2	6.3	0.1	36.4	26.6	5.2	64.6	9.6	3.2	10.2	32.2	24.6
Delay (s)	72.2	33.6	15.4	91.1	69.1	43.2	121.5	56.0	44.6	64.6	78.7	52.4
Level of Service	E	C	B	F	E	D	F	E	D	E	E	D
Approach Delay (s)		44.3			66.9			62.6			65.0	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	56.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	236	1990	140	109	1651	238	130	255	126	219	385	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	257	2163	152	118	1795	259	141	277	137	238	418	262
RTOR Reduction (vph)	0	0	64	0	0	89	0	0	84	0	0	87
Lane Group Flow (vph)	257	2163	88	118	1795	170	141	277	53	238	418	175
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	37.0	37.0	4.0	33.0	33.0	5.0	17.0	17.0	6.0	18.0	18.0
Effective Green, g (s)	8.0	37.0	37.0	4.0	33.0	33.0	5.0	17.0	17.0	6.0	18.0	18.0
Actuated g/C Ratio	0.10	0.46	0.46	0.05	0.41	0.41	0.06	0.21	0.21	0.08	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	343	2352	732	172	2098	653	215	1081	336	257	1144	356
v/s Ratio Prot	c0.07	c0.43		0.03	0.35		0.04	0.05		c0.07	0.08	
v/s Ratio Perm			0.06			0.11			0.03			c0.11
v/c Ratio	0.75	0.92	0.12	0.69	0.86	0.26	0.66	0.26	0.16	0.93	0.37	0.49
Uniform Delay, d1	35.0	20.1	12.2	37.4	21.3	15.5	36.7	26.2	25.7	36.8	26.2	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	6.4	0.1	10.8	3.7	0.2	7.0	0.6	1.0	36.5	0.9	4.8
Delay (s)	43.7	26.5	12.3	48.2	25.0	15.7	43.7	26.8	26.7	73.3	27.1	31.8
Level of Service	D	C	B	D	C	B	D	C	C	E	C	C
Approach Delay (s)		27.4			25.1			31.1			40.4	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	28.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	896	412	0	0	607	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	974	448	0	0	660	199
RTOR Reduction (vph)	0	271	0	0	0	41
Lane Group Flow (vph)	974	177	0	0	660	158
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	31.6	31.6			40.4	40.4
Effective Green, g (s)	31.6	31.6			40.4	40.4
Actuated g/C Ratio	0.40	0.40			0.50	0.50
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1398	625			1734	799
v/s Ratio Prot	c0.28				c0.19	
v/s Ratio Perm		0.11				0.10
v/c Ratio	0.70	0.28			0.38	0.20
Uniform Delay, d1	20.2	16.5			12.1	10.9
Progression Factor	0.27	0.48			1.00	1.00
Incremental Delay, d2	1.2	0.2			0.6	0.6
Delay (s)	6.6	8.1			12.8	11.4
Level of Service	A	A			B	B
Approach Delay (s)	7.1			0.0	12.5	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	52	65	6	335	136	125	147	0	54	9	0	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3492		1770	3539	1583	1770		1583	1770		1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3492		1770	3539	1583	1770		1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	57	71	7	364	148	136	160	0	59	10	0	432
RTOR Reduction (vph)	0	6	0	0	0	73	0	0	46	0	0	339
Lane Group Flow (vph)	57	72	0	364	148	63	160	0	13	10	0	93
Turn Type	Prot			Prot		Perm	custom		custom	custom		custom
Protected Phases	5	2		1	6							
Permitted Phases						6	4		4	8		8
Actuated Green, G (s)	2.1	9.2		13.3	20.4	20.4	9.5		9.5	9.5		9.5
Effective Green, g (s)	2.1	9.2		13.3	20.4	20.4	9.5		9.5	9.5		9.5
Actuated g/C Ratio	0.05	0.21		0.30	0.46	0.46	0.22		0.22	0.22		0.22
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	84	730		535	1641	734	382		342	382		342
v/s Ratio Prot	0.03	0.02		c0.21	c0.04							
v/s Ratio Perm						0.04	c0.09		0.01	0.01		0.06
v/c Ratio	0.68	0.10		0.68	0.09	0.09	0.42		0.04	0.03		0.27
Uniform Delay, d1	20.6	14.1		13.5	6.6	6.6	14.9		13.6	13.6		14.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	19.6	0.1		3.6	0.0	0.1	0.7		0.0	0.0		0.4
Delay (s)	40.2	14.1		17.0	6.6	6.6	15.6		13.7	13.6		14.8
Level of Service	D	B		B	A	A	B		B	B		B
Approach Delay (s)		25.1			12.5			15.1			14.8	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	44.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	26	286	193	41	175	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	311	210	45	190	165

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	28	311	254	355
Volume Left (vph)	28	0	0	190
Volume Right (vph)	0	311	45	0
Hadj (s)	0.53	-0.67	-0.07	0.14
Departure Headway (s)	6.7	5.4	5.3	5.4
Degree Utilization, x	0.05	0.47	0.38	0.53
Capacity (veh/h)	511	613	637	640
Control Delay (s)	8.8	12.0	11.5	14.3
Approach Delay (s)	11.7		11.5	14.3
Approach LOS	B		B	B

Intersection Summary			
Delay	12.7		
HCM Level of Service	B		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Polk/Sierra

Cycle (sec):	100	Critical Vol./Cap.(X):	0.509
Loss Time (sec):	0	Average Delay (sec/veh):	12.6
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk									Dante							
Approach:	North Bound			South Bound			East Bound			West Bound							
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign							
Rights:	Include			Include			Include			Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0					
Lanes:	1 0	0 1	0	1 0	1 0	1	1 0	0 1	0	1 0	1 0	1					
Volume Module:																	
Base Vol:	52	237	23	60	189	28	54	104	70	40	65	70					
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Initial Bse:	52	237	23	60	189	28	54	104	70	40	65	70					
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92					
PHF Volume:	57	258	25	65	205	30	59	113	76	43	71	76					
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0					
Reduced Vol:	57	258	25	65	205	30	59	113	76	43	71	76					
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
FinalVolume:	57	258	25	65	205	30	59	113	76	43	71	76					
Saturation Flow Module:																	
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Lanes:	1.00	0.91	0.09	1.00	1.00	1.00	1.00	0.60	0.40	1.00	1.00	1.00					
Final Sat.:	506	506	49	471	508	557	475	318	214	439	468	514					
Capacity Analysis Module:																	
Vol/Sat:	0.11	0.51	0.51	0.14	0.40	0.05	0.12	0.36	0.36	0.10	0.15	0.15					
Crit Moves:		****			****				****		****						
Delay/Veh:	10.3	14.8	14.8	11.1	13.7	9.1	10.8	12.2	12.2	11.1	11.0	10.2					
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
AdjDel/Veh:	10.3	14.8	14.8	11.1	13.7	9.1	10.8	12.2	12.2	11.1	11.0	10.2					
LOS by Move:	B	B	B	B	B	A	B	B	B	B	B	B					
ApproachDel:	14.0			12.7			11.9			10.7							
Delay Adj:	1.00			1.00			1.00			1.00							
ApprAdjDel:	14.0			12.7			11.9			10.7							
LOS by Appr:	B			B			B			B							
AllWayAvgQ:	0.1	0.9	0.9	0.1	0.6	0.1	0.1	0.5	0.5	0.1	0.2	0.1					

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	4	7	10	4	190	8	507	0	62	260	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	4	8	11	4	207	9	551	0	67	283	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	931	998	295	996	1010	276	307			551		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	931	998	295	996	1010	276	307			551		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	48	98	99	94	98	71	99			93		
cM capacity (veh/h)	147	225	702	183	221	722	1251			1015		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	76	4	8	11	4	207	9	276	276	0	67	307
Volume Left	76	0	0	11	0	0	9	0	0	0	67	0
Volume Right	0	0	8	0	0	207	0	0	0	0	0	24
cSH	147	225	702	183	221	722	1251	1700	1700	1700	1015	1700
Volume to Capacity	0.52	0.02	0.01	0.06	0.02	0.29	0.01	0.16	0.16	0.00	0.07	0.18
Queue Length 95th (ft)	63	1	1	5	2	30	1	0	0	0	5	0
Control Delay (s)	53.0	21.3	10.2	25.9	21.6	12.0	7.9	0.0	0.0	0.0	8.8	0.0
Lane LOS	F	C	B	D	C	B	A				A	
Approach Delay (s)	47.8			12.8			0.1				1.6	
Approach LOS	E			B								

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	110	203	529	164	138	208
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	120	221	575	178	150	226

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	340	575	178	150	226
Volume Left (vph)	0	575	0	150	0
Volume Right (vph)	221	0	0	0	226
Hadj (s)	-0.36	0.53	0.03	0.53	-0.67
Departure Headway (s)	6.1	6.8	6.3	7.7	6.5
Degree Utilization, x	0.58	1.09	0.31	0.32	0.41
Capacity (veh/h)	578	524	559	455	538
Control Delay (s)	17.0	90.4	11.0	13.2	12.8
Approach Delay (s)	17.0	71.6		12.9	
Approach LOS	C	F		B	

Intersection Summary			
Delay	43.9		
HCM Level of Service	E		
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	49	185	8	4	125	261	2	5	4	561	12	169
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	201	9	4	136	284	2	5	4	610	13	184

