DRAFT ENVIRONMENTAL IMPACT REPORT

Parc West Development Project
SCH#2020039061

June 2020

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Development and Resource Management Dept.
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Draft Environmental Impact Report

Parc West Development Project

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Executive Summary

EXECUTIVE SUMMARY

Introduction

This Draft Environmental Impact Report (EIR) has been prepared consistent with the California Environmental Quality Act (CEQA). Its intent is to inform the public, regulatory agencies and the City of Fresno decision makers of the potential environmental impacts the proposed Project would have on environmental factors as specified in the CEQA Guidelines. This EIR, in its entirety, addresses and discloses potential environmental effects associated with construction and operation of the proposed Project, including direct, indirect, and cumulative impacts to the environmental resources identified in the CEQA Guidelines environmental checklist. The City of Fresno is the "Lead Agency" pursuant to CEQA and is responsible for the preparation and distribution of the EIR.

CEQA Process

An Initial Study and Notice of Preparation (IS/NOP) was prepared by the City for the proposed Project. The IS/NOP was properly noticed and circulated pursuant to CEQA Guidelines for public review from March 20, 2020 – April 21, 2020.

The next step in the process is circulation of this EIR which will be distributed to the public for review and comment for at least 45 days. This EIR is organized as follows:

Executive Summary: Summarizes the analysis contained in the EIR.

Chapter 1 – Introduction: Provides a brief introduction to CEQA and the scope/contents of the DEIR.

Chapter 2 – Project Description: Describes the Project in detail. Includes Project location, objectives, environmental setting and regulatory context.

Chapter 3 – Environmental Analysis: Contains the CEQA checklist. Each topic discusses environmental/regulatory setting, Project impact analysis, mitigation measures and conclusions.

Chapter 4 – Cumulative Impacts: Summarizes cumulative impacts discussed in Chapter 3.

Chapter 5 – Alternatives: Describes and evaluates alternatives to the Project. The proposed Project is compared to each alternatives and potential environmental impacts are analyzed.

Chapter 6 – Other CEQA Sections: Describes other required sections such as environmental effects that cannot be avoided, social effects, growth inducement, etc.

Appendices: Following the text of the EIR, several appendices and technical studies have been included as reference material.

Project Location

The proposed Parc West Project is located on approximately 160 acres north of the W. Ashlan alignment and west of N. Grantland Avenue within the City limits of Fresno, CA (See Figures 1 through 3 in Chapter Two – Project Description).

The site was annexed into the City in 2015 and occupies Assessor's Parcel Numbers 512-02-126 and 512-02-150S. The site has historically been used for agricultural purposes. Surrounding land uses are as follows:

Surrounding Land Use and Zoning

Location	Existing Land Use	Roadway
North	Rural residential (outside City limits)	None existing. Planned for W. Gettysburg Ave.
South	Agricultural (almonds) – site of original Westlake project	None existing. Planned for W. Ashlan Ave.
West	Agricultural (outside City limits)	None existing. Planned for N. Garfield Ave.
East	Central Unified School District Complex (football stadium,	N. Grantland Ave.

Most of the Project site is designated by the City of Fresno General Plan as Medium Density Residential (5.0 – 12 D.U./acre). There is an 10-acre portion of the site at the southeast corner of the lot that is zoned and designated Community Commercial, however, the Applicant is

proposing to change this land use from commercial to residential (RS-5) to match the land use designation of the remainder of the 160 acres. See Figure 8 – Existing Zoning.

Much of the land surrounding the Project site is in agricultural production or occupied by rural residential homes and ancillary structures. The CUSD Deran Koligian Education Center is located east of Grantland Avenue and north of Ashlan Avenue proximate to the proposed Project site. Large lot single family homes are located along West Rialto Avenue adjacent to, and north of, the Project site.

Project Description Summary

Parc West will include construction of up to 844 single-family residential units, a 1.819-acre park and installation of a trail system that will connect to the City's existing/future trail network in the area (Project). The Project will be built out in phases, with Phase 1 generating 84 units. The general layout of the Project is shown in Figure 3. Initial phases of the Project are shown in Figure 4 (Phase I - Tract Map #6212) and Figure 5 (Tract Map #6276). Refer to Chapter Two – Project Description for the full description of the Project.

Project Objectives

In accordance with CEQA Guidelines Section 15124(b), the following are the City of Fresno's Project objectives:

- To provide a variety of housing opportunities with a range of densities, styles, sizes and values that will be designed to satisfy existing and future demand for quality housing in the area.
- To provide a sense of community and walkability within the development through the use of street patterns, parks/open space areas, landscaping and other Project amenities.
- To create a successful and financially feasible Project by meeting the housing needs of the area.
- To provide a residential development that assists the City in meeting its General Plan and Housing Element requirements and objectives.

Summary of Environmental Impacts

The IS/NOP determined the Project could have potentially significant impacts (and/or potential areas of controversy) in the following areas:

- Air Quality
- Energy
- Greenhouse Gases / Climate Change
- Hydrology / Water Quality
- Noise
- Public Services
- Transportation
- Utilities

As described in Chapter 3, it was determined that all impacts were either less than significant, or could be mitigated to a less than significant level. Mitigation measures are listed in Table ES-1, Mitigation Monitoring and Reporting Program.

Summary of Project Alternatives

CEQA Guidelines Section 15126.6 requires the consideration of a range of reasonable alternatives to the proposed Project that could feasibly attain most of the objectives of the proposed Project. The following alternatives were considered:

- No Project (site remains vacant and unoccupied)
- No Project (site is developed according to existing Land Use and Zoning designations)
- Increased Project Density (reduced footprint)
- Reduced (50%) Project (same footprint)

Refer to Chapter Five – Alternatives for a description of each alternative and anticipated environmental impacts.

Mitigation Monitoring and Reporting Program

State law requires that a public agency adopt a monitoring program for mitigation measures that have been incorporated into the approved Project to reduce or avoid significant effects on the environment. The purpose of the monitoring program is to ensure compliance with environmental mitigation during Project implementation and operation. Since there are potentially significant impacts requiring mitigation associated with the Project, a Mitigation Monitoring Program will be included in the Project's Final EIR and is included herein on the following pages.

Project Specific Mitigation Measure Monitoring Checklist

This Project Specific Mitigation Monitoring Checklist has been formulated based upon the findings of the Initial Study and Environmental Impact Report for the Parc West Development Project. These Project Specific Mitigation Measures are in addition to the applicable mitigation measures from the City of Fresno MEIR.

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
Agriculture				
Mitigation Measure AG – 1 In order to reduce potential conflicts between urban and agricultural uses, the following measures shall be implemented: • Potential residents shall be notified about possible exposure to agricultural chemicals at the time of purchase / lease of property within the development. • A Right-to-Farm Covenant shall be recorded on each tract map or be made a condition of each tract map to protect continued agricultural practices in the area. • Potential residents shall be informed of the Right-to-Farm Covenant at the time of purchase / lease of property within the development.	Project Applicant	Prior to occupancy	City of Fresno	
Biology				
Mitigation Measure BIO-1: Protection of burrowing owls. 1. Pre-construction surveys should be conducted to determine the presence of nesting birds if ground clearing or construction activities will be initiated during the breeding season (February 15 through September 15). The portion of the project site on which construction is to take place and potential nesting areas within 500 feet of the proposed construction area should be surveyed 14 to 30 days prior to the initiation of construction. Surveys should be performed by a qualified biologist or ornithologist to verify the presence or absence of nesting birds. Construction should not occur within a 500 foot buffer surrounding active nests of raptors or a 250 foot buffer surrounding active nests of migratory birds. If construction within these buffer areas is required or if nests must be removed to allow continuation of	Project Applicant	Prior to ground disturbing activities	City of Fresno	

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
construction, then approval and specific removal methodologies should be obtained from CDFW. 2. If during pre-construction nest surveys, burrowing owls are found to be present, the following measures will be implemented: a. Compensation for the loss of burrowing owl habitat will be negotiated with the responsible wildlife agencies. Appropriate mitigation may include participation in an approved mitigation bank, establishing a conservation easement, or other means acceptable to the responsible agency. b. Exclusion areas will be established around occupied burrows in which no construction activities would occur. During the non-breeding season (September 1 through January 31), the exclusion area would extend 160 feet around any occupied burrows. During the breeding season of burrowing owls (February 1 through August 31), exclusion areas of 250 feet surrounding occupied burrows would be installed. c. If construction must occur within these buffer areas, passive relocation of burrowing owls may be implemented as an alternative, but only during the non-breeding season and only with the concurrence of the CDFW. Passive relocation of burrowing owls would be implemented by a qualified biologist using accepted techniques. Burrows from which owls had been relocated would be excavated using hand tools and under direct supervision of a qualified biologist. d. Compensation for the loss of burrowing owl burrows removed during construction will be negotiated with the responsible wildlife agency. This may require that replacement burrows be constructed on compensation lands.				

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
Mitigation Measure BIO-2: Protection of Swainson's hawks and other raptors (including northern harrier) and migratory birds (including California horned lark). 1. Pre-construction surveys should be conducted to determine the presence of nesting birds if ground clearing or construction activities will be initiated during the breeding season (February 15 through September 15). Potential nesting areas on the project site and potential nesting areas within 500 feet of the site should be surveyed 14 to 30 days prior to the initiation of construction. Surveys should be performed by a qualified biologist to verify the presence or absence of nesting birds. Construction should not occur within a 500 foot buffer surrounding active nests of raptors or a 250 foot buffer surrounding active nests of migratory birds. If construction within these buffer areas is required or if nests must be removed to allow continuation of construction, then approval and specific removal methodologies should be obtained from California Department of Fish and Wildlife. 2. All trees which are suitable for Swainson's hawk nesting that are within 2,640 feet of construction activities should be inspected by a qualified biologist. 3. If potential Swainson's hawk nests are found during the inspection, then surveys should be conducted at the following intensities, depending upon dates of initiation of construction: truction start / Survey period / Number of surveys / Timing uary to 20 h / 1 January to 20 March / 1 / All day				

21 March to 24 March	1 January to 20 March	1	All day				
	21 March to 24 March	Up to 3	Sunrise to 10 am and 4 pm to sunset				
24 March to 5 April	1 January to 20 March	1	All day				
	21 March to 5 April	3	Sunrise to 10 am and 4 pm to sunset				
6 April to 9 April	21 March to 5 April	3	Sunrise to 10 am and 4 pm to sunset				
	6 April to 9 April	Up to 3	Sunrise to 10 am and 4 pm to sunset				
	1 January to 20 March	1 (if all 3 surveys are performed between 6 and 9 April, then this survey need not be conducted)	All day				
10 April to 30 July	21 March to 5 April	3	Sunrise to 10 am and 4 pm to sunset				
	6 April to 20 April	3	Sunrise to 12 pm and 4:30 pm to sunset				

31 July to 15 September	6 to 20 April	3	Sunrise to 12 pm and 4:30 pm to sunset				
	10 to 30 July	3	Sunrise to 12 pm and 4 pm to sunset				

4. If Swainson's hawks are detected to be actively nesting in trees within 2,640 feet of the construction area, construction should not occur within this zone until after young Swainson's hawks have fledged (this usually occurs by early June). The nest should be monitored by a qualified biologist to determine fledging date. According to the *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California* (CDFG 1994), mitigation for foraging habitat is not mandatory for this site because there are no known CNDDB occurrences within 10 miles of the project site. However, if Swainson's hawks are found within the project area, the project site could be considered foraging habitat and compensation for foraging habitat would be required by CDFW at a ratio of 0.75 to 1 (0.75 acre for every 1.0 acre adversely affected). If there are active nests within one mile of the site, then compensation for foraging habitat would be at a ratio of 1:1.

5. If northern harriers or other raptors are found actively nesting within 250 feet of the construction area, construction should be postponed until after young have fledged. The date of fledging should be determined by a qualified biologist. If construction cannot be delayed within this zone, the CDFW should be consulted and alternative protection measures required by the CDFW should be followed.

6. If other nesting birds (particularly non-raptor species listed on the MBTA) are found actively nesting within 250 feet of the construction area, construction should be postponed until after young have fledged. The date of fledging should be determined by a qualified biologist. If construction cannot be delayed within this zone, the CDFW and/or the USFWS should be consulted and alternative

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
protection measures required by the CDFW and/or the USFWS should be followed. **Mitigation Measure BIO-3:** To protect San Joaquin kit foxes and American badgers, the developer shall follow the *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 1999). The measures that are listed below have been excerpted from those guidelines and would protect San Joaquin kit foxes and American badgers from direct mortality and from destruction of active dens and natal or pupping dens. 1. Pre-construction surveys should be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, or any project activity likely to impact the San Joaquin kit fox or American badger. Exclusion zones should be placed around dens in accordance with USFWS Recommendations using the following: 50 foot radius 100 foot radius Den (Occupied and Contact U.S. Fish and Wildlife Service for guidance 50 foot radius If dens must be removed, they should be appropriately monitored and excavated by a trained wildlife biologist. Replacement dens would be required. Destruction of natal dens and other "known" kit fox dens should not occur until authorized by USFWS. 2. Project-related vehicles should observe a 20-mph speed limit in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes and American badgers are most active. Nighttime construction should				

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
be avoided, unless the construction area is appropriately fenced to exclude kit foxes and American badgers. The area within any such fence should be determined to be uninhabited by San Joaquin Kit foxes and American badgers prior to initiation of construction. Off-road traffic outside of designated project areas should be prohibited.				
3. To prevent inadvertent entrapment of kit foxes, American badgers, or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals.				
4. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe, becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.				
5. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in closed containers and removed at least once a week from a construction or Project Site.				

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
6. No firearms should be allowed on the Project Site during the construction phase.				
7. To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets should be permitted on the Project Site.				
8. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restriction deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.				
9. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured, or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.				
10. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status				

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.				
11. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Wildlife (CDFW), and revegetation experts.				
12. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.				
13. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFW immediately in the case of a dead, injured, or entrapped kit fox. The CDFW contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530) 934-9309. The Service should be contacted at the numbers below.				

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
14. The Sacramento Fish and Wildlife Office and CDFW shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFW contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309. 15. New sightings of kit foxes shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below. Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at: Endangered Species Division 2800 Cottage Way, Suite W2605 Sacramento, California 95825-1846 (916) 414-66200 or (916) 414-6600				
Geology / Soils				
Mitigation Measure GEO – 1 The project proponent shall retain a registered geotechnical engineer to prepare a design level geotechnical analysis prior to the issuance of any grading and/or building permit. The design-level analysis shall address site preparation measures and foundation design requirements of the project. The	Project Applicant	Prior to issuance of grading permits	City of Fresno	

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
design-level analysis shall be prepared to the satisfaction of the City of Fresno. Final design-level project plans shall be designed in accordance with the approved geotechnical analysis. This shall include certification of engineered fills and subgrade preparation through monitoring of earthwork and compaction testing by a geotechnical engineer during construction.				
Mitigation Measure GEO – 2 In order to reduce on-site erosion due to project construction and operation, an erosion control plan and Storm Water Pollution Prevention Plan (SWPPP) shall be prepared for the site preparation, construction, and post-construction periods by a registered civil engineer or certified professional. The erosion control plan shall incorporate best management practices consistent with the requirements of the National Pollution Discharge Elimination System (NPDES). The erosion component of the plan must at least meet the requirements of the SWPPP required by the California State Water Resources Control Board. If earth disturbing activities are proposed between October 15 and April 15, these activities shall be limited to the extent feasible to minimize potential erosion related impacts. Additional erosion control measures shall be implemented in consultation with the City of Fresno. Prior to the issuance of any permit, the project proponent shall submit detailed plans to the satisfaction of the City of Fresno. The components of the erosion control plan and SWPPP shall be monitored for effectiveness by City of Fresno. Erosion control measures may include, but not be limited to, the following: a. Limit disturbance of soils and vegetation disturbance removal to the minimum area necessary for access and construction; b. Confine all vehicular traffic associated with construction to the right-of-way of designated access roads; c. Adhere to construction schedules designed to avoid periods of heavy precipitation or high winds;	Project Applicant	Prior to issuance of grading or building permit	City of Fresno	

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
d. Ensure that all exposed soil is provided with temporary drainage and soil protection when construction activity is shut down during the winter periods; and e. Inform construction personnel prior to construction and periodically during construction activities of environmental concerns, pertinent laws and regulations, and elements of the proposed erosion control measures.				
Hazards / Hazardous Materials				
Mitigation Measure HAZ-1: Prior to issuance of grading permits, the project applicant shall retain a qualified consultant to perform testing of the project site soils, in particular those soils on the site that were subject to pesticide use, soils in the vicinity of the diesel fuel storage tank and soils adjacent to the former railroad alignment, in accordance with the California Department of Toxic Substances (DTSC) "Interim Guidance for Sampling Agricultural Properties". The Guidance document provides recommendations for the number of soil samples and methodology based on project size in acres. Soils shall be laboratory tested for organochlorine pesticides and arsenic in accordance with DTSC guidelines. If the testing yields concentrations in excess of acceptable limits for residential and commercial development, the project applicant shall retain a qualified contractor to perform soil remediation in accordance with DTSC guidelines. The soil remediation activities shall be completed prior to grading activities. The applicant shall submit documentation to the City of Fresno demonstrating that soil testing was performed and any necessary remediation was completed as part of the grading permit application.	Project Applicant	Prior to issuance of building permit	City of Fresno	
Mitigation Measure HAZ-2: Irrigation wells that may be dispersed throughout the project site, and any potential onsite domestic wells and septic systems shall be properly abandoned or destroyed in compliance	Project Applicant	Prior to issuance of	City of Fresno	

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
with applicable regulations of the Fresno County Department of Public Health governing water wells and septic systems. Consultation shall occur with the Department of Public Health regarding well and septic system abandonment and inspections. Documentation of wells and septic systems being abandoned or destroyed shall be submitted to the City of Fresno Planning Department prior to construction of proposed uses. If irrigation wells and septic systems are found during construction activities; those activities shall cease until consultation with the County Department of Public Health has occurred to review proper abandonment of those systems.		building permit		
Mitigation Measure HAZ-3: The applicant shall consult with PG&E to determine the location of electric power lines and high-pressure gas transmission lines within the project boundaries. The locations/depths shall be delineated on all grading/development plans. Development plans shall provide for unrestricted utility access and prevent easement encroachments that might impair the safe and reliable maintenance and operation of PG&E facilities. Grading/development plans shall indicate which types of equipment and wheel load limits will be acceptable for work over the gas line. PG&E shall be afforded the opportunity to consult with the developer on project plans. .	Project Applicant	Prior to issuance of building permit	City of Fresno	
Hydrology and Water Quality				
Mitigation Measure HYD - 1: Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation, the Project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ). The SWPPP shall be designed with Best	Project Applicant	Prior to issuance of building permit	City of Fresno	

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
Management Practices (BMPs) that the RWQCB has deemed as effective at reducing erosion, controlling sediment, and managing runoff. These include: covering disturbed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, and permanent seeding. Sediment control BMPs, installing silt fences or placing straw wattles below slopes, installing berms and other temporary run-on and runoff diversions. These BMPs are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. Final selection of BMPs will be subject to approval by City of Fresno and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.				
Mitigation Measure HYD – 2: The Project will implement the City of Fresno Water Conservation Program, including implementation of the State's Water Efficient Landscape Ordinance. The California Water Conservation Act mandates a 20 percent reduction in water usage by 2020. The City will meet the reduction target with measures applicable to new and existing development. Reductions beyond the state mandated 20 percent are possible with the use of building and landscaping water conservation features. The reductions from buildings can be achieved with high efficiency toilets, low-flow faucets, and water-efficient appliances such as dishwashers. Water savings from landscaping would be achieved primarily through the use of drought-tolerant landscaping or xeriscaping.				
Mitigation Measure HYD – 3: The Project proponent shall retain a qualified consultant to prepare a drainage / grading plan prior to the issuance of any grading and/or building permit. The design-level analysis shall be prepared to the satisfaction of the City of Fresno and FMFCD.				
Public Services				

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
Mitigation Measure PUB - 1: The Project Applicant shall pay development impact fees for police, fire, schools, recreation and other public services as determined by the City of Fresno.	Project Applicant	Prior to issuance of building permit	City of Fresno	
Noise				
Mitigation Measure NOI-1: Prior to issuance of building permits for development within the Parc West Development Project site, a detailed acoustical study shall be prepared by a certified professional to document potential impacts to onsite noise-sensitive land uses (as determined by the City of Fresno's General Plan, refer to Table 3.10-6). Potential impacts in exceedance of the City of Fresno's standards including: Maximum Allowable Noise Exposure-Stationary Noise Sources, Maximum Allowable Noise Exposure from Transportation Noise Sources, City of Fresno Incremental Noise Impact Criteria for Noise-Sensitive Uses, and Exterior Noise Standards shall require incorporation of mitigation such as increased setbacks, sound walls, equipment enclosures, site design, and enhanced building materials to reduce impacts to levels below the City of Fresno standards. Development that cannot incorporate mitigation to reduce impacts to acceptable City of Fresno standards shall not be approved.	Project Applicant	Prior to issuance of building permits	City of Fresno	
Mitigation Measure NOI-2: Construction within the project of two story homes along Grantland Avenue shall be prohibited unless a detailed acoustical analysis, prepared by a certified professional, can document compliance with the city's 45 dB DNL standard at the upper floor elevation.				
Mitigation Measure NOI-3: Prior to issuance of building permits for noise-sensitive land uses adjacent to Grantland Avenue, a sound wall shall be constructed to reduce noise levels by 10 db or as determined necessary by the acoustical study required by Mitigation Measure NOI-1.				

Mitigation Measure	Party responsible for Implementing Mitigation	Timing	Party responsible for Monitoring	Verification (name/ date)
Recreation				
Mitigation Measure REC-1: The Project Applicant shall create onsite (or participate in the creation of offsite) equivalent of 3 acres of park space per 1,000 persons, totaling approximately 7.78 acres. This acreage will include the lands associated with the proposed trail on site.	Project Applicant	Prior to issuance of building permits	City of Fresno	
Transportation				
Mitigation Measure TRA-1: The Project shall pay into applicable transportation fee programs. These include a Fresno Major Street Impact Fee (FMSI), a Traffic Signal Mitigation Impact Fee (TSMI) and a Regional Transportation Mitigation Fee (RTMF). The FMSI Fee will be calculated and assessed during the building permit process. The RTMF will be calculated and assessed by Fresno COG.	Project Applicant	Prior to issuance of building permits	City of Fresno	
Mitigation Measure TRA-2: The Project will be responsible for paying its fair share cost percentages and/or constructing the recommended improvements identified in Tables 3.17-13 and 3.17-13a (based on the Cumulative Year 2035 With Project AM Peak-hour impacts at Project-impacted intersections) subject to reimbursement for the costs that are in excess of the Project's equitable responsibility as determined by the City. This will be itemized and enforced through conditions of approval or a development agreement, at the discretion of the City.				

Chapter 1

INTRODUCTION

1.0 INTRODUCTION

This Draft Environmental Impact Report (EIR or Draft EIR) has been prepared on behalf of the City of Fresno (City) in accordance with the California Environmental Quality Act (CEQA). This chapter outlines the purpose of and overall approach to the preparation of the EIR for the proposed Project. The Project Applicant is proposing to develop up to 844 single-family residential units, a neighborhood park and trails on approximately 160 acres at the northwest corner of Ashlan Avenue and Grantland Avenue in the City of Fresno. The proposed Project is more fully described in Chapter Two – Project Description.

An EIR responds to the requirements of CEQA as set forth in Sections 15126, 15175, and 15176 of the CEQA Guidelines. The Planning Commission and City Council will use the EIR during the public review process in order to understand the potential environmental implications associated with implementing the Project.