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	154	109	140	284	12	807
Volume Left (vph)	53	0	4	0	2	610
Volume Right (vph)	0	9	0	284	4	184
Hadj (s)	0.21	-0.02	0.05	-0.67	-0.15	0.05
Departure Headway (s)	7.4	7.2	7.0	6.3	7.1	5.8
Degree Utilization, x	0.32	0.22	0.27	0.50	0.02	1.30
Capacity (veh/h)	478	492	503	564	472	614
Control Delay (s)	12.6	10.9	11.4	14.2	10.2	166.8
Approach Delay (s)	11.9		13.3		10.2	166.8
Approach LOS	B		B		B	F

Intersection Summary			
Delay	95.2		
HCM Level of Service	F		
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.456
Loss Time (sec):	0	Average Delay (sec/veh):	12.8
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk									Dante					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1 0 1			1 0 1 0 1			1 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	185	12	20	103	14	52	19	232	40	28	324	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	185	12	20	103	14	52	19	232	40	28	324	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	201	13	22	112	15	57	21	252	43	30	352	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	201	13	22	112	15	57	21	252	43	30	352	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	201	13	22	112	15	57	21	252	43	30	352	35
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	441	462	508	425	447	491	447	962	526	463	1001	547
Capacity Analysis Module:												
Vol/Sat:	0.46	0.03	0.04	0.26	0.03	0.12	0.05	0.26	0.08	0.07	0.35	0.06
Crit Moves:	****			****				****			****	
Delay/Veh:	16.3	10.2	9.6	13.2	10.4	10.3	10.6	12.1	9.6	10.6	13.1	9.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.3	10.2	9.6	13.2	10.4	10.3	10.6	12.1	9.6	10.6	13.1	9.3
LOS by Move:	C	B	A	B	B	B	B	B	A	B	B	A
ApproachDel:	15.4			12.1			11.7			12.6		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	15.4			12.1			11.7			12.6		
LOS by Appr:	C			B			B			B		
AllWayAvgQ:	0.7	0.0	0.0	0.3	0.0	0.1	0.0	0.3	0.1	0.1	0.5	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	893	81	104	545	95	49	432	82	86	461	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3461		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	971	88	113	592	103	53	470	89	93	501	75
RTOR Reduction (vph)	0	0	40	0	15	0	0	0	46	0	0	43
Lane Group Flow (vph)	185	971	48	113	680	0	53	470	43	93	501	32
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	13.9	47.0	47.0	6.0	39.1		3.2	16.0	16.0	5.0	17.8	17.8
Effective Green, g (s)	13.9	47.0	47.0	6.0	39.1		3.2	16.0	16.0	5.0	17.8	17.8
Actuated g/C Ratio	0.15	0.52	0.52	0.07	0.43		0.04	0.18	0.18	0.06	0.20	0.20
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	273	973	827	118	1504		63	629	281	98	700	313
v/s Ratio Prot	0.10	c0.52		c0.06	0.20		0.03	0.13		c0.05	c0.14	
v/s Ratio Perm			0.03						0.03			0.02
v/c Ratio	0.68	1.00	0.06	0.96	0.45		0.84	0.75	0.15	0.95	0.72	0.10
Uniform Delay, d1	35.9	21.5	10.6	41.9	17.9		43.1	35.1	31.3	42.4	33.7	29.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.5	28.1	0.0	68.8	0.2		60.8	4.8	0.3	73.5	3.5	0.1
Delay (s)	42.5	49.6	10.6	110.7	18.1		104.0	39.9	31.5	115.9	37.2	29.7
Level of Service	D	D	B	F	B		F	D	C	F	D	C
Approach Delay (s)		45.8			31.1			44.2			47.3	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	42.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	61	29	11	4	18	73	8	348	6	49	186	26
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	66	32	12	4	20	79	9	378	7	53	202	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	793	711	202	732	733	378	230			385		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	793	711	202	732	733	378	230			385		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	91	99	99	94	88	99			95		
cM capacity (veh/h)	248	340	839	296	330	668	1337			1174		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	110	103	387	7	255	28
Volume Left	66	4	9	0	53	0
Volume Right	12	79	0	7	0	28
cSH	293	536	1337	1700	1174	1700
Volume to Capacity	0.37	0.19	0.01	0.00	0.05	0.02
Queue Length 95th (ft)	42	18	0	0	4	0
Control Delay (s)	24.5	13.3	0.2	0.0	2.0	0.0
Lane LOS	C	B	A		A	
Approach Delay (s)	24.5	13.3	0.2		1.8	
Approach LOS	C	B				

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	902	488	568	841	75	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	980	530	617	914	82	290
RTOR Reduction (vph)	0	178	0	0	0	249
Lane Group Flow (vph)	980	352	617	914	82	41
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	55.0	55.0	36.0	95.0	17.0	17.0
Effective Green, g (s)	55.0	55.0	36.0	95.0	17.0	17.0
Actuated g/C Ratio	0.46	0.46	0.30	0.79	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	854	726	531	2802	251	224
v/s Ratio Prot	c0.53		c0.35	0.26	c0.05	
v/s Ratio Perm		0.22				0.03
v/c Ratio	1.15	0.48	1.16	0.33	0.33	0.18
Uniform Delay, d1	32.5	22.6	42.0	3.5	46.3	45.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	80.0	0.5	92.1	0.1	3.4	1.8
Delay (s)	112.5	23.1	134.1	3.6	49.8	47.2
Level of Service	F	C	F	A	D	D
Approach Delay (s)	81.1			56.2	47.8	
Approach LOS	F			E	D	

Intersection Summary			
HCM Average Control Delay	66.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (vph)	119	1038	1153	260	145	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	1128	1253	283	158	276
RTOR Reduction (vph)	0	0	0	138	0	217
Lane Group Flow (vph)	129	1128	1253	145	158	59
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	8.7	51.0	38.3	38.3	16.0	16.0
Effective Green, g (s)	8.7	51.0	38.3	38.3	16.0	16.0
Actuated g/C Ratio	0.12	0.68	0.51	0.51	0.21	0.21
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	205	1267	1807	808	378	338
v/s Ratio Prot	0.07	c0.61	0.35		c0.09	
v/s Ratio Perm				0.09		0.04
v/c Ratio	0.63	0.89	0.69	0.18	0.42	0.17
Uniform Delay, d1	31.6	9.7	13.9	9.9	25.5	24.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	8.2	1.2	0.1	3.4	1.1
Delay (s)	37.5	17.9	15.1	10.0	28.9	25.2
Level of Service	D	B	B	A	C	C
Approach Delay (s)		19.9	14.1		26.5	
Approach LOS		B	B		C	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	36	1010	39	370	1124	189	225	398	32	17	302	527
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1098	42	402	1222	205	245	433	35	18	328	573
RTOR Reduction (vph)	0	0	19	0	0	83	0	0	25	0	0	306
Lane Group Flow (vph)	39	1098	23	402	1222	122	245	433	10	18	328	267
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	3.6	35.6	35.6	25.0	57.0	57.0	15.0	31.4	31.4	2.0	18.4	18.4
Effective Green, g (s)	3.6	35.6	35.6	25.0	57.0	57.0	15.0	31.4	31.4	2.0	18.4	18.4
Actuated g/C Ratio	0.03	0.32	0.32	0.23	0.52	0.52	0.14	0.29	0.29	0.02	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	58	1145	512	402	1834	820	241	1010	452	32	592	265
v/s Ratio Prot	0.02	c0.31		c0.23	0.35		c0.14	0.12		0.01	0.09	
v/s Ratio Perm			0.01			0.08			0.01			c0.17
v/c Ratio	0.67	0.96	0.05	1.00	0.67	0.15	1.02	0.43	0.02	0.56	0.55	1.01
Uniform Delay, d1	52.6	36.5	25.5	42.5	19.5	13.8	47.5	32.0	28.3	53.6	42.0	45.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.6	17.4	0.0	44.9	0.9	0.1	62.3	1.3	0.1	20.7	3.7	56.8
Delay (s)	79.2	53.9	25.6	87.4	20.4	13.9	109.8	33.3	28.3	74.2	45.7	102.6
Level of Service	E	D	C	F	C	B	F	C	C	E	D	F
Approach Delay (s)		53.7			34.4			59.4			81.7	
Approach LOS		D			C			E			F	