1.1 Purpose of EIR

The City of Fresno, as Lead Agency, determined that the proposed activities constitute a "project" within the definition of CEQA. The preparation of an EIR is required by CEQA prior to approving any project that may have a significant impact on the environment. For the purposes of CEQA, the term "project" refers to the whole of an action, which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]).

This Draft EIR has been prepared according to CEQA requirements to evaluate the potential environmental impacts associated with the implementation of the proposed Project. The Draft EIR also discusses alternatives to the Project, and proposes mitigation measures that will offset, minimize, or otherwise avoid significant environmental impacts. This Draft EIR has been prepared in accordance with CEQA, California Resources Code Section 21000 et seq.; the Guidelines for the California Environmental Quality Act (California Code of Regulations, Title 14, Chapter 3); and the rules, regulations, and procedures for implementing CEQA as adopted by the City of Fresno.

An EIR must disclose the expected direct and indirect environmental impacts associated with a project, including impacts that cannot be avoided, growth-inducing effects, impacts found not to be significant, and significant cumulative impacts, as well as identify mitigation measures and

alternatives to the proposed project that could reduce or avoid its adverse environmental impacts. CEQA requires government agencies to consider and, where feasible, minimize environmental impacts of proposed development.

1.2 Type of EIR

The State CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR has been prepared as a Project-level EIR pursuant to CEQA Guidelines Section 15161. A Project-level EIR is described in State CEQA Guidelines § 15161 as: "The most common type of EIR (which) examines the environmental impacts of a specific development project. This type of EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation. The project-level analysis considers the broad environmental effects of a proposed project.

1.3 Project Background

The subject site was part of the previously approved "Westlake Development Project" and was analyzed in the Westlake EIR (State Clearinghouse #2007121033) which was certified by the City in 2012. The Westlake Project analyzed approximately 2,600 residential units, 295,000 sq. ft. of commercial space, and a 55-acre man-made lake on 430 acres. Following certification of the Westlake EIR, the Project Applicant (Granville Homes) put the Project on hold. Since that time, the Applicant has scaled down the Project to include only 844 units on 160 acres.

While the environmental impacts of buildout of the subject site was included in the Westlake EIR, this Draft EIR is being prepared independently to assess the environmental impacts associated with the Parc West Project. Where applicable, this Draft EIR refers to some information from the certified Westlake EIR (SCH No. 2007121033). However, due to the lapse in time, changes to the CEQA Guidelines and because of changes in development intensity in the area, only limited areas of the previous environmental analysis remain applicable. These instances are noted within the document. The Westlake EIR and associated documents may be examined at the City of Fresno Development and Resource Management Department, City Hall, 2600 Fresno Street, Room 3043, Fresno, California 93721-3604.

In addition, this EIR also uses information from the City's Master Environmental Impact Report (MEIR) (SCH No. 2012111015) that was prepared and adopted for the Fresno General Plan. Where

mitigation measures or other information from the MEIR are applicable, it has been noted in this Initial Study. Although this document is not tiering off of the MEIR, there is some information in the MEIR that is applicable to the Parc West analysis. These instances are noted within the document. The General Plan MEIR and associated documents may be examined at the City of Fresno Development and Resource Management Department, City Hall, 2600 Fresno Street, Room 3043, Fresno, California 93721-3604.

1.4 Intended Uses of the EIR

The City of Fresno, as the Lead Agency, has prepared this EIR to provide the public and responsible and trustee agencies with an objective analysis of the potential environmental impacts resulting from implementation of the proposed Project. The environmental review process enables interested parties to evaluate the proposed project in terms of its environmental consequences, to examine and recommend methods to eliminate or reduce potential adverse impacts, and to consider a reasonable range of alternatives to the project. While CEQA requires that consideration be given to avoiding adverse environmental effects, the lead agency must balance adverse environmental effects against other public objectives, including the economic and social benefits of a project, in determining whether a project should be approved.

This EIR will be used as the primary environmental document to evaluate all subsequent planning and permitting actions associated with the Project. This EIR may also be used by other agencies within Fresno County, including the Air District, which may use this EIR during the permitting process.

1.5 Proposed Entitlements

In support of the Parc West Project, the Project Applicant is seeking the following entitlements from the City of Fresno:

- General Plan Amendment: Medium Density Residential land use designation (5.0 – 12.0 DU/acre), Traffic Circulation Plan, Parks, Open Space and Trail Network.
- Rezoning: A 10-acre section originally intended for commercial development will be re-zoned RS-5 and will include removal of the previous Westlake Development Project conditions to be replaced with new conditions appropriate for the Parc West Development. The remaining acreage will remain RS-5 and will not require land use designation or zoning changes. However, for these remaining acres, all previous

zoning conditions associated with the Westlake project will also be removed and replaced with conditions specific to the Parc West Project.
- Tentative Tract Map to create "super-pads" for future subdivisions.
- Community Facilities District for maintenance of the public green spaces.
- Grading and building permits.

1.6 Other Agency Involvement and Approvals

The Project will require various regulatory approvals, permits, entitlements and/or coordination with agencies as follows:

- Certification of the EIR by the City of Fresno.
- Compliance with other federal, state and local requirements such as the San Joaquin Valley Air Pollution Control District for a dust control plan and the Regional Water Quality Control Board for a Stormwater Pollution Prevention Plan.
- City of Fresno Department of Public Utilities – Solid Waste
- Fresno Irrigation District
- Fresno Metropolitan Flood Control District
- City of Fresno Fire Department
- City of Fresno Public Works Department
- Central Unified School
- Fresno County Environmental Health

1.7 Environmental Review Process

The review and certification process for the EIR has involved, or will involve, the following general procedural steps:

Notice of Preparation

The City of Fresno circulated an Initial Study and Notice of Preparation (IS/NOP) of an EIR for the proposed project on March 20, 2020 to trustee and responsible agencies, the State Clearinghouse (SCH #2020039061), and the public. One (1) public or agency comment on the IS/NOP related to the EIR analysis was presented or submitted during the public review period.

Written comments provided to the City during the 30-day public review period for the IS/NOP, which ended on April 21, 2020, are presented in Appendix A.

Draft EIR

This document constitutes the Draft EIR. The Draft EIR contains a description of the project, description of the environmental setting, identification of the project's direct and indirect impacts on the environment, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. This Draft EIR identifies issues determined to have no impact or a less than significant impact, and provides detailed analysis of potentially significant and significant impacts. Comments received in response to the NOP were considered in preparing the analysis in this EIR. Upon completion of the Draft EIR, the City of Fresno will file the Notice of Completion (NOC) with the State Clearinghouse of the Governor's Office of Planning and Research to begin the public review period.

Public Notice/Public Review

Concurrent with the NOC, the City of Fresno will provide a public notice of availability for the Draft EIR, and invite comment from the general public, agencies, organizations, and other interested parties. Consistent with CEQA requirements, the review period for this Draft EIR is fortyfive (45) days. Public comment on the Draft EIR will be accepted in written form. All comments or questions regarding the Draft EIR should be addressed to:

Chris Lang, Planner III
City of Fresno
2600 Fresno Street, Room 3043
Fresno, CA 93721

Responses to Comments/Final EIR

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to written comments received during the public review period and to oral comments during such review period.

Entitlement Procedures / Certification of the EIR / Project Consideration

The City of Fresno will review and consider the Final EIR. If the City finds that the Final EIR is "adequate and complete," the City Council may certify the Final EIR in accordance with CEQA. As set forth by CEQA Guidelines Section 15151, the standards of adequacy require an EIR to provide a sufficient degree of analysis to allow decisions to be made regarding the proposed project that intelligently take account of environmental consequences.

Upon review and consideration of the Final EIR, the City Council may take action to approve, revise, or reject the project. A decision to approve the proposed project, for which this EIR identifies significant environmental effects, must be accompanied by written findings in accordance with State CEQA Guidelines Sections 15091 and 15093. A Mitigation Monitoring and Reporting Program (MMRP) would also be adopted in accordance with Public Resources Code Section 21081.6(a) and CEQA Guidelines Section 15097 for mitigation measures that have been incorporated into or imposed upon the project to reduce or avoid significant effects on the environment. The Mitigation Monitoring and Reporting Program will be designed to ensure that these measures are carried out during project implementation, in a manner that is consistent with the EIR.

1.8 Organization and Scope

Sections 15122 through 15132 of the State CEQA Guidelines identify the content requirements for Draft and Final EIRs. An EIR must include a description of the environmental setting, an environmental impact analysis, mitigation measures, alternatives, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. Discussion of the environmental issues addressed in the Draft EIR was established through review of environmental and planning documentation developed for the project, environmental and planning documentation prepared for recent projects located within the City of Fresno, and responses to the Notice of Preparation (NOP). This Draft EIR is organized in the following manner:

Executive Summary

The Executive Summary summarizes the characteristics of the proposed project, known areas of controversy and issues to be resolved, and provides a concise summary matrix of the project's

environmental impacts and possible mitigation measures. This chapter identifies alternatives that reduce or avoid at least one significant environmental effect of the proposed project.

Chapter 1.0 – Introducation

Chapter 1.0 briefly describes the proposed project, the purpose of the environmental evaluation, identifies the lead, trustee, and responsible agencies, summarizes the process associated with preparation and certification of an EIR, identifies the scope and organization of the Draft EIR, and summarizes comments received on the NOP.

Chapter 2.0 – Project Description

Chapter 2.0 provides a detailed description of the proposed project, including the location, intended objectives, background information, the physical and technical characteristics, including the decisions subject to CEQA, subsequent projects and activities, and a list of related agency action requirements.

Chapter 3.0 – Environmental Setting, Impacts and Mitigation Measures

Chapter 3.0 contains an analysis of environmental topic areas as identified below. Each subchapter addressing a topical area is organized as follows:

Environmental Setting. A description of the existing environment as it pertains to the topical area.

Regulatory Setting. A description of the regulatory environment that may be applicable to the project.

Impacts and Mitigation Measures. Identification of the thresholds of significance by which impacts are determined, a description of project-related impacts associated with the environmental topic, identification of appropriate mitigation measures, and a conclusion as to the significance of each impact. The following environmental topics are addressed in this Draft EIR:

- Air Quality
- Energy
- Greenhouse Gas Emissions
- Hydrology and Water Quality

- Noise
- Public Services
- Transportation and Traffic
- Utilities and Services

Chapter 4.0 – Cumulative Impacts

Chapter 4.0 discusses potential cumulative impacts resulting from project implementation. Cumulative impacts can result from the proposed project alone, or together with other projects. A cumulative impact of concern under CEQA occurs when the net result of combined individual impacts compounds or increase other overall environmental impacts.

Chapter 5.0 – Project Alternatives

Chapter 5.0 provides a comparative analysis between the merits of the proposed project and the selected alternatives. State CEQA Guidelines Section 15126.6 requires that an EIR describe a range of reasonable alternatives to the project, which could feasibly attain the basic objectives of the project and avoid and/or lessen any significant environmental effects of the project.

Chapter 6.0 – Other CEQA-Required Topics

Chapter 6.0 evaluates and describes the following CEQA required topics: growth-inducing effects, significant and irreversible effects, significant and unavoidable impacts, substantial adverse effects on protected fish, wildlife, and plant species, substantial adverse effects on human beings, and effects not found to be significant.

Chapter 7.0 – Report Preparers

Chapter 7.0 lists all authors and agencies that assisted in the preparation of the Draft EIR, by name, title, and company or agency affiliation.

Appendices

This section includes the IS/NOP and responses to the IS/NOP as well as technical studies that support the Draft EIR analysis.

1.9 – Summary of Comments Received on the Notice of Preparation

The Notice of Preparation and Initial Study were circulated for public review from March 20, 2020 through April 21, 2020. The City received one (1) comment letter which is included in Appendix A. The letter is summarized as follows:

1. **Native American Heritage Commission:** Commented that the City will need to comply with AB 52 and SB 18 (pertaining to Tribal Consultation).