Intersection Summary			
HCM Average Control Delay	52.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	1212	74	121	1149	94	171	230	64	243	696	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	1317	80	132	1249	102	186	250	70	264	757	158
RTOR Reduction (vph)	0	0	56	0	0	71	0	0	51	0	0	112
Lane Group Flow (vph)	112	1317	24	132	1249	31	186	250	19	264	757	46
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	18.0	18.0	3.2	18.0	18.0	5.3	16.5	16.5	6.3	17.5	17.5
Effective Green, g (s)	3.2	18.0	18.0	3.2	18.0	18.0	5.3	16.5	16.5	6.3	17.5	17.5
Actuated g/C Ratio	0.05	0.30	0.30	0.05	0.30	0.30	0.09	0.28	0.28	0.10	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	183	1526	475	183	1526	475	303	973	435	360	1032	462
v/s Ratio Prot	0.03	c0.26		c0.04	0.25		0.05	0.07		c0.08	c0.21	
v/s Ratio Perm			0.02			0.02			0.01			0.03
v/c Ratio	0.61	0.86	0.05	0.72	0.82	0.06	0.61	0.26	0.04	0.73	0.73	0.10
Uniform Delay, d1	27.8	19.8	14.9	28.0	19.5	15.0	26.4	17.0	16.0	26.0	19.1	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	5.3	0.0	13.1	3.5	0.1	3.7	0.6	0.2	7.5	4.6	0.4
Delay (s)	33.7	25.1	15.0	41.1	23.0	15.0	30.0	17.6	16.2	33.6	23.8	15.9
Level of Service	C	C	B	D	C	B	C	B	B	C	C	B
Approach Delay (s)		25.2			24.1			22.0			24.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	251	1448	101	144	957	59	181	408	384	279	510	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	273	1574	110	157	1040	64	197	443	417	303	554	439
RTOR Reduction (vph)	0	0	62	0	0	46	0	0	113	0	0	112
Lane Group Flow (vph)	273	1574	48	157	1040	18	197	443	304	303	554	327
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	24.0	24.0	4.0	20.0	20.0	5.0	19.0	19.0	7.0	21.0	21.0
Effective Green, g (s)	8.0	24.0	24.0	4.0	20.0	20.0	5.0	19.0	19.0	7.0	21.0	21.0
Actuated g/C Ratio	0.11	0.34	0.34	0.06	0.29	0.29	0.07	0.27	0.27	0.10	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	392	1743	543	196	1453	452	245	961	430	343	1062	475
v/s Ratio Prot	c0.08	c0.31		0.05	0.20		0.06	0.13		c0.09	0.16	
v/s Ratio Perm			0.03			0.01			0.19			c0.21
v/c Ratio	0.70	0.90	0.09	0.80	0.72	0.04	0.80	0.46	0.71	0.88	0.52	0.69
Uniform Delay, d1	29.8	21.9	15.6	32.6	22.4	18.1	32.0	21.2	23.0	31.1	20.3	21.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3	7.0	0.1	20.5	1.7	0.0	17.2	1.6	9.4	22.5	1.8	7.9
Delay (s)	35.1	28.9	15.7	53.1	24.2	18.1	49.2	22.8	32.4	53.6	22.2	29.5
Level of Service	D	C	B	D	C	B	D	C	C	D	C	C
Approach Delay (s)		29.0			27.4			31.5			32.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	1590	146	156	1076	67	201	537	266	148	417	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	1728	159	170	1170	73	218	584	289	161	453	170
RTOR Reduction (vph)	0	0	98	0	0	46	0	0	114	0	0	113
Lane Group Flow (vph)	133	1728	61	170	1170	27	218	584	175	161	453	57
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	23.8	23.8	4.0	23.8	23.8	5.0	16.2	16.2	5.0	16.2	16.2
Effective Green, g (s)	4.0	23.8	23.8	4.0	23.8	23.8	5.0	16.2	16.2	5.0	16.2	16.2
Actuated g/C Ratio	0.06	0.37	0.37	0.06	0.37	0.37	0.08	0.25	0.25	0.08	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	211	1862	580	211	1862	580	264	882	395	264	882	395
v/s Ratio Prot	0.04	c0.34		c0.05	0.23		c0.06	c0.17		0.05	0.13	
v/s Ratio Perm			0.04			0.02			0.11			0.04
v/c Ratio	0.63	0.93	0.10	0.81	0.63	0.05	0.83	0.66	0.44	0.61	0.51	0.14
Uniform Delay, d1	29.8	19.8	13.6	30.1	17.0	13.3	29.6	21.9	20.6	29.1	21.0	19.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.0	8.6	0.1	19.6	0.7	0.0	18.6	3.9	3.6	4.0	2.1	0.8
Delay (s)	35.8	28.4	13.7	49.8	17.6	13.3	48.2	25.8	24.2	33.0	23.1	19.8
Level of Service	D	C	B	D	B	B	D	C	C	C	C	B
Approach Delay (s)		27.7			21.3			29.9			24.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1469	35	139	502	0	20	0	412	161	31	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.89	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3163	
Flt Permitted		1.00	1.00	0.95	1.00		0.68		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1263		1583	1770	3163	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1597	38	151	546	0	22	0	448	175	34	83
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	155	0	62	0
Lane Group Flow (vph)	0	1597	27	151	546	0	22	0	293	175	55	0
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		35.8	35.8	8.0	47.8		19.0		19.0	19.0	19.0	
Effective Green, g (s)		35.8	35.8	8.0	47.8		19.0		19.0	19.0	19.0	
Actuated g/C Ratio		0.48	0.48	0.11	0.64		0.25		0.25	0.25	0.25	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1694	758	189	2262		321		402	450	803	
v/s Ratio Prot		c0.45		c0.09	0.15						0.02	
v/s Ratio Perm			0.02				0.02		c0.18	0.10		
v/c Ratio		0.94	0.04	0.80	0.24		0.07		0.73	0.39	0.07	
Uniform Delay, d1		18.5	10.3	32.6	5.8		21.2		25.5	23.1	21.2	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		11.1	0.0	20.5	0.1		0.1		6.5	2.5	0.2	
Delay (s)		29.6	10.4	53.2	5.8		21.3		32.0	25.6	21.3	
Level of Service		C	B	D	A		C		C	C	C	
Approach Delay (s)		29.1			16.1			31.5			23.9	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	344	1096	0	0	563	298	262	15	487	179	0	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.87	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1473	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.57		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1473	1504	2054		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	374	1191	0	0	612	324	285	16	529	195	0	229
RTOR Reduction (vph)	0	0	0	0	0	177	0	83	83	0	0	188
Lane Group Flow (vph)	374	1191	0	0	612	147	256	205	203	195	0	41
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	21.0	42.5			17.5	17.5	18.0	18.0	18.0	16.0		16.0
Effective Green, g (s)	21.0	42.5			17.5	17.5	18.0	18.0	18.0	16.0		16.0
Actuated g/C Ratio	0.24	0.48			0.20	0.20	0.20	0.20	0.20	0.18		0.18
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	420	1700			700	313	342	300	306	371		286
v/s Ratio Prot	c0.21	0.34			c0.17		c0.15	0.14				
v/s Ratio Perm						0.09			0.14	c0.09		0.03
v/c Ratio	0.89	0.70			0.87	0.47	0.75	0.68	0.66	0.53		0.14
Uniform Delay, d1	32.6	18.0			34.4	31.4	33.1	32.6	32.5	32.8		30.5
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	20.3	1.3			11.7	1.1	13.9	12.0	10.8	5.2		1.1
Delay (s)	53.0	19.3			46.2	32.5	47.1	44.6	43.3	38.1		31.6
Level of Service	D	B			D	C	D	D	D	D		C
Approach Delay (s)		27.4			41.4			44.9			34.5	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM Average Control Delay	35.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	88.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	NWT	NWR	SWL	SWR
Lane Configurations						
Volume (vph)	98	35	14	585	1515	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00	1.00	0.97	1.00
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)		1796	1863	1583	3433	1583
Flt Permitted		0.79	1.00	1.00	0.95	1.00
Satd. Flow (perm)		1464	1863	1583	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	38	15	636	1647	161
RTOR Reduction (vph)	0	0	0	402	0	30
Lane Group Flow (vph)	0	145	15	234	1647	131
Turn Type	Perm			Perm		custom
Protected Phases		6	2			
Permitted Phases	6			2	8	8
Actuated Green, G (s)		44.1	44.1	44.1	67.9	67.9
Effective Green, g (s)		44.1	44.1	44.1	67.9	67.9
Actuated g/C Ratio		0.37	0.37	0.37	0.57	0.57
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		538	685	582	1943	896
v/s Ratio Prot			0.01			
v/s Ratio Perm		0.10		c0.15	c0.48	0.08
v/c Ratio		0.27	0.02	0.40	0.85	0.15
Uniform Delay, d1		26.6	24.2	28.2	21.7	12.3
Progression Factor		1.00	0.50	4.10	0.62	0.47
Incremental Delay, d2		1.2	0.1	2.0	0.3	0.0
Delay (s)		27.9	12.1	117.3	13.8	5.8
Level of Service		C	B	F	B	A
Approach Delay (s)		27.9	114.9		13.1	
Approach LOS		C	F		B	

Intersection Summary			
HCM Average Control Delay	39.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	88	1172	693	0	0	1655
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0			4.0
Lane Util. Factor	1.00	0.88	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1770	2787	1863			1863
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1770	2787	1863			1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	1274	753	0	0	1799
RTOR Reduction (vph)	0	363	0	0	0	0
Lane Group Flow (vph)	96	911	753	0	0	1799
Turn Type		Perm				
Protected Phases	2		4			8
Permitted Phases		2				
Actuated Green, G (s)	28.0	28.0	84.0			84.0
Effective Green, g (s)	28.0	28.0	84.0			84.0
Actuated g/C Ratio	0.23	0.23	0.70			0.70
Clearance Time (s)	4.0	4.0	4.0			4.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	413	650	1304			1304
v/s Ratio Prot	0.05		0.40			c0.97
v/s Ratio Perm		c0.33				
v/c Ratio	0.23	1.40	0.58			1.38
Uniform Delay, d1	37.3	46.0	9.1			18.0
Progression Factor	1.00	1.00	1.16			1.16
Incremental Delay, d2	1.3	190.1	0.5			173.7
Delay (s)	38.6	236.1	11.0			194.4
Level of Service	D	F	B			F
Approach Delay (s)	222.3		11.0			194.4
Approach LOS	F		B			F