Chapter 2

PROJECT DESCRIPTION

Project Description

2.1 Project Location and Setting

The proposed Parc West Project is located on approximately 160 acres north of the W. Ashlan alignment and west of N. Grantland Avenue within the City limits of Fresno, CA (See Figures 1 through 3).

The site was annexed into the City in 2015 and occupies Assessor's Parcel Numbers 512-02-126 and 512-02-150S. The site has historically been used for agricultural purposes. Surrounding land uses are as follows:

Surrounding Land Use and Zoning

Location	Existing Land Use	Roadway
North	Rural residential (outside City limits)	None existing. Planned for W. Gettysburg Ave.
South	Agricultural (almonds) – site of original Westlake project	None existing. Planned for W. Ashlan Ave.
West	Agricultural (outside City limits)	None existing. Planned for N. Garfield Ave.
East	Central Unified School District Complex (football stadium,	N. Grantland Ave.

Most of the Project site is designated by the City of Fresno General Plan as Medium Density Residential (5.0 – 12 D.U./acre). There is an 10-acre portion of the site at the southeast corner of the lot that is zoned and designated Community Commercial, however, the Applicant is proposing to change this land use from commercial to residential (RS-5) to match the land use designation of the remainder of the 160 acres. See Figure 8 – Existing Zoning.

Much of the land surrounding the Project site is in agricultural production or occupied by rural residential homes and ancillary structures. The CUSD Deran Koligian Education Center is located east of Grantland Avenue and north of Ashlan Avenue proximate to the proposed Project site. Large lot single family homes are located along West Rialto Avenue adjacent to, and north of, the Project site.

2.2 Project Description

Parc West will include construction of up to 844 single-family residential units, a 1.819-acre park and installation of a trail system that will connect to the City's existing/future trail network in the area. The Project will be built out in phases, with Phase 1 generating 84 units. The general layout of the Project is shown in Figure 3. Initial phases of the Project are shown in Figure 4 (Phase I - Tract Map #6212) and Figure 5 (Tract Map #6276).

Site Circulation

The Project will require the extension of W. Ashlan Avenue and N. Garfield Avenue to intersect and the streets will be required to be improved to City standards. Site access will occur from N. Grantland Avenue and from the proposed W. Ashlan Avenue and N. Garfield Avenue extensions. Preliminary internal road circulation and layout are shown in Figure 6. The Project Applicant will be responsible for construction of the internal roadway system as well as for construction and/or fair share contributions for the roadway improvements that will be required as a result of the Project. See Section 3.17 – Transportation / Traffic for more information pertaining to traffic mitigation.

Infrastructure

The Project will be required to tie into existing infrastructure in the area for sewer, water and storm drain. The Project developer will be required to pay for all improvements related to obtaining these facilities to serve the Project. This includes constructing appropriately sized water mains that will provide adequate water pressure for fire flow and Project water use. The Project will require installation of sewer mains to serve the Project including any sewer easements that will be required by the City.

The Project is proposed to be supported by the City of Fresno's municipal water supply system (see discussion pertaining to water supply in Section 3.10 – Hydrology and the Water Supply Assessment Update that was provided for the Project) and its wastewater collection system (including the Grantland trunk sewer) and wastewater / treatment disposal facilities. The major service public utility is Pacific Gas and Electric. Refer to Section 3.19 – Utilities for further discussion.

The Project has been reviewed by City of Fresno Public Works and specifications pertaining to Project financial responsibilities for accessing City-provided services have been made conditions of Project approval.

Project Schedule

The Project developer intends to begin construction activities in late 2020.

2.3 Project Objectives

In accordance with CEQA Guidelines Section 15124(b), the following are the City of Fresno's Project objectives:

- To provide a variety of housing opportunities with a range of densities, styles, sizes and values that will be designed to satisfy existing and future demand for quality housing in the area.
- To provide a sense of community and walkability within the development through the use of street patterns, parks/open space areas, landscaping and other Project amenities.
- To create a successful and financially feasible Project by meeting the housing needs of the area.
- To provide a residential development that assists the City in meeting its General Plan and Housing Element requirements and objectives.

2.4 Project Alternatives

The following alternatives were considered:

- No Project (site remains vacant and unoccupied)
- No Project (site is developed according to existing Land Use and Zoning designations)
- Increased Project Density (reduced footprint)
- Reduced (50%) Project (same footprint)

Refer to Chapter Five – Alternatives for a description of each alternative and anticipated environmental impacts.