Intersection Summary			
HCM Average Control Delay	169.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	621	202	201	106	199	217	149	1580	75	111	1337	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	675	220	218	115	216	236	162	1717	82	121	1453	530
RTOR Reduction (vph)	0	0	92	0	0	141	0	0	34	0	0	188
Lane Group Flow (vph)	675	220	126	115	216	95	162	1717	48	121	1453	342
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			
Actuated Green, G (s)	27.4	32.5	32.5	7.8	12.9	12.9	8.5	51.8	51.8	11.9	55.2	27.4
Effective Green, g (s)	27.4	32.5	32.5	7.8	12.9	12.9	8.5	51.8	51.8	11.9	55.2	27.4
Actuated g/C Ratio	0.23	0.27	0.27	0.06	0.11	0.11	0.07	0.43	0.43	0.10	0.46	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	784	958	429	223	380	170	243	2195	683	176	1628	361
v/s Ratio Prot	0.20	0.06		0.03	c0.06		0.05	c0.34		0.07	c0.41	c0.22
v/s Ratio Perm			0.08			0.06			0.03			
v/c Ratio	0.86	0.23	0.29	0.52	0.57	0.56	0.67	0.78	0.07	0.69	0.89	0.95
Uniform Delay, d1	44.5	34.0	34.7	54.3	50.9	50.8	54.4	29.3	20.0	52.3	29.7	45.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.71	0.57	0.78	0.61	1.31
Incremental Delay, d2	9.6	0.1	0.4	2.0	2.0	3.9	0.6	0.3	0.0	9.6	7.2	31.1
Delay (s)	54.0	34.1	35.0	56.3	52.9	54.8	53.9	20.9	11.3	50.3	25.4	90.7
Level of Service	D	C	D	E	D	D	D	C	B	D	C	F
Approach Delay (s)		46.4			54.4			23.2			43.2	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	38.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #1 Weber/Herndon
******************************************************************************
Average Delay (sec/veh):      0.9       Worst Case Level Of Service: C[ 22.2]
******************************************************************************
Street Name:              Weber                            Herndon
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  1! 0  0    0  1  2  0  1    0  1  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0   148     0    0     0     0 1818   248    22 1589     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0   148     0    0     0     0 1818   248    22 1589     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0    0   161     0    0     0     0 1976   270    24 1727     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0   161     0    0     0     0 1976   270    24 1727     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9   7.5  6.5   6.9 xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3   3.5  4.0   3.3 xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   659  2434 4021   432  xxxx xxxx xxxxx  2246 xxxx xxxxx
Potent Cap.: xxxx xxxx   411    17    3   577  xxxx xxxx xxxxx   233 xxxx xxxxx
Move Cap.:   xxxx xxxx   411     9    3   577  xxxx xxxx xxxxx   233 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.39  0.00 0.00  0.00  xxxx xxxx  xxxx  0.10 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   1.8  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.3 xxxx xxxxx
Control Del:xxxxx xxxx  19.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx  22.2 xxxx xxxxx
LOS by Move:    *    *     C     *    *     *     *    *     *     C    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx   0.3 xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.2 xxxx xxxxx  22.2 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     A    *     *     C    *     *
ApproachDel:      19.3           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         C                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	1180	546	380	790	188	544	154	345	224	147	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	1283	593	413	859	204	591	167	375	243	160	277
RTOR Reduction (vph)	0	0	95	0	0	137	0	0	228	0	0	187
Lane Group Flow (vph)	261	1283	498	413	859	67	591	167	147	243	160	90
Turn Type	Prot		pm+ov	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.5	35.0	64.1	17.9	39.4	39.4	29.1	38.3	38.3	12.8	22.0	22.0
Effective Green, g (s)	13.5	35.0	64.1	17.9	39.4	39.4	29.1	38.3	38.3	12.8	22.0	22.0
Actuated g/C Ratio	0.11	0.29	0.53	0.15	0.33	0.33	0.24	0.32	0.32	0.11	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	386	1483	846	512	1670	520	833	595	505	366	342	290
v/s Ratio Prot	0.08	c0.25	0.14	c0.12	0.17		c0.17	0.09		0.07	c0.09	
v/s Ratio Perm			0.17			0.04			0.09			0.06
v/c Ratio	0.68	0.87	0.59	0.81	0.51	0.13	0.71	0.28	0.29	0.66	0.47	0.31
Uniform Delay, d1	51.2	40.3	19.0	49.4	32.6	28.3	41.6	30.5	30.7	51.5	43.8	42.4
Progression Factor	0.90	0.71	0.61	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	3.8	0.7	9.0	0.3	0.1	5.1	1.2	1.5	4.5	1.0	0.6
Delay (s)	49.4	32.3	12.3	58.4	32.8	28.4	46.7	31.7	32.1	56.0	44.8	43.0
Level of Service	D	C	B	E	C	C	D	C	C	E	D	D
Approach Delay (s)		28.9			39.4			39.6			48.1	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	36.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	1018	24	79	729	10	14	32	95	6	12	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1654		3433	1634	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	3433	1654		3433	1634	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	1107	26	86	792	11	15	35	103	7	13	58
RTOR Reduction (vph)	0	0	16	0	0	8	0	73	0	0	41	0
Lane Group Flow (vph)	148	1107	10	86	792	3	15	65	0	7	30	0
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	5.4	20.8	20.8	2.3	17.7	17.7	0.7	16.3		0.7	16.3	
Effective Green, g (s)	5.4	20.8	20.8	2.3	17.7	17.7	0.7	16.3		0.7	16.3	
Actuated g/C Ratio	0.10	0.37	0.37	0.04	0.32	0.32	0.01	0.29		0.01	0.29	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	170	1312	587	141	1117	499	43	481		43	475	
v/s Ratio Prot	c0.08	c0.31		0.03	0.22		c0.00	c0.04		0.00	0.02	
v/s Ratio Perm			0.01			0.00						
v/c Ratio	0.87	0.84	0.02	0.61	0.71	0.01	0.35	0.13		0.16	0.06	
Uniform Delay, d1	25.0	16.2	11.2	26.5	16.9	13.2	27.5	14.7		27.4	14.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	35.2	5.1	0.0	7.3	2.1	0.0	4.9	0.6		1.8	0.3	
Delay (s)	60.2	21.3	11.2	33.7	19.0	13.2	32.3	15.3		29.2	14.6	
Level of Service	E	C	B	C	B	B	C	B		C	B	
Approach Delay (s)		25.6			20.4			16.9			15.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	56.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	1710	188	377	1553	202	90	83	261	207	80	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	1651		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	1651		3433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	1859	204	410	1688	220	98	90	284	225	87	29
RTOR Reduction (vph)	0	0	67	0	0	34	0	95	0	0	0	24
Lane Group Flow (vph)	10	1859	137	410	1688	186	98	279	0	225	87	5
Turn Type	Prot		Perm	Prot		Perm	Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	0.8	65.2	65.2	14.0	78.4	78.4	6.9	20.0		8.0	21.1	21.1
Effective Green, g (s)	0.8	65.2	65.2	14.0	78.4	78.4	6.9	20.0		8.0	21.1	21.1
Actuated g/C Ratio	0.01	0.53	0.53	0.11	0.64	0.64	0.06	0.16		0.06	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	22	1873	838	390	2252	1007	192	268		223	319	271
v/s Ratio Prot	0.00	c0.53		c0.12	0.48		0.03	c0.17		c0.07	0.05	
v/s Ratio Perm			0.09			0.12						0.00
v/c Ratio	0.45	0.99	0.16	1.05	0.75	0.18	0.51	1.04		1.01	0.27	0.02
Uniform Delay, d1	61.0	28.8	14.9	54.6	15.6	9.2	56.5	51.6		57.6	44.4	42.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	14.2	18.9	0.1	59.7	1.4	0.1	2.3	65.6		62.6	2.1	0.1
Delay (s)	75.2	47.7	15.0	114.3	17.0	9.3	58.8	117.2		120.2	46.5	42.6
Level of Service	E	D	B	F	B	A	E	F		F	D	D
Approach Delay (s)		44.6			33.5			105.0			94.8	
Approach LOS		D			C			F			F	

Intersection Summary			
HCM Average Control Delay	48.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	123.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	480	1519	175	103	1588	523	190	550	65	571	488	355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	522	1651	190	112	1726	568	207	598	71	621	530	386
RTOR Reduction (vph)	0	0	72	0	0	214	0	0	40	0	0	170
Lane Group Flow (vph)	522	1651	118	112	1726	354	207	598	31	621	530	216
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	15.0	41.1	41.1	6.9	33.0	33.0	8.0	18.0	18.0	18.0	28.0	28.0
Effective Green, g (s)	15.0	41.1	41.1	6.9	33.0	33.0	8.0	18.0	18.0	18.0	28.0	28.0
Actuated g/C Ratio	0.15	0.41	0.41	0.07	0.33	0.33	0.08	0.18	0.18	0.18	0.28	0.28
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	515	2090	651	237	1678	522	275	637	285	618	991	443
v/s Ratio Prot	c0.15	0.32		0.03	c0.34		0.06	c0.17		c0.18	0.15	
v/s Ratio Perm			0.07			0.22			0.02			0.14
v/c Ratio	1.01	0.79	0.18	0.47	1.03	0.68	0.75	0.94	0.11	1.00	0.53	0.49
Uniform Delay, d1	42.5	25.7	18.7	44.8	33.5	28.9	45.0	40.5	34.3	41.0	30.5	30.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	43.1	2.1	0.1	1.5	29.6	3.5	11.1	23.4	0.8	37.4	2.1	3.8
Delay (s)	85.6	27.8	18.9	46.3	63.1	32.4	56.1	63.9	35.1	78.4	32.6	33.8
Level of Service	F	C	B	D	E	C	E	E	D	E	C	C
Approach Delay (s)		39.8			55.1			59.7			51.4	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM Average Control Delay	49.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	2144	1	4	2206	66	2	0	4	66	1	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3008		3433	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.76	1.00		0.76	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	2736	3008		2728	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	2330	1	4	2398	72	2	0	4	72	1	16
RTOR Reduction (vph)	0	0	0	0	0	25	0	3	0	0	0	14
Lane Group Flow (vph)	4	2330	1	4	2398	47	2	1	0	72	1	2
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		6
Actuated Green, G (s)	0.7	28.2	28.2	0.7	28.2	28.2	6.6	6.6		6.6	6.6	6.6
Effective Green, g (s)	0.7	28.2	28.2	0.7	28.2	28.2	6.6	6.6		6.6	6.6	6.6
Actuated g/C Ratio	0.01	0.59	0.59	0.01	0.59	0.59	0.14	0.14		0.14	0.14	0.14
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	51	3019	940	51	3019	940	380	418		379	259	220
v/s Ratio Prot	c0.00	0.46		0.00	c0.47			0.00			0.00	
v/s Ratio Perm			0.00			0.03	0.00			c0.03		0.00
v/c Ratio	0.08	0.77	0.00	0.08	0.79	0.05	0.01	0.00		0.19	0.00	0.01
Uniform Delay, d1	23.1	7.2	3.9	23.1	7.4	4.0	17.6	17.6		18.1	17.6	17.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	1.3	0.0	0.7	1.5	0.0	0.0	0.0		0.2	0.0	0.0
Delay (s)	23.7	8.5	3.9	23.7	8.9	4.1	17.6	17.6		18.3	17.6	17.7
Level of Service	C	A	A	C	A	A	B	B		B	B	B
Approach Delay (s)		8.5			8.8			17.6			18.2	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	47.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	1780	398	484	1923	63	370	96	414	28	85	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3442		1770	3522		1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.68	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	1770	3442		1770	3522		1262	1863	1583	1220	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	1935	433	526	2090	68	402	104	450	30	92	75
RTOR Reduction (vph)	0	16	0	0	2	0	0	0	212	0	0	56
Lane Group Flow (vph)	72	2352	0	526	2156	0	402	104	239	30	92	19
Turn Type	Prot			Prot			Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	5.0	55.0		23.0	73.0		30.0	30.0	30.0	30.0	30.0	30.0
Effective Green, g (s)	5.0	55.0		23.0	73.0		30.0	30.0	30.0	30.0	30.0	30.0
Actuated g/C Ratio	0.04	0.46		0.19	0.61		0.25	0.25	0.25	0.25	0.25	0.25
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	74	1578		339	2143		316	466	396	305	466	396
v/s Ratio Prot	0.04	c0.68		c0.30	0.61			0.06			0.05	
v/s Ratio Perm							c0.32		0.15	0.02		0.01
v/c Ratio	0.97	1.49		1.55	1.01		1.27	0.22	0.60	0.10	0.20	0.05
Uniform Delay, d1	57.4	32.5		48.5	23.5		45.0	35.7	39.7	34.6	35.5	34.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	94.8	224.2		262.4	20.9		145.0	1.1	6.6	0.6	0.9	0.2
Delay (s)	152.2	256.7		310.9	44.4		190.0	36.9	46.4	35.2	36.4	34.4
Level of Service	F	F		F	D		F	D	D	D	D	C
Approach Delay (s)		253.6			96.6			105.7			35.5	
Approach LOS		F			F			F			D	

Intersection Summary			
HCM Average Control Delay	157.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	125.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	231	2011	158	332	2253	390	204	248	254	278	233	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	251	2186	172	361	2449	424	222	270	276	302	253	383
RTOR Reduction (vph)	0	0	13	0	0	85	0	0	86	0	0	82
Lane Group Flow (vph)	251	2186	159	361	2449	339	222	270	190	302	253	301
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	7.0	65.0	65.0	11.0	69.0	69.0	7.0	18.0	18.0	10.0	21.0	21.0
Effective Green, g (s)	7.0	65.0	65.0	11.0	69.0	69.0	7.0	18.0	18.0	10.0	21.0	21.0
Actuated g/C Ratio	0.06	0.54	0.54	0.09	0.57	0.57	0.06	0.15	0.15	0.08	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	200	1917	857	315	2035	910	200	531	237	286	619	277
v/s Ratio Prot	0.07	0.62		c0.11	c0.69		0.06	0.08		c0.09	0.07	
v/s Ratio Perm			0.10			0.21			0.12			c0.19
v/c Ratio	1.25	1.14	0.19	1.15	1.20	0.37	1.11	0.51	0.80	1.06	0.41	1.09
Uniform Delay, d1	56.5	27.5	14.0	54.5	25.5	13.8	56.5	46.9	49.3	55.0	44.0	49.5
Progression Factor	1.00	1.00	1.00	0.76	1.17	2.09	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	148.9	70.0	0.1	69.5	92.0	0.0	96.2	3.5	24.2	68.7	2.0	79.5
Delay (s)	205.4	97.5	14.1	111.1	121.9	28.9	152.7	50.4	73.5	123.7	46.0	129.0
Level of Service	F	F	B	F	F	C	F	D	E	F	D	F
Approach Delay (s)		102.4			108.5			88.3			104.9	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	103.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	2285	183	303	2889	308	190	144	464	214	152	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	1770	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	2484	199	329	3140	335	207	157	504	233	165	178
RTOR Reduction (vph)	0	0	59	0	0	58	0	0	93	0	0	54
Lane Group Flow (vph)	112	2484	140	329	3140	277	207	157	411	233	165	124
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	55.0	55.0	11.0	62.0	62.0	11.2	24.0	24.0	14.0	26.8	26.8
Effective Green, g (s)	4.0	55.0	55.0	11.0	62.0	62.0	11.2	24.0	24.0	14.0	26.8	26.8
Actuated g/C Ratio	0.03	0.46	0.46	0.09	0.52	0.52	0.09	0.20	0.20	0.12	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	114	2331	726	315	2627	818	320	708	317	207	1136	354
v/s Ratio Prot	0.03	0.49		c0.10	c0.62		0.06	0.04		c0.13	0.03	
v/s Ratio Perm			0.09			0.18			c0.26			c0.08
v/c Ratio	0.98	1.07	0.19	1.04	1.20	0.34	0.65	0.22	1.30	1.13	0.15	0.35
Uniform Delay, d1	58.0	32.5	19.3	54.5	29.0	17.0	52.5	40.2	48.0	53.0	37.4	39.3
Progression Factor	1.22	0.63	0.41	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.0	30.6	0.0	62.8	91.9	0.2	4.5	0.7	155.1	100.4	0.3	2.7
Delay (s)	91.9	51.1	8.0	117.3	120.9	17.2	56.9	40.9	203.1	153.4	37.7	42.0
Level of Service	F	D	A	F	F	B	E	D	F	F	D	D
Approach Delay (s)		49.6			111.4			138.9			85.8	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	91.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	975	1865	72	275	2235	217	178	894	186	309	840	1075
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1060	2027	78	299	2429	236	193	972	202	336	913	1168
RTOR Reduction (vph)	0	0	27	0	0	54	0	0	157	0	0	1
Lane Group Flow (vph)	1060	2027	51	299	2429	182	193	972	45	336	913	1167
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	30.0	59.2	59.2	12.8	42.0	42.0	6.0	23.0	23.0	9.0	26.0	56.0
Effective Green, g (s)	30.0	59.2	59.2	12.8	42.0	42.0	6.0	23.0	23.0	9.0	26.0	56.0
Actuated g/C Ratio	0.25	0.49	0.49	0.11	0.35	0.35	0.05	0.19	0.19	0.08	0.22	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	858	2509	781	366	1780	554	172	975	303	257	767	792
v/s Ratio Prot	0.31	0.40		0.09	c0.48		0.06	0.19		c0.10	0.26	c0.37
v/s Ratio Perm			0.03			0.11			0.03			0.37
v/c Ratio	1.24	0.81	0.07	0.82	1.36	0.33	1.12	1.00	0.15	1.31	1.19	1.47
Uniform Delay, d1	45.0	25.6	15.9	52.5	39.0	28.6	57.0	48.5	40.4	55.5	47.0	32.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	116.0	2.0	0.0	13.2	167.8	0.3	105.2	28.1	1.0	163.5	98.4	220.2
Delay (s)	161.0	27.6	16.0	65.6	206.8	29.0	162.2	76.6	41.4	219.0	145.4	252.2
Level of Service	F	C	B	E	F	C	F	E	D	F	F	F
Approach Delay (s)		72.0			178.4			83.5			207.2	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM Average Control Delay	138.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	124.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	1871	363	180	1643	261	222	628	97	287	810	496
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	293	2034	395	196	1786	284	241	683	105	312	880	539
RTOR Reduction (vph)	0	0	143	0	0	87	0	0	83	0	0	103
Lane Group Flow (vph)	293	2034	252	196	1786	197	241	683	22	312	880	436
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	8.0	37.0	37.0	6.0	35.0	35.0	7.0	18.9	18.9	12.1	24.0	24.0
Effective Green, g (s)	8.0	37.0	37.0	6.0	35.0	35.0	7.0	18.9	18.9	12.1	24.0	24.0
Actuated g/C Ratio	0.09	0.41	0.41	0.07	0.39	0.39	0.08	0.21	0.21	0.13	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	305	2091	651	229	1978	616	267	1068	332	462	1356	422
v/s Ratio Prot	c0.09	c0.40		0.06	0.35		c0.07	0.13		0.09	0.17	
v/s Ratio Perm			0.16			0.12			0.01			c0.28
v/c Ratio	0.96	0.97	0.39	0.86	0.90	0.32	0.90	0.64	0.07	0.68	0.65	1.03
Uniform Delay, d1	40.8	26.0	18.6	41.6	25.9	19.2	41.2	32.4	28.5	37.1	29.3	33.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.8	13.8	0.4	25.5	6.2	0.3	30.8	2.9	0.4	3.9	2.4	52.8
Delay (s)	81.7	39.8	19.0	67.0	32.1	19.5	72.0	35.4	28.9	41.0	31.7	85.8
Level of Service	F	D	B	E	C	B	E	D	C	D	C	F
Approach Delay (s)		41.3			33.6			43.3			50.2	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	41.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	824	768	0	0	629	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	1.00			0.97	1.00
Frt	1.00	0.85			1.00	0.85
Flt Protected	1.00	1.00			0.95	1.00
Satd. Flow (prot)	3539	1583			3433	1583
Flt Permitted	1.00	1.00			0.95	1.00
Satd. Flow (perm)	3539	1583			3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	896	835	0	0	684	67
RTOR Reduction (vph)	0	520	0	0	0	30
Lane Group Flow (vph)	896	315	0	0	684	37
Turn Type		Perm				Perm
Protected Phases	4				2	
Permitted Phases		4				2
Actuated Green, G (s)	45.2	45.2			66.8	66.8
Effective Green, g (s)	45.2	45.2			66.8	66.8
Actuated g/C Ratio	0.38	0.38			0.56	0.56
Clearance Time (s)	4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	1333	596			1911	881
v/s Ratio Prot	c0.25				c0.20	
v/s Ratio Perm		0.20				0.02
v/c Ratio	0.67	0.53			0.36	0.04
Uniform Delay, d1	31.2	29.1			14.7	12.1
Progression Factor	0.74	2.60			1.00	1.00
Incremental Delay, d2	0.8	0.5			0.5	0.1
Delay (s)	23.9	76.1			15.3	12.2
Level of Service	C	E			B	B
Approach Delay (s)	49.0			0.0	15.0	
Approach LOS	D			A	B	