Figure 1
Regional Map

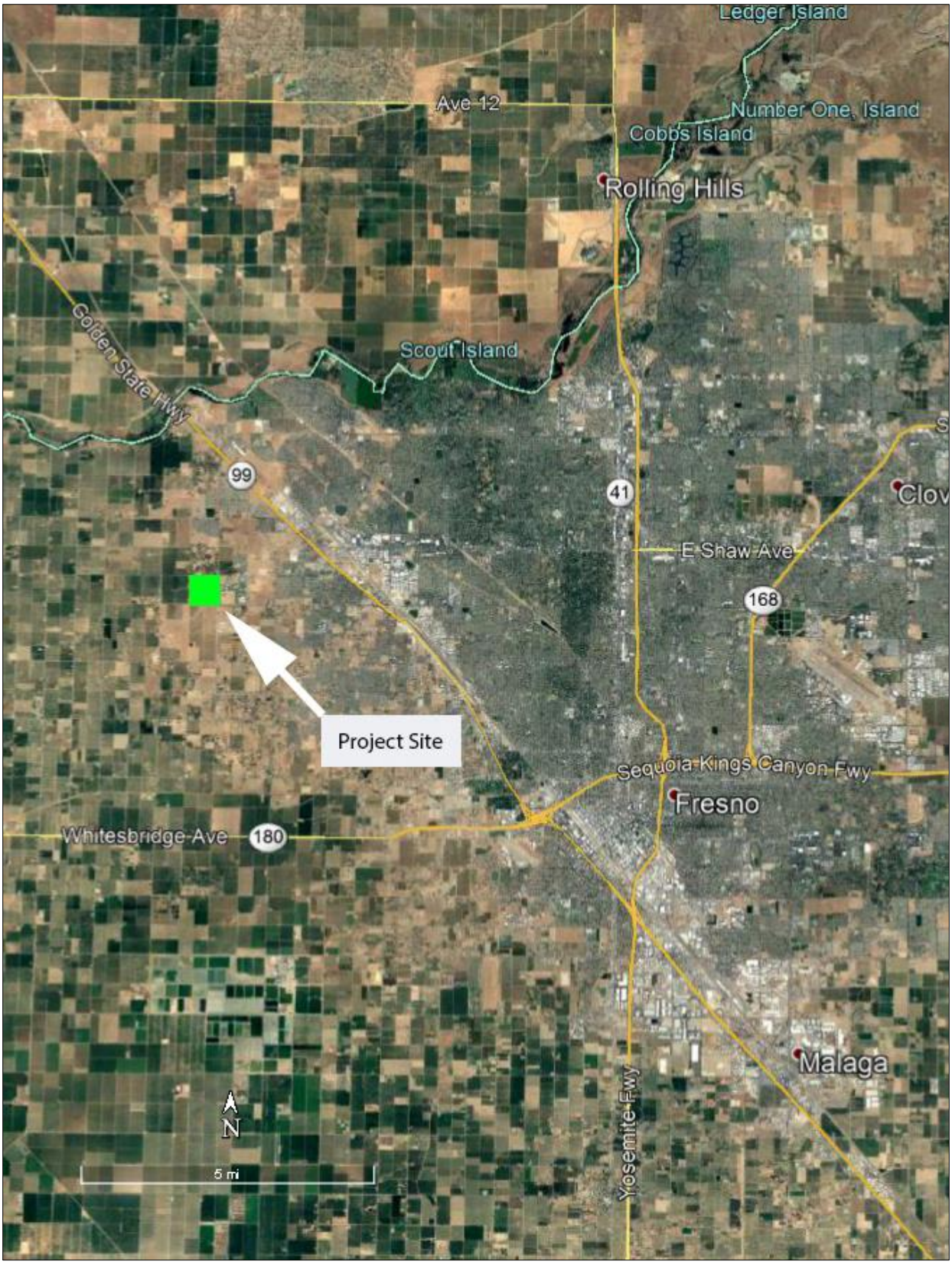


Figure 2
Site Aerial Vicinity Map

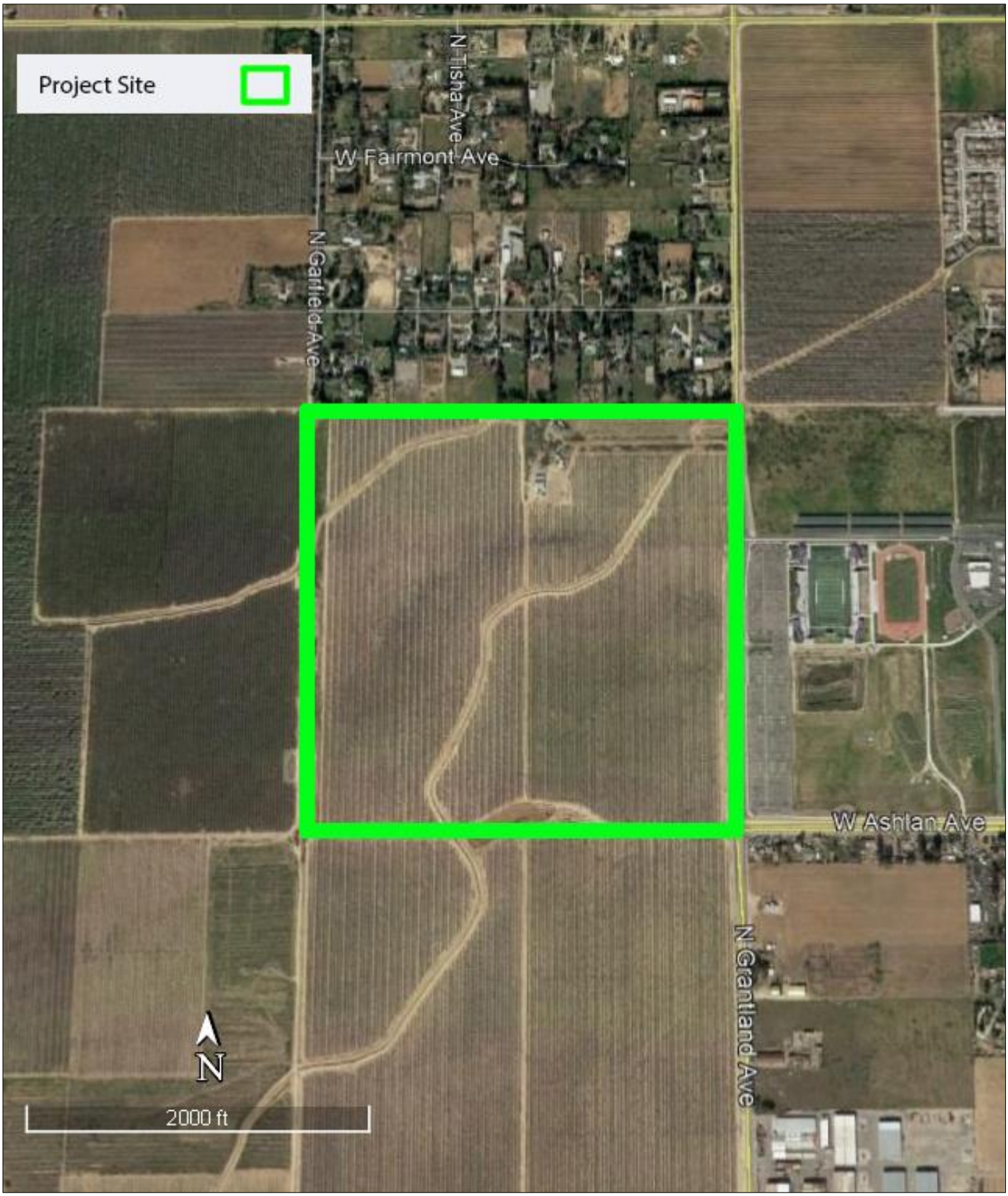


Figure 3
Project Site Plan

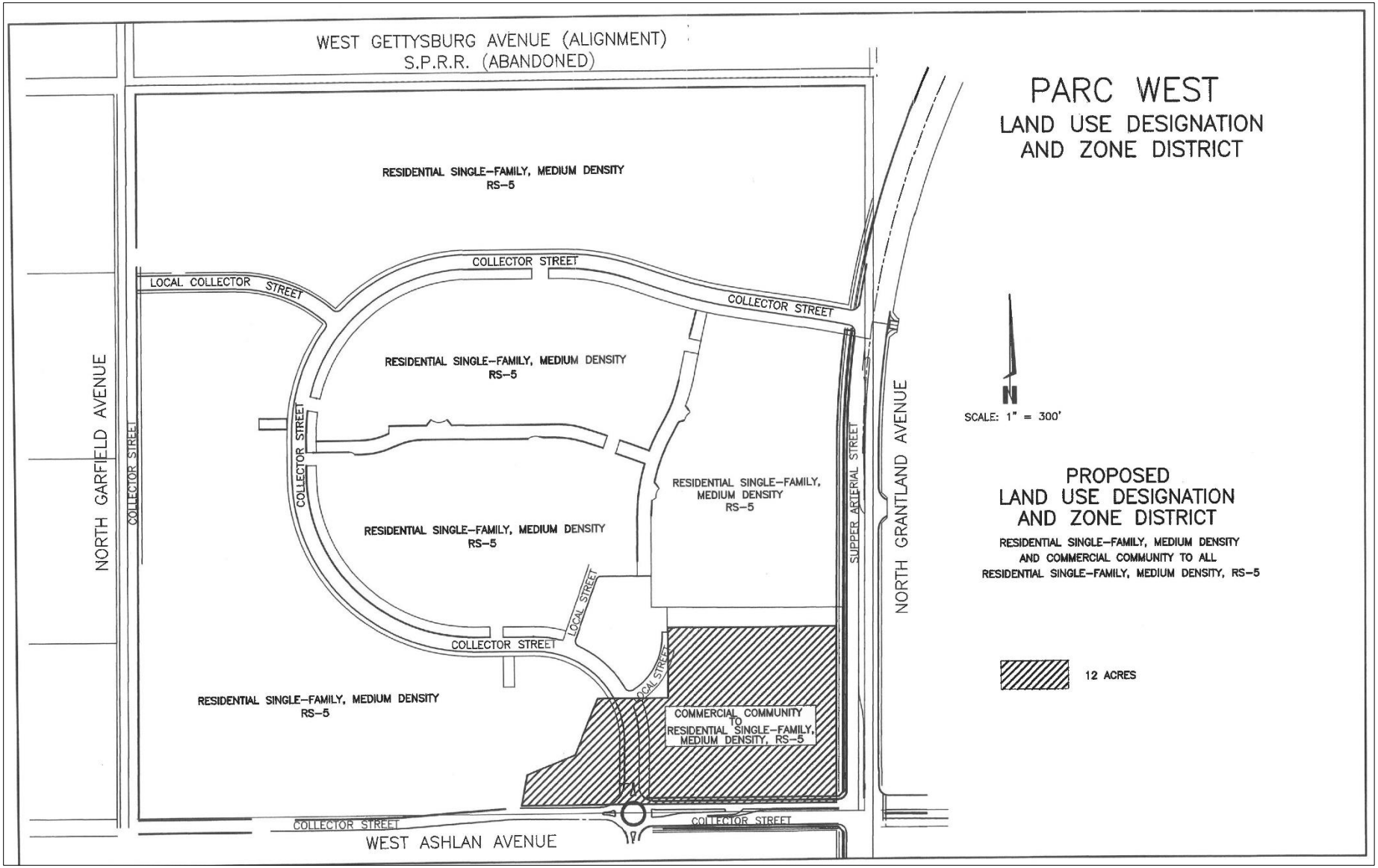


Figure 4
Project Circulation Plan

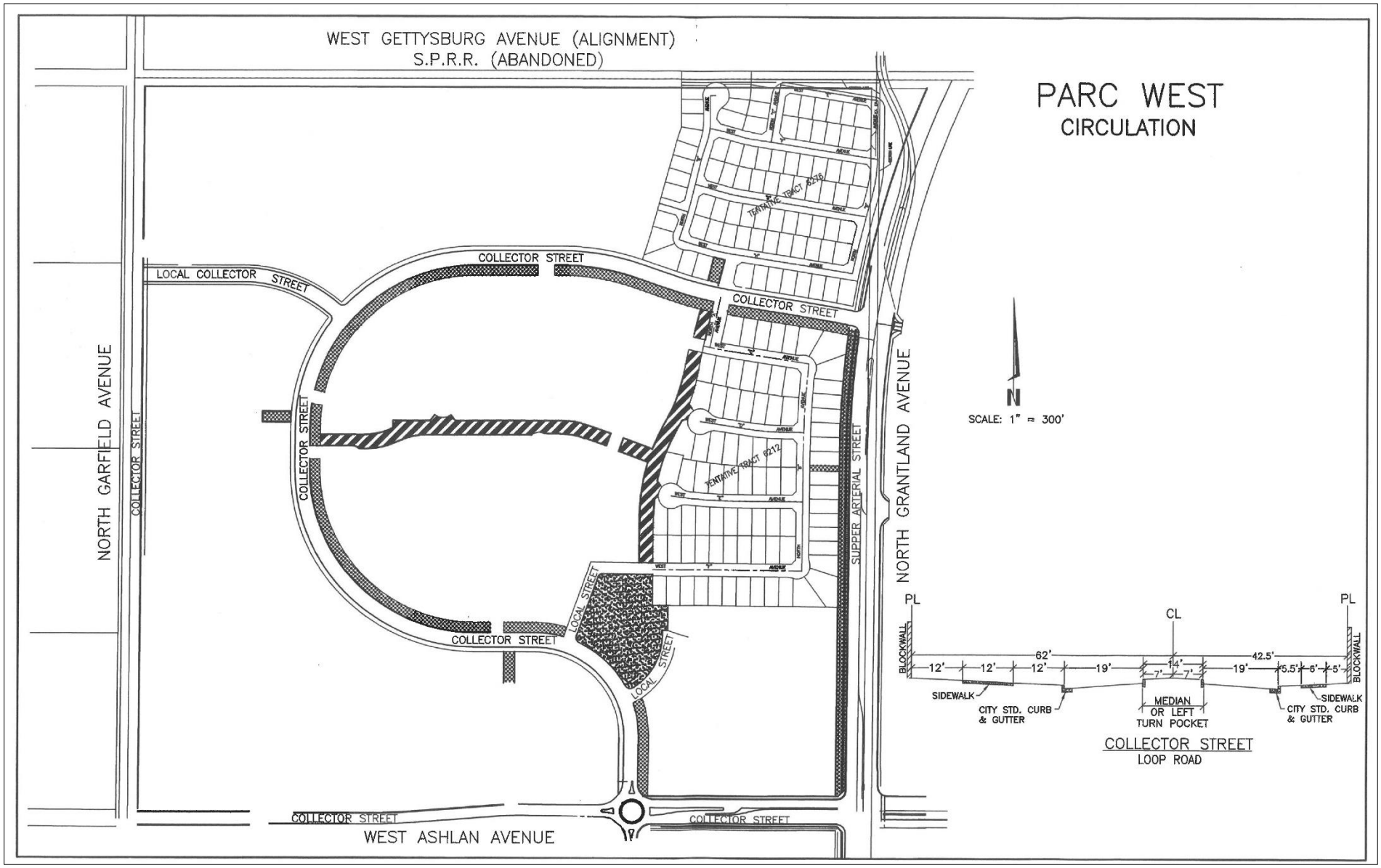


Figure 5
Phase I – Tract Map #6212

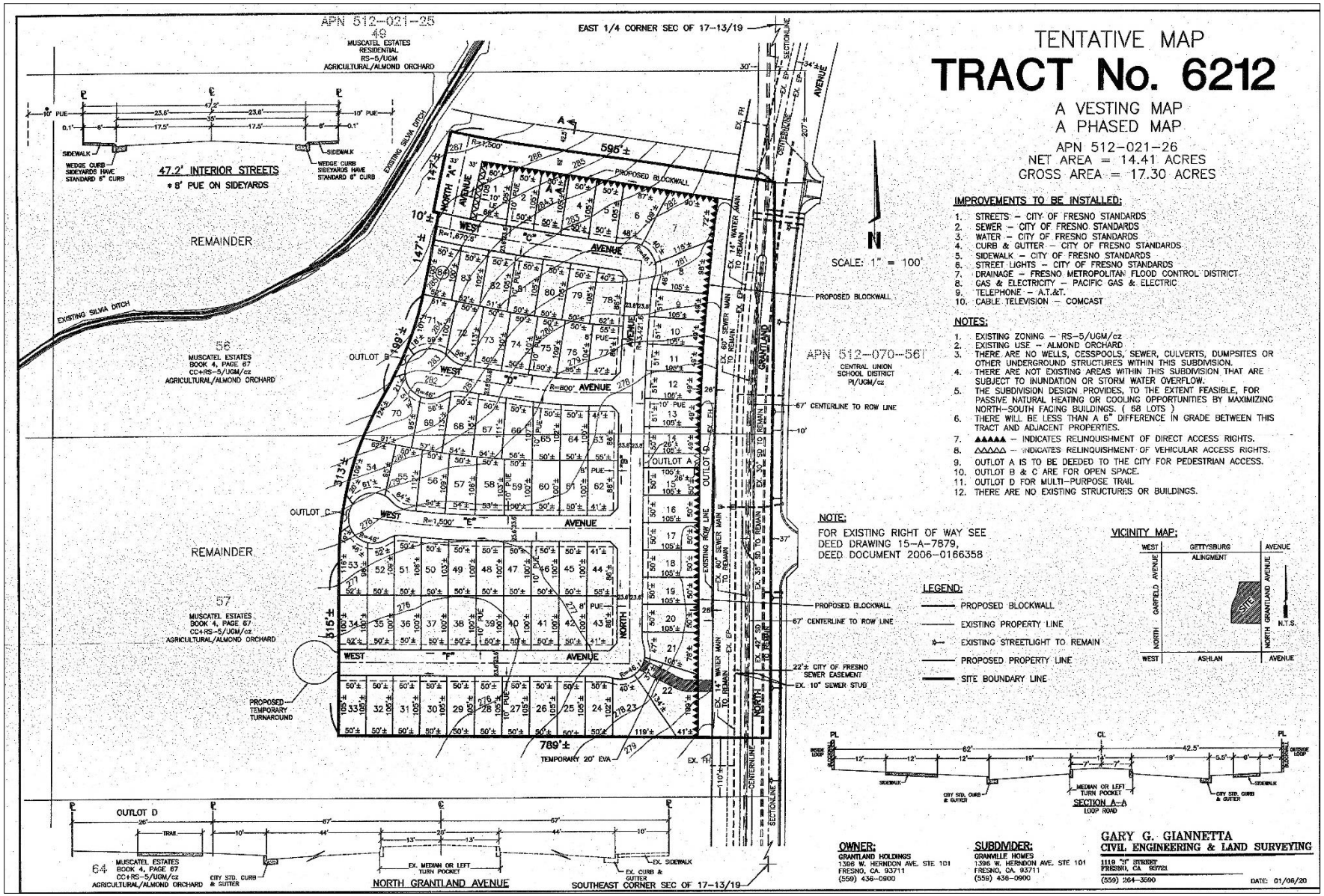


Figure 6
Tract Map #6276

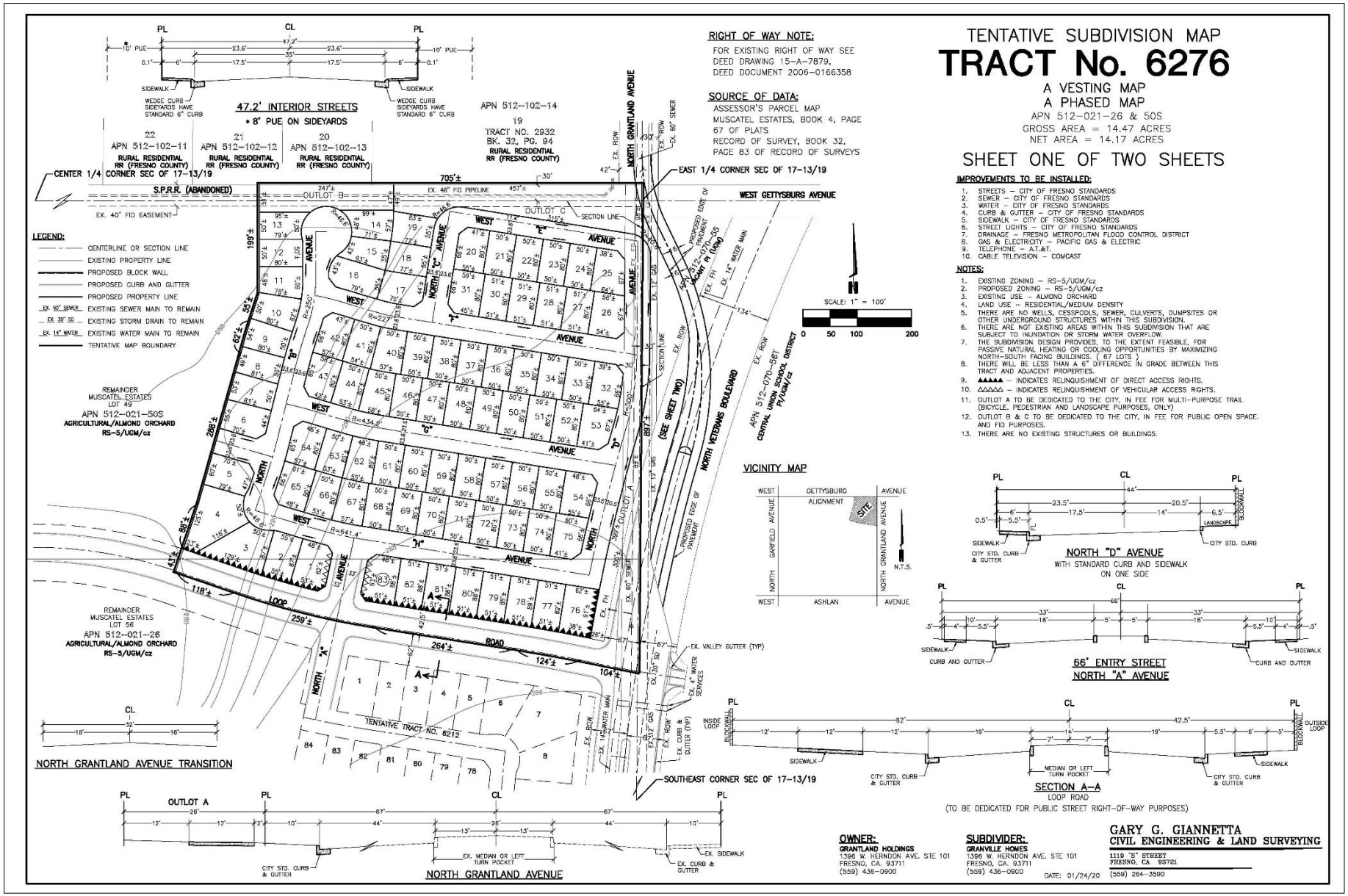


Figure 7
Parc West in Relation to Previous Westlake Project Site

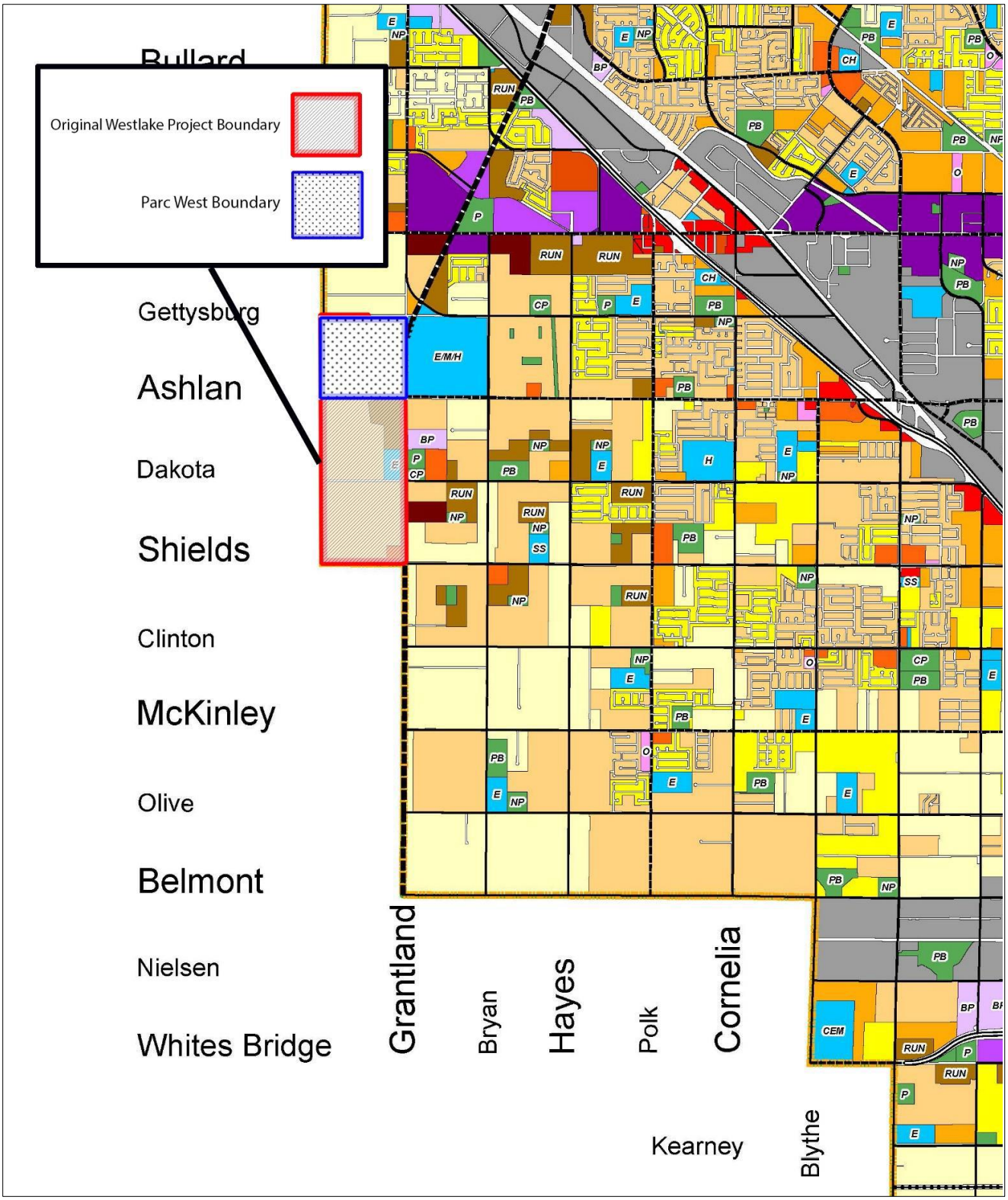
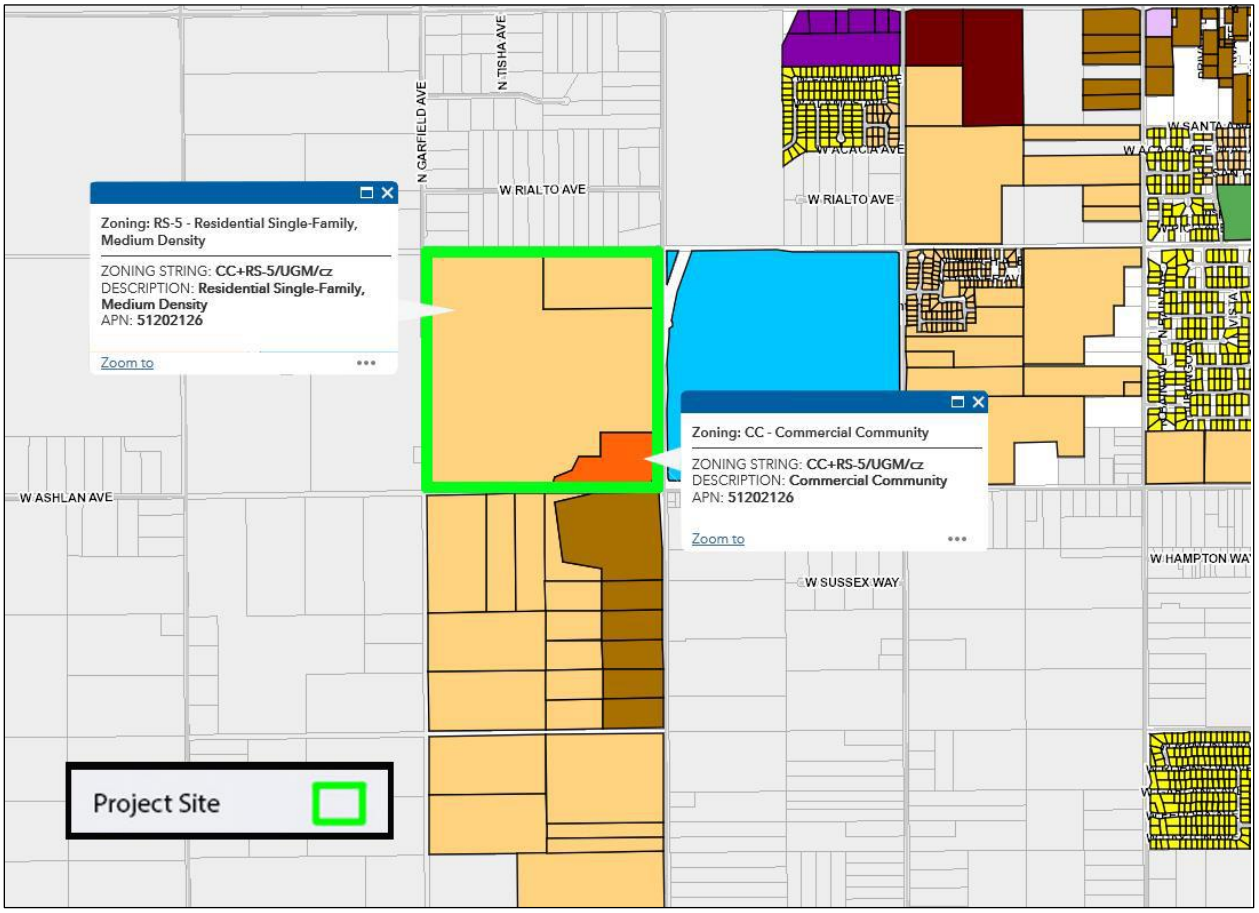


Figure 8
Existing Zoning



Entitlements

In support of the Parc West Project, the Applicant is seeking the following entitlements from the City of Fresno:

- General Plan Amendment: Medium Density Residential land use designation (5.0 – 12.0 DU/acre), Traffic Circulation Plan, Parks, Open Space and Trail Network.
- Rezoning: A 10-acre section originally intended for commercial development will be re-zoned RS-5 and will include removal of the previous Westlake Development Project conditions to be replaced with new conditions appropriate for the Parc West Development. The remaining acreage will remain RS-5 and will not require land use designation or zoning changes.
- Tentative Tract Map to create "super-pads" for future subdivisions.
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- Grading and building permits.

2.5 Other Required Approvals

The Project will require various regulatory approvals, permits, entitlements and/or coordination with agencies as follows:

- Certification of the Draft EIR by the City of Fresno.
- Compliance with other federal, state and local requirements such as the San Joaquin Valley Air Pollution Control District for a dust control plan and the Regional Water Quality Control Board for a Stormwater Pollution Prevention Plan.
- City of Fresno Department of Public Utilities – Solid Waste
- Fresno Irrigation District
- Fresno Metropolitan Flood Control District
- City of Fresno Fire Department
- City of Fresno Public Works Department
- Central Unified School
- Fresno County Environmental Health

Chapter 3

ENVIRONMENTAL SETTING, IMPACTS & MITIGATION

3.3 Air Quality

This section of the DEIR evaluates the potential air quality impacts associated with the implementation of the proposed Project. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The methodology follows the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) prepared by the San Joaquin Valley Air Pollution Control District (SJVAPCD or District) for quantification of emissions and evaluation of potential impacts to air resources, and the SJVAPCD's Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. The information and analysis presented in this Section are based on the Air Quality and Greenhouse Gas/Energy Analysis Report for the Parc West Residential Development prepared by Mitchell Air Quality Consulting. The full report can be reviewed in Appendix B.

Environmental Setting

San Joaquin Valley Air Basin

Topography

The topography of a region is important for air quality because mountains can block airflow that would help disperse pollutants, and can channel air from upwind areas that transports pollutants to downwind areas. The SJVAPCD covers the entirety of the Air Basin. The Air Basin is generally shaped like a bowl. It is open in the north and is surrounded by mountain ranges on all other sides. The Sierra Nevada mountains are along the eastern boundary (8,000 to 14,000 feet in elevation), the Coast Ranges are along the western boundary (3,000 feet in elevation), and the Tehachapi Mountains are along the southern boundary (6,000 to 8,000 feet in elevation).

Climate

The climate is important for air quality because of differences in the atmosphere's ability to trap pollutants close to the ground, which creates adverse air quality; inversely, the atmosphere's ability to rapidly disperse pollutants over a wide area prevents high concentrations from accumulating under different climatic conditions. The Air Basin has an "inland Mediterranean" climate and is characterized by long, hot, dry summers and short, foggy winters. Sunlight can be a catalyst in the formation of some air pollutants (such as ozone); the Air Basin averages over 260 sunny days per year.

Regulatory Setting

Air pollutants are regulated to protect human health and for secondary effects such as visibility and building soiling. The Clean Air Act of 1970 tasks the United States Environmental Protection Agency (EPA) with setting air quality standards. The State of California also sets air quality standards, which are in some cases more stringent than federal standards, in addition to addressing additional pollutants. The following section describes these federal and state standards and the health effects of the regulated pollutants.

Clean Air Act

Congress established much of the basic structure of the Clean Air Act (CAA) in 1970, and made major revisions in 1977 and 1990. Six common air pollutants (also known as criteria pollutants) are addressed in the CAA: particulate matter, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. The EPA labels these pollutants as criteria air pollutants because they are regulated by developing human health-based and/or environmentally based criteria (science-based guidelines), which sets permissible levels. The set of limits based on human health are called primary standards. Another set of limits intended to prevent environmental and property damage are called secondary standards.[1] The federal standards are called National Ambient Air Quality Standards (NAAQS). The air quality standards provide benchmarks for determining whether air quality is healthy at specific locations and whether development activities will cause or contribute to a violation of the standards. The criteria pollutants are:

- Ozone
- Nitrogen dioxide (NO_2)
- Lead
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Carbon monoxide (CO)
- Sulfur dioxide

The federal standards were set to protect public health, including that of sensitive individuals; thus, the EPA is tasked with updating the standards as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health.[2]

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[1] Mitchell Air Quality Consulting. Air Quality and Greenhouse Gas/Energy Analysis Report. Park West Residential Development. See Appendix B of this EIR. Page 14.
[2] Ibid.

California Clean Air Act

The California Legislature enacted the California Clean Air Act (CCAA) in 1988 to address air quality issues of concern not adequately addressed by the federal CAA at the time. California's air quality problems were and continue to be some of the most severe in the nation, and required additional actions beyond the federal mandates. The California Air Resources Board (ARB) administers California Ambient Air Quality Standards (CAAQS) for the 10 air pollutants designated in the CCAA. The 10 state air pollutants are the six federal standards listed above as well visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The EPA authorized California to adopt its own regulations for motor vehicles and other sources that are more stringent than similar federal regulations implementing the CAA. Generally, the planning requirements of the CCAA are less stringent than the federal CAA; therefore, consistency with the CAA will also demonstrate consistency with the CCAA.

Toxic Air Contaminants

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. There are no ambient air quality standards for TAC emissions. TACs are regulated in terms of health risks to individuals and populations exposed to the pollutants. The 1990 Clean Air Act Amendments significantly expanded the EPA's authority to regulate hazardous air pollutants (HAP). Section 112 of the Clean Air Act lists 187 hazardous air pollutants to be regulated by source category. Authority to regulate these pollutants was delegated to individual states. ARB and local air districts regulate TACs and HAPs in California.

Air Pollutant Description and Health Effects

The federal and state ambient air quality standards, relevant effects, properties, and sources of the pollutants are summarized in Table 3.3-1. Several pollutants listed in Table 3.3-1 are not addressed in this analysis. Analysis of lead, hydrogen sulfide, sulfates, and vinyl chloride are not included in this report because no new sources of these pollutant emissions are anticipated with the Project. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed as PM_{10} and $PM_{2.5}$.

Table 3.3-1
Description of Air Pollutants[3]

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Ozone	1 Hour	0.09 ppm	—	Irritate respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage.	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), NO_x, and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NO_x) are mobile sources (on-road and off-road vehicle exhaust).
	8 Hour	0.070 ppm	0.070 ppm[f]			
Carbon monoxide (CO)	1 Hour	20 ppm	35 ppm	Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources.
	8 Hour	9.0 ppm	9 ppm			

[3] Ibid. Page 16.

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
				fetuses; death.		
Nitrogen dioxide[b] (NO_2)	1 Hour	0.18 ppm	0.100 ppm	Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contribution to atmospheric discoloration; increased visits to hospital for respiratory illnesses.	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides—NO_X (NO, NO_2, NO_3, N_2O, N_2O_3, N_2O_4, and N_2O_5). NO_X is a precursor to ozone, PM_{10}, and $PM_{2.5}$ formation. NO_X can react with compounds to form nitric acid and related small particles and result in PM-related health effects.	NO_X is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen dioxide (NO_2) forms quickly from NO_X emissions. NO_2 concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.
	Annual	0.030 ppm	0.053 ppm			
Sulfur dioxide[c] (SO_2)	1 Hour	0.25 ppm	0.075 ppm	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.	Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 ppm, the gas has a strong odor, similar to rotten eggs. Sulfur oxides (SO_X) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and federal standards, further reductions are desirable because sulfur dioxide is a precursor to	Human-caused sources include fossil-fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethylsulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum
	3 Hour	—	0.5 ppm			
	24 Hour	0.04 ppm	0.14 (for certain areas)			
	Annual	—	0.030 ppm (for certain areas)			

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
					sulfate and PM_{10}.	standards.
Particulate matter (PM_{10})	24 Hour	50 μg/m³	150 μg/m³	• Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravates existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. • Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5 and 10 microns in diameter (1 micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal; and recycling. Mobile or transportation-related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.
	Mean	20 μg/m³	—			
Particulate matter ($PM_{2.5}$)	24 Hour	—	35 μg/m³			
	Annual	12 μg/m³	12.0 μg/m³			
Visibility-reducing particles	8 Hour	See note below[d]				
Sulfates	24 Hour	25 μg/m³	—	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardio-pulmonary disease; (d) vegetation damage; (e) degradation of visibility; (f) property damage.	The sulfate ion is a polyatomic anion with the empirical formula SO_4^{2-}. Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.	Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.
Lead[e]	30-day	1.5 μg/m³	—	Lead accumulates in bones, soft tissue, and blood and can	Lead is a solid heavy metal that can exist in air pollution	Lead ore crushing, lead-ore smelting, and battery
	Quarter	—	1.5 μg/m³			

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
	Rolling 3-month average	—	0.15 μg/m³	affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQ.	as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or federal standards at any monitoring station since 1982.	manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.
Vinyl chloride[e]	24 Hour	0.01 ppm	—	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.	Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.	Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.
Hydrogen sulfide	1 Hour	0.03 ppm	—	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.	Hydrogen sulfide (H_2S) is a flammable, colorless, poisonous gas that smells like rotten eggs.	Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide. Anthropogenic sources include the combustion of sulfur-containing fuels (oil and coal).

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Volatile organic compounds (VOC)		There are no state or federal standards for VOCs because they are not classified as criteria pollutants.		Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants.	Reactive organic gases (ROG), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROG and VOCs, the two terms are often used interchangeably.	Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.
Diesel particulate matter (DPM)		There are no ambient air quality standards for DPM.		Some short-term (acute) effects of DPM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human studies on the carcinogenicity of DPM demonstrate an increased risk of lung cancer,	DPM is a source of $PM_{2.5}$—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic aromatic hydrocarbons and	Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. Typically, the main source of DPM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction equipment.

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
				although the increased risk cannot be clearly attributed to diesel exhaust exposure.	their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.	

Notes:
ppm = parts per million (concentration) **µg/m³ = micrograms per cubic meter** **Annual = Annual Arithmetic Mean** **30-day = 30-day average** **Quarter = Calendar quarter**

[a] **Federal standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3 Hour SO_2, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.**

[b] **To attain the 1-hour NO_2 national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb) (0.100 ppm).**

[c] **On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.**

[d] **Visibility-reducing particles: In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.**

[e] **The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.**

[f] **The EPA Administrator approved a revised 8-hour ozone standard of 0.07 ppb on October 1, 2015. The new standard went into effect 60 days after publication of the Final Rule in the Federal Register. The Final Rule was published in the Federal Register on October 26, 2015 and became effective on December 28, 2015.**

Toxic Air Contaminants Health Effects

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. There are no ambient air quality standards for TAC emissions. TACs are regulated in terms of health risks to individuals and populations exposed to the pollutants. The 1990 Clean Air Act Amendments significantly expanded the EPA's authority to regulate hazardous air pollutants. Section 112 of the Clean Air Act lists 187 hazardous air pollutants to be regulated by source category. Authority to regulate these pollutants was delegated to individual states. ARB and local air districts regulate TACs and hazardous air pollutants in California.

Exposures to TACs emissions can have both chronic long-term (over a year or longer) and acute short-term (over a period of hours) health impacts. The TACs of greatest concern are those that cause serious health problems or affect many people. Health problems can include cancer, respiratory irritation, nervous system problems, and birth defects. Some health problems occur very soon after a person inhales a TAC. These immediate effects may be minor, such as watery eyes, or they may be serious, such as life-threatening lung damage. Other health problems may not appear until many months or years after a person's first exposure to the TAC. Cancer is one example of a delayed health problem.

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. The California Almanac of Emissions and Air Quality—2009 Edition presents the relevant concentration and cancer risk data for the ten TACs that pose the most substantial health risk in California based on available data. The ten TACs are acetaldehyde, benzene, 1.3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (DPM).[4]

Health risks attributable to the top 10 TACs listed above are available from the ARB as part of its California Almanac of Emissions and Air Quality. As shown therein for data collected at the First Street air monitoring station in Fresno, cancer risks attributable to all of the listed TACs

[4] Ibid. Page 21.

above with the exception of DPM have declined about 70 percent from the mid-1990s to 2007. Risks associated with DPM emissions are provided only for the year 2000 and have not been updated in the Almanac. Although more recent editions of the Almanac do not provide estimated risk, they do provide emission inventories for DPM for later years. The 2013 Almanac provides emission inventory trends for DPM from 2000 through 2035. The same Almanac reports that DPM emissions were reduced in the SJVAB from 16 tons per day in 2000 to 11 tons per day in 2010, a 31 percent decrease. DPM emissions in the San Joaquin Valley are projected to decrease to 6 tons per day by 2015, a 62 percent reduction from year 2000 levels.[5] ARB predicts a reduction to three tons per day by 2035, which would be an 81 percent reduction from year 2000 levels. Continued implementation of the ARB's Diesel Risk Reduction Plan is expected to provide continued reductions in DPM through 2020 and beyond through regulations on this source.