Intersection Summary			
HCM Average Control Delay	38.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	147	265	12	184	374	359	300	0	135	35	0	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00		1.00	1.00		1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	1770	3516		1770	3539	1583	1770		1583	1770		1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	1770	3516		1770	3539	1583	1770		1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	160	288	13	200	407	390	326	0	147	38	0	84
RTOR Reduction (vph)	0	6	0	0	0	277	0	0	103	0	0	59
Lane Group Flow (vph)	160	295	0	200	407	113	326	0	44	38	0	25
Turn Type	Prot			Prot		Perm	custom		custom	custom		custom
Protected Phases	5	2		1	6							
Permitted Phases						6	4		4	8		8
Actuated Green, G (s)	5.9	11.3		7.1	12.5	12.5	12.8		12.8	12.8		12.8
Effective Green, g (s)	5.9	11.3		7.1	12.5	12.5	12.8		12.8	12.8		12.8
Actuated g/C Ratio	0.14	0.26		0.16	0.29	0.29	0.30		0.30	0.30		0.30
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	242	920		291	1024	458	524		469	524		469
v/s Ratio Prot	0.09	0.08		c0.11	c0.11							
v/s Ratio Perm						0.07	c0.18		0.03	0.02		0.02
v/c Ratio	0.66	0.32		0.69	0.40	0.25	0.62		0.09	0.07		0.05
Uniform Delay, d1	17.7	12.9		17.0	12.3	11.7	13.1		11.0	10.9		10.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	6.6	0.2		6.6	0.3	0.3	2.3		0.1	0.1		0.0
Delay (s)	24.3	13.1		23.6	12.6	12.0	15.4		11.1	11.0		10.9
Level of Service	C	B		C	B	B	B		B	B		B
Approach Delay (s)		17.0			14.6			14.1			10.9	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	43.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	49	89	76	27	151	84
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	97	83	29	164	91

Direction, Lane #	SE 1	SE 2	NW 1	NE 1
Volume Total (vph)	53	97	112	255
Volume Left (vph)	53	0	0	164
Volume Right (vph)	0	97	29	0
Hadj (s)	0.53	-0.67	-0.12	0.16
Departure Headway (s)	5.9	4.7	4.5	4.6
Degree Utilization, x	0.09	0.13	0.14	0.32
Capacity (veh/h)	576	715	765	756
Control Delay (s)	8.3	7.2	8.2	9.8
Approach Delay (s)	7.6		8.2	9.8
Approach LOS	A		A	A

Intersection Summary			
Delay	8.8		
HCM Level of Service	A		
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Polk/Sierra

Cycle (sec):	100	Critical Vol./Cap.(X):	0.598
Loss Time (sec):	0	Average Delay (sec/veh):	14.1
Optimal Cycle:	0	Level Of Service:	B

Street Name:	Polk									Dante							
Approach:	North Bound			South Bound			East Bound			West Bound							
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign							
Rights:	Include			Include			Include			Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0					
Lanes:	1 0	0 1	0	1 0	1 0	1	1 0	0 1	0	1 0	1 0	1					
Volume Module:																	
Base Vol:	53	276	25	99	302	52	35	51	12	12	66	80					
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Initial Bse:	53	276	25	99	302	52	35	51	12	12	66	80					
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92					
PHF Volume:	58	300	27	108	328	57	38	55	13	13	72	87					
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0					
Reduced Vol:	58	300	27	108	328	57	38	55	13	13	72	87					
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
FinalVolume:	58	300	27	108	328	57	38	55	13	13	72	87					
Saturation Flow Module:																	
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Lanes:	1.00	0.92	0.08	1.00	1.00	1.00	1.00	0.81	0.19	1.00	1.00	1.00					
Final Sat.:	525	532	48	504	549	604	440	386	91	425	453	498					
Capacity Analysis Module:																	
Vol/Sat:	0.11	0.56	0.56	0.21	0.60	0.09	0.09	0.14	0.14	0.03	0.16	0.17					
Crit Moves:		****			****			****				****					
Delay/Veh:	10.1	15.8	15.8	11.4	17.8	9.0	10.9	10.7	10.7	10.8	11.3	10.6					
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
AdjDel/Veh:	10.1	15.8	15.8	11.4	17.8	9.0	10.9	10.7	10.7	10.8	11.3	10.6					
LOS by Move:	B	C	C	B	C	A	B	B	B	B	B	B					
ApproachDel:	14.9			15.4			10.8			10.9							
Delay Adj:	1.00			1.00			1.00			1.00							
ApprAdjDel:	14.9			15.4			10.8			10.9							
LOS by Appr:	B			C			B			B							
AllWayAvgQ:	0.1	1.1	1.1	0.3	1.3	0.1	0.1	0.1	0.1	0.0	0.2	0.2					

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	57	3	3	14	5	81	7	429	0	68	556	48
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	62	3	3	15	5	88	8	466	0	74	604	52
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1117	1260	630	1239	1286	233	657			466		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1117	1260	630	1239	1286	233	657			466		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	53	98	99	87	96	89	99			93		
cM capacity (veh/h)	131	156	424	121	151	769	927			1091		

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2
Volume Total	62	3	3	15	5	88	8	233	233	0	74	657
Volume Left	62	0	0	15	0	0	8	0	0	0	74	0
Volume Right	0	0	3	0	0	88	0	0	0	0	0	52
cSH	131	156	424	121	151	769	927	1700	1700	1700	1091	1700
Volume to Capacity	0.47	0.02	0.01	0.13	0.04	0.11	0.01	0.14	0.14	0.00	0.07	0.39
Queue Length 95th (ft)	54	2	1	10	3	10	1	0	0	0	5	0
Control Delay (s)	54.7	28.5	13.6	38.9	29.7	10.3	8.9	0.0	0.0	0.0	8.5	0.0
Lane LOS	F	D	B	E	D	B	A				A	
Approach Delay (s)	51.5			15.3			0.1				0.9	
Approach LOS	F			C								

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	304	175	371	298	150	741
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	330	190	403	324	163	805

Direction, Lane #	SE 1	NW 1	NW 2	NE 1	NE 2
Volume Total (vph)	521	403	324	163	805
Volume Left (vph)	0	403	0	163	0
Volume Right (vph)	190	0	0	0	805
Hadj (s)	-0.19	0.53	0.03	0.53	-0.67
Departure Headway (s)	7.1	8.2	7.7	8.2	7.0
Degree Utilization, x	1.03	0.92	0.69	0.37	1.56
Capacity (veh/h)	510	431	460	435	519
Control Delay (s)	73.9	52.0	24.9	14.7	280.0
Approach Delay (s)	73.9	39.9		235.4	
Approach LOS	F	E		F	

Intersection Summary			
Delay	133.3		
HCM Level of Service	F		
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	148	169	16	8	223	665	24	31	9	367	23	125
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	161	184	17	9	242	723	26	34	10	399	25	136

Direction, Lane #	SE 1	SE 2	NW 1	NW 2	NE 1	SW 1
Volume Total (vph)	253	109	251	723	70	560
Volume Left (vph)	161	0	9	0	26	399
Volume Right (vph)	0	17	0	723	10	136
Hadj (s)	0.35	-0.08	0.05	-0.67	0.02	0.03
Departure Headway (s)	8.3	7.9	7.5	6.8	8.7	6.9
Degree Utilization, x	0.59	0.24	0.53	1.37	0.17	1.07
Capacity (veh/h)	419	447	472	539	401	517
Control Delay (s)	21.3	12.2	17.4	198.2	13.4	87.0
Approach Delay (s)	18.6		151.6		13.4	87.0
Approach LOS	C		F		B	F

Intersection Summary			
Delay	103.8		
HCM Level of Service	F		
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #1 Dante/Bullard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.811
Loss Time (sec):	0	Average Delay (sec/veh):	23.9
Optimal Cycle:	0	Level Of Service:	C

Street Name:	Polk									Dante							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	0	1	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1
Volume Module:																									
Base Vol:	62	7	10	36	15	30	112	753	62	62	537	48
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	62	7	10	36	15	30	112	753	62	62	537	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	67	8	11	39	16	33	122	818	67	67	584	52
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	8	11	39	16	33	122	818	67	67	584	52
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	67	8	11	39	16	33	122	818	67	67	584	52
Saturation Flow Module:																									
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	325	338	361	324	338	362	462	1010	542	431	938	502
Capacity Analysis Module:																									
Vol/Sat:	0.21	0.02	0.03	0.12	0.05	0.09	0.26	0.81	0.12	0.16	0.62	0.10
Crit Moves:	****			****				****			****	
Delay/Veh:	14.9	12.3	11.6	13.8	12.5	12.2	12.8	32.7	9.9	12.1	21.2	10.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	14.9	12.3	11.6	13.8	12.5	12.2	12.8	32.7	9.9	12.1	21.2	10.3
LOS by Move:	B	B	B	B	B	B	B	D	A	B	C	B
ApproachDel:	14.2			13.0			28.8			19.5		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	14.2			13.0			28.8			19.5		
LOS by Appr:	B			B			D			C		
AllWayAvgQ:	0.2	0.0	0.0	0.1	0.0	0.1	0.3	3.2	0.1	0.2	1.4	0.1

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	192	734	80	165	901	72	196	839	160	83	829	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	3500		1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	3500		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	209	798	87	179	979	78	213	912	174	90	901	130
RTOR Reduction (vph)	0	0	43	0	6	0	0	0	42	0	0	37
Lane Group Flow (vph)	209	798	44	179	1051	0	213	912	132	90	901	93
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	14.3	39.0	39.0	10.0	34.7		11.0	29.0	29.0	6.0	24.0	24.0
Effective Green, g (s)	14.3	39.0	39.0	10.0	34.7		11.0	29.0	29.0	6.0	24.0	24.0
Actuated g/C Ratio	0.14	0.39	0.39	0.10	0.35		0.11	0.29	0.29	0.06	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	253	727	617	177	1215		195	1026	459	106	849	380
v/s Ratio Prot	c0.12	c0.43		c0.10	0.30		c0.12	0.26		0.05	c0.25	
v/s Ratio Perm			0.03						0.08			0.06
v/c Ratio	0.83	1.10	0.07	1.01	0.87		1.09	0.89	0.29	0.85	1.06	0.24
Uniform Delay, d1	41.6	30.5	19.1	45.0	30.5		44.5	34.0	27.5	46.6	38.0	30.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.3	63.3	0.0	70.6	6.6		91.3	9.5	0.3	43.4	48.5	0.3
Delay (s)	60.9	93.8	19.2	115.6	37.1		135.8	43.5	27.8	89.9	86.5	31.0
Level of Service	E	F	B	F	D		F	D	C	F	F	C
Approach Delay (s)		81.6			48.5			56.5			80.3	
Approach LOS		F			D			E			F	

Intersection Summary			
HCM Average Control Delay	65.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	41	25	6	4	60	121	12	261	2	105	310	59
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	27	7	4	65	132	13	284	2	114	337	64
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1039	877	337	895	939	284	401			286		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1039	877	337	895	939	284	401			286		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	65	89	99	98	73	83	99			91		
cM capacity (veh/h)	126	258	705	220	238	755	1158			1276		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	201	297	2	451	64
Volume Left	45	4	13	0	114	0
Volume Right	7	132	0	2	0	64
cSH	167	429	1158	1700	1276	1700
Volume to Capacity	0.47	0.47	0.01	0.00	0.09	0.04
Queue Length 95th (ft)	55	61	1	0	7	0
Control Delay (s)	44.2	20.6	0.5	0.0	2.7	0.0
Lane LOS	E	C	A		A	
Approach Delay (s)	44.2	20.6	0.5		2.4	
Approach LOS	E	C				

Intersection Summary				
Average Delay	8.2			
Intersection Capacity Utilization	64.6%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	835	275	503	1478	122	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	908	299	547	1607	133	317
RTOR Reduction (vph)	0	109	0	0	0	275
Lane Group Flow (vph)	908	190	547	1607	133	42
Turn Type		Perm	Prot			Perm
Protected Phases	4		3	8	2	
Permitted Phases		4				2
Actuated Green, G (s)	56.0	56.0	36.0	96.0	16.0	16.0
Effective Green, g (s)	56.0	56.0	36.0	96.0	16.0	16.0
Actuated g/C Ratio	0.47	0.47	0.30	0.80	0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	869	739	531	2831	236	211
v/s Ratio Prot	c0.49		c0.31	0.45	c0.08	
v/s Ratio Perm		0.12				0.03
v/c Ratio	1.04	0.26	1.03	0.57	0.56	0.20
Uniform Delay, d1	32.0	19.4	42.0	4.4	48.7	46.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	42.9	0.2	47.0	0.3	9.4	2.1
Delay (s)	74.9	19.6	89.0	4.7	58.1	48.4
Level of Service	E	B	F	A	E	D
Approach Delay (s)	61.2			26.1	51.3	
Approach LOS	E			C	D	

Intersection Summary			
HCM Average Control Delay	40.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (vph)	89	1084	1646	364	318	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	1178	1789	396	346	334
RTOR Reduction (vph)	0	0	0	171	0	110
Lane Group Flow (vph)	97	1178	1789	225	346	224
Turn Type	Prot			Perm		Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Actuated Green, G (s)	4.8	54.2	45.4	45.4	17.8	17.8
Effective Green, g (s)	4.8	54.2	45.4	45.4	17.8	17.8
Actuated g/C Ratio	0.06	0.68	0.57	0.57	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	106	1262	2008	898	394	352
v/s Ratio Prot	0.05	c0.63	0.51		c0.20	
v/s Ratio Perm				0.14		0.14
v/c Ratio	0.92	0.93	0.89	0.25	0.88	0.64
Uniform Delay, d1	37.4	11.3	15.1	8.7	30.1	28.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	60.6	12.5	5.4	0.1	23.2	8.5
Delay (s)	98.0	23.8	20.6	8.9	53.2	36.6
Level of Service	F	C	C	A	D	D
Approach Delay (s)		29.5	18.4		45.1	
Approach LOS		C	B		D	