Asbestos

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings that were constructed prior to the 1977 ban on asbestos for use in buildings. Exposure to naturally occurring asbestos can occur during soil-disturbing activities in areas with deposits present. No naturally occurring asbestos is located near the Project site.

Existing Air Quality Conditions

The local air quality can be evaluated by reviewing relevant air pollution concentrations near the Project area. Table 3.3-2 summarizes 2016 through 2018 published monitoring data, which is the most recent three-year period available. Data was obtained from the closest air monitoring stations with data available. The table displays data from the Fresno-Sierra Sky Park monitoring

[5] Ibid. Page 25.

station (located approximately 3.7 miles northeast of the Project site) and from the Fresno-Garland Avenue monitoring site (located approximately 7.5 miles east of the Project site). The data show that during the past few years, the Project area has exceeded the standards for ozone (state and national), PM_{10} (state), and $PM_{2.5}$ (national). The data in the table reflect the concentration of the pollutants in the air, measured using air monitoring equipment. This differs from emissions, which are calculations of a pollutant being emitted over a certain period. No recent monitoring data for Fresno County or the San Joaquin Valley Air Basin were available for CO or SO_2. Generally, no monitoring is conducted for pollutants that are no longer likely to exceed ambient air quality standards.

Table 3.3-2
Air Quality Monitoring Summary[6]

Air Pollutant	Averaging Time	Item	2016	2017	2018
Ozone[1]	1 Hour	Max 1 Hour (ppm)	0.108	0.128	0.100
		Days > State Standard (0.09 ppm)	6	6	4
Ozone[1]	8 Hour	Max 8 Hour (ppm)	0.089	0.106	0.087
		Days > State Standard (0.07 ppm)	63	50	49
		Days > National Standard (0.070 ppm)	62	47	43
Carbon monoxide (CO)	8 Hour	Max 8 Hour (ppm)	ND	ND	ND
		Days > State Standard (9.0 ppm)	ND	ND	ND
		Days > National Standard (9 ppm)	ND	ND	ND
Nitrogen dioxide (NO_2)[2]	Annual	Annual Average (ppm)	0.010	0.011	0.011
	1 Hour	Max 1 Hour (ppm)	0.0561	0.0573	0.0681
		Days > State Standard (0.18 ppm)	0	0	0
Sulfur dioxide (SO_2)	Annual	Annual Average (ppm)	ND	ND	ND
	24 Hour	Max 24 Hour (ppm)	ND	ND	ND
		Days > State Standard (0.04 ppm)	ND	ND	ND
Inhalable coarse particles (PM_{10})[2]	Annual	Annual Average (μg/m^3)	34.8	39.6	41.0
	24 hour	24 Hour (μg/m^3)	91.9	160.1	130.4
		Days > State Standard (50 μg/m^3)	67.5	97.4	102.7
		Days > National Standard (150	0	1	0

[6] Ibid. Page 23.

Air Pollutant	Averaging Time	Item	2016	2017	2018
		μg/m³)			
Fine particulate matter ($PM_{2.5}$)[2]	Annual	Annual Average (μg/m³)	13.6	14.3	16.6
	24 Hour	24 Hour (μg/m³)	52.7	86.0	95.7
		Days > National Standard (35 μg/m³)	16.0	31.1	36.0

Notes:
> = exceed ppm = parts per million μg/m³ = micrograms per cubic meter
ID = insufficient data ND = no data max = maximum
Bold = exceedance
State Standard = California Ambient Air Quality Standard
National Standard = National Ambient Air Quality Standard
[1] Fresno-Sierra Sky Park Monitoring Station
[2] Fresno-Garland Monitoring Station

The health impacts of the various air pollutants of concern can be presented in a number of ways. The clearest of these is comparable with the state and federal ozone standards. If concentrations are below the standard, it is safe to say that no significant health impact would occur to anyone. When concentrations exceed the standard, impacts will vary based on the amount by which the standard is exceeded. The EPA developed the Air Quality Index (AQI) as an easy-to-understand measure of health impacts compared with concentrations in the air. Table 3.3-3 provides a description of the health impacts of ozone at different concentrations.

Table 3.3-3
Air Quality Index and Health Effects from Ozone[7]

Air Quality Index/ 8-hour Ozone Concentration	Health Effects Description
AQI 51–100—Moderate	Sensitive Groups: Children and people with asthma are the groups most at risk.
Concentration 55–70 ppb	Health Effects Statements: Unusually sensitive individuals may experience respiratory symptoms.
	Cautionary Statements: Unusually sensitive people should consider limiting prolonged outdoor exertion.
AQI 101–150—Unhealthy for Sensitive Groups	Sensitive Groups: Children and people with asthma are the groups most at risk.
Concentration 71–85 ppb	Health Effects Statements: Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults and people with respiratory disease, such as asthma.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.
AQI 151–200—Unhealthy	Sensitive Groups: Children and people with asthma are the groups most at risk.

[7] Ibid. Page 24

Air Quality Index/ 8-hour Ozone Concentration	Health Effects Description
Concentration 86–105 ppb	Health Effects Statements: Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
AQI 201–300—Very Unhealthy	Sensitive Groups: Children and people with asthma are the groups most at risk.
Concentration 106–200 ppb	Health Effects Statements: Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.

The AQI for the 8-hour ozone standard is based on the current NAAQS of 70 parts per billion (ppb). Based on the AQI scale for the 8-hour ozone standard, the Project area experienced one day in the last three years that would be categorized as very unhealthy (AQI 201–250), and as many as 113 days that were unhealthy (AQI 151–200) or unhealthy for sensitive groups (AQI 101–150), violating the 70-ppb standard as measured at the Fresno-Sierra Sky Park monitoring station.

The other nonattainment pollutant of concern is $PM_{2.5}$. An AQI of 100 or lower is considered moderate and would be triggered by a 24-hour average concentration of 12.1 to 35.4 μg/m^3. An AQI of 101 to 105 or 35.5-55.4 μg/m^3 is considered unhealthful for sensitive groups. When concentrations reach this amount, it is considered an exceedance of the federal $PM_{2.5}$ standard. The monitoring station nearest the Project exceeded the standard on approximately 83 days in the three-year period spanning from 2016 to 2018.

Attainment Status

The EPA and the ARB designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated marginal, moderate, serious, severe, or extreme as a function of deviation from standards.

Each standard has a different definition, or "form" of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The current attainment designations for the Air Basin are shown in Table 3.3-4. The Air Basin is designated nonattainment for ozone, PM_{10}, and $PM_{2.5}$.

Table 3.3-4
San Joaquin Valley Air Basin Attainment Status[8]

Pollutant	State Status	National Status
Ozone—One Hour	Nonattainment/Severe	No Standard
Ozone—Eight Hour	Nonattainment	Nonattainment/Extreme
Carbon monoxide	Attainment/Unclassified	Merced, Madera, and Kings Counties are unclassified; others are in Attainment
Nitrogen dioxide	Attainment	Attainment/Unclassified
Sulfur dioxide	Attainment	Attainment/Unclassified
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
Lead	Attainment	No Designation/Classification

Air Quality Plans and Regulations

California Regulations

Low Emission Vehicle Program – The ARB first adopted Low-Emission Vehicle (LEV) program standards in 1990. These first LEV standards ran from 1994 through 2003. LEV II regulations, running from 2004 through 2010, represent continuing progress in emission reductions. As the State's passenger vehicle fleet continues to grow and more sport utility vehicles and pickup trucks are used as passenger cars rather than work vehicles, the more stringent LEV II standards were adopted to provide reductions necessary for California to meet federally mandated clean air goals outlined in the 1994 State Implementation Plan. In 2012, ARB adopted the LEV III amendments to California's LEV regulations. These amendments, also known as the Advanced Clean Car Program include more stringent emission standards for model years 2017 through 2025 for both criteria pollutants and GHGs for new passenger vehicles.

[8] Ibid. Page 27

On-Road Heavy-Duty Vehicle Program – The ARB has adopted standards for emissions from various types of new on-road heavy-duty vehicles. Section 1956.8, Title 13, California Code of Regulations contains California's emission standards for on-road heavy-duty engines and vehicles, as well as test procedures. ARB has also adopted programs to reduce emissions from in-use heavy-duty vehicles including the Heavy-Duty Diesel Vehicle Idling Reduction Program, the Heavy-Duty Diesel In-Use Compliance Program, the Public Bus Fleet Rule and Engine Standards, and the School Bus Program and others. The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low-use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks.

ARB Regulation for In-Use Off-Road Diesel Vehicles – On July 26, 2007, the ARB adopted a regulation to reduce DPM and nitrous oxide (NO_x) emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. The ARB is enforcing that part of the rule with fines up to $10,000 per day for each vehicle in violation. Performance requirements of the rule are based on a fleet's average NO_x emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirements, making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501–5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less).

ARB Regulation for Consumer Products – The ARB Consumer Products Regulation was last amended in January 2015. The ARB regulates the VOC content of a wide variety of consumer products sold and manufactured in California. The purpose of the regulation is to reduce the emission of ozone precursors, TACs, and GHG emissions in products that are used by homes and businesses. The regulated products include but are not limited to solvents, adhesives, air fresheners, soaps, aromatic compounds, windshield cleaners, charcoal lighter, dry cleaning fluids, floor polishes, and general cleaners and degreasers.

ARB Airborne Toxic Control Measure for Asbestos – Construction sometimes requires the demolition of existing buildings where construction occurs. The Project includes no demolition. Asbestos is also found in a natural state, known as naturally occurring asbestos. Exposure and

disturbance of rock and soil that naturally contain asbestos can result in the release of fibers into the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

The ARB has an Air Toxic Control Measure for construction, grading, quarrying, and surface mining operations, requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. The measure applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The measure also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity. Review of the Department of Conservation maps indicates that no ultramafic rock has been found near the southeast Fresno area.

Diesel Risk Reduction Plan – The ARB's Diesel Risk Reduction Plan has led to the adoption of new state regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce DPM emissions by about 90 percent overall from year 2000 levels. The projected emission benefits associated with the full implementation of this plan, including federal measures, are reductions in DPM emissions and associated cancer risks of 75 percent by 2010, and 85 percent by 2020.

San Joaquin Valley Air Pollution Control District (District) Regulations

The District is responsible for controlling emissions primarily from stationary sources. The District, in coordination with the eight countywide transportation agencies, is also responsible for developing, updating, and implementing air quality attainment plans for the Air Basin. The District also has roles under CEQA.

Ozone Plans - The Air Basin is designated nonattainment of state and federal health-based air quality standards for ozone. To meet Clean Air Act requirements for the one-hour ozone standard, the District adopted an Extreme Ozone Attainment Demonstration Plan in 2004, with an attainment date of 2010. Although the EPA revoked the federal 1-hour ozone standard

effective June 15, 2005 and replaced it with an 8-hour standard, the requirement to submit a plan for that standard remained in effect for the San Joaquin Valley.

The planning requirements for the 1-hour plan remain in effect until replaced by a federal 8-hour ozone attainment plan. On March 8, 2010, the EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan, including revisions to the plan, effective April 7, 2010. However, the Air Basin failed to attain the standard in 2010 and was subject to a $29 million Clean Air Act penalty. The penalty is being collected through an additional $12 motor vehicle registration surcharge for each passenger vehicle registered in the Air Basin that will be applied to pollution reduction programs in the region. The District also instituted a more robust ozone episodic program to reduce emissions on days with the potential to exceed the ozone standards. On July 18, 2016, the EPA published in the Federal Register a final action determining that the San Joaquin Valley has attained the 1-hour ozone national ambient air quality standard. This determination is based on the most recent three-year period (2012-2014) of sufficient, quality-assured, and certified data. The penalty fees remain in place pending submittal of a demonstration that the San Joaquin Valley will maintain the 1-hour standard for 10 years.

The EPA originally classified the Air Basin as serious nonattainment for the 1997 federal