Intersection Summary			
HCM Average Control Delay	26.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	45	1313	52	432	1752	292	225	332	45	46	637	892
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	1427	57	470	1904	317	245	361	49	50	692	970
RTOR Reduction (vph)	0	0	18	0	0	80	0	0	32	0	0	219
Lane Group Flow (vph)	49	1427	39	470	1904	237	245	361	17	50	692	751
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Actuated Green, G (s)	3.2	35.8	35.8	21.0	53.6	53.6	11.0	40.9	40.9	6.3	36.2	36.2
Effective Green, g (s)	3.2	35.8	35.8	21.0	53.6	53.6	11.0	40.9	40.9	6.3	36.2	36.2
Actuated g/C Ratio	0.03	0.30	0.30	0.18	0.45	0.45	0.09	0.34	0.34	0.05	0.30	0.30
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	47	1056	472	310	1581	707	162	1206	540	93	1068	478
v/s Ratio Prot	0.03	c0.40		c0.27	0.54		c0.14	0.10		0.03	0.20	
v/s Ratio Perm			0.02			0.15			0.01			c0.47
v/c Ratio	1.04	1.35	0.08	1.52	1.20	0.34	1.51	0.30	0.03	0.54	0.65	1.57
Uniform Delay, d1	58.4	42.1	30.3	49.5	33.2	21.6	54.5	29.0	26.3	55.4	36.4	41.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	144.0	164.4	0.1	248.2	98.2	0.3	259.7	0.6	0.1	5.9	3.0	266.7
Delay (s)	202.4	206.5	30.4	297.7	131.4	21.9	314.2	29.7	26.5	61.3	39.4	308.6
Level of Service	F	F	C	F	F	C	F	C	C	E	D	F
Approach Delay (s)		199.8			147.6			135.8			192.6	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	170.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	114.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	291	1712	153	205	1818	253	277	813	151	473	456	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	316	1861	166	223	1976	275	301	884	164	514	496	185
RTOR Reduction (vph)	0	0	49	0	0	72	0	0	57	0	0	136
Lane Group Flow (vph)	316	1861	117	223	1976	203	301	884	107	514	496	49
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	10.0	43.0	43.0	8.0	41.0	41.0	13.8	27.0	27.0	16.0	29.2	29.2
Effective Green, g (s)	10.0	43.0	43.0	8.0	41.0	41.0	13.8	27.0	27.0	16.0	29.2	29.2
Actuated g/C Ratio	0.09	0.39	0.39	0.07	0.37	0.37	0.13	0.25	0.25	0.15	0.27	0.27
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	312	1988	619	250	1895	590	431	869	389	499	939	420
v/s Ratio Prot	0.09	c0.37		0.06	c0.39		0.09	c0.25		c0.15	0.14	
v/s Ratio Perm			0.07			0.13			0.07			0.03
v/c Ratio	1.01	0.94	0.19	0.89	1.04	0.34	0.70	1.02	0.27	1.03	0.53	0.12
Uniform Delay, d1	50.0	32.2	22.0	50.6	34.5	24.8	46.1	41.5	33.6	47.0	34.5	30.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	54.2	9.0	0.1	30.2	32.8	0.4	4.9	34.9	1.7	48.2	2.1	0.6
Delay (s)	104.2	41.2	22.2	80.8	67.3	25.2	51.0	76.4	35.3	95.2	36.6	31.2
Level of Service	F	D	C	F	E	C	D	E	D	F	D	C
Approach Delay (s)		48.3			63.8			65.7			61.0	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	58.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	576	1531	222	310	1548	170	432	666	189	221	446	424
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	626	1664	241	337	1683	185	470	724	205	240	485	461
RTOR Reduction (vph)	0	0	101	0	0	87	0	0	112	0	0	218
Lane Group Flow (vph)	626	1664	140	337	1683	98	470	724	93	240	485	243
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.0	34.1	34.1	10.9	29.0	29.0	12.0	22.0	22.0	7.0	17.0	17.0
Effective Green, g (s)	16.0	34.1	34.1	10.9	29.0	29.0	12.0	22.0	22.0	7.0	17.0	17.0
Actuated g/C Ratio	0.18	0.38	0.38	0.12	0.32	0.32	0.13	0.24	0.24	0.08	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	610	1927	600	416	1639	510	458	865	387	267	668	299
v/s Ratio Prot	c0.18	0.33		0.10	c0.33		c0.14	c0.20		0.07	0.14	
v/s Ratio Perm			0.09			0.06			0.06			0.15
v/c Ratio	1.03	0.86	0.23	0.81	1.03	0.19	1.03	0.84	0.24	0.90	0.73	0.81
Uniform Delay, d1	37.0	25.8	19.0	38.5	30.5	22.0	39.0	32.3	27.3	41.1	34.3	35.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	43.3	4.3	0.2	11.3	29.4	0.2	48.9	9.5	1.5	29.8	6.8	20.9
Delay (s)	80.3	30.1	19.2	49.9	59.9	22.2	87.9	41.8	28.8	71.0	41.1	55.8
Level of Service	F	C	B	D	E	C	F	D	C	E	D	E
Approach Delay (s)		41.5			55.2			55.4			52.9	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM Average Control Delay	50.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	222	1462	128	267	1594	114	238	357	130	134	489	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	241	1589	139	290	1733	124	259	388	141	146	532	191
RTOR Reduction (vph)	0	0	82	0	0	56	0	0	107	0	0	131
Lane Group Flow (vph)	241	1589	57	290	1733	68	259	388	34	146	532	60
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.0	26.0	26.0	8.0	28.0	28.0	7.0	18.1	18.1	6.9	18.0	18.0
Effective Green, g (s)	6.0	26.0	26.0	8.0	28.0	28.0	7.0	18.1	18.1	6.9	18.0	18.0
Actuated g/C Ratio	0.08	0.35	0.35	0.11	0.37	0.37	0.09	0.24	0.24	0.09	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	275	1763	549	366	1898	591	320	854	382	316	849	380
v/s Ratio Prot	0.07	0.31		c0.08	c0.34		c0.08	0.11		0.04	c0.15	
v/s Ratio Perm			0.04			0.04			0.02			0.04
v/c Ratio	0.88	0.90	0.10	0.79	0.91	0.11	0.81	0.45	0.09	0.46	0.63	0.16
Uniform Delay, d1	34.1	23.3	16.6	32.7	22.3	15.4	33.3	24.2	22.1	32.3	25.5	22.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	25.3	6.8	0.1	11.2	7.2	0.1	14.0	1.7	0.5	1.1	3.5	0.9
Delay (s)	59.4	30.1	16.7	43.9	29.5	15.5	47.3	26.0	22.5	33.4	29.0	23.4
Level of Service	E	C	B	D	C	B	D	C	C	C	C	C
Approach Delay (s)		32.7			30.7			32.4			28.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1055	65	382	1206	0	51	0	514	153	128	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95		1.00		1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00		1.00		0.85	1.00	0.93	
Flt Protected		1.00	1.00	0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)		3539	1583	1770	3539		1770		1583	1770	3305	
Flt Permitted		1.00	1.00	0.95	1.00		0.58		1.00	0.95	1.00	
Satd. Flow (perm)		3539	1583	1770	3539		1081		1583	1770	3305	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1147	71	415	1311	0	55	0	559	166	139	110
RTOR Reduction (vph)	0	0	28	0	0	0	0	0	371	0	62	0
Lane Group Flow (vph)	0	1147	43	415	1311	0	55	0	188	166	187	0
Turn Type			Perm	Prot			custom		custom	Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)		25.8	25.8	19.3	49.1		17.0		17.0	17.0	17.0	
Effective Green, g (s)		25.8	25.8	19.3	49.1		17.0		17.0	17.0	17.0	
Actuated g/C Ratio		0.35	0.35	0.26	0.66		0.23		0.23	0.23	0.23	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1232	551	461	2345		248		363	406	758	
v/s Ratio Prot		c0.32		c0.23	0.37						0.06	
v/s Ratio Perm			0.03				0.05		c0.12	0.09		
v/c Ratio		0.93	0.08	0.90	0.56		0.22		0.52	0.41	0.25	
Uniform Delay, d1		23.3	16.2	26.5	6.7		23.2		25.0	24.3	23.3	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00	1.00	1.00	
Incremental Delay, d2		12.5	0.1	20.4	0.3		0.5		1.3	3.0	0.8	
Delay (s)		35.8	16.2	46.8	7.0		23.6		26.2	27.3	24.1	
Level of Service		D	B	D	A		C		C	C	C	
Approach Delay (s)		34.6			16.6			26.0			25.4	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	1115	0	0	929	698	589	21	841	200	0	376
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.91	0.95	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00	0.88	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3539	1583	1681	1485	1504	3433		1583
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99	1.00	0.45		1.00
Satd. Flow (perm)	1770	3539			3539	1583	1681	1485	1504	1623		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	1212	0	0	1010	759	640	23	914	217	0	409
RTOR Reduction (vph)	0	0	0	0	0	188	0	37	37	0	0	200
Lane Group Flow (vph)	266	1212	0	0	1010	571	544	484	475	217	0	209
Turn Type	Prot					Perm	Split		Perm	custom		custom
Protected Phases	7	4			8		2	2				
Permitted Phases						8			2	6		6
Actuated Green, G (s)	16.0	55.0			35.0	35.0	37.0	37.0	37.0	16.0		16.0
Effective Green, g (s)	16.0	55.0			35.0	35.0	37.0	37.0	37.0	16.0		16.0
Actuated g/C Ratio	0.13	0.46			0.29	0.29	0.31	0.31	0.31	0.13		0.13
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	236	1622			1032	462	518	458	464	216		211
v/s Ratio Prot	c0.15	0.34			0.29		0.32	c0.33				
v/s Ratio Perm						c0.36			0.32	c0.13		0.13
v/c Ratio	1.13	0.75			0.98	1.24	1.05	1.06	1.02	1.00		0.99
Uniform Delay, d1	52.0	26.8			42.1	42.5	41.5	41.5	41.5	52.0		51.9
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	97.1	1.9			22.7	123.3	53.4	57.6	47.7	62.4		59.3
Delay (s)	149.1	28.7			64.8	165.8	94.9	99.1	89.2	114.4		111.3
Level of Service	F	C			E	F	F	F	F	F		F
Approach Delay (s)		50.4			108.1			94.4			112.4	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	89.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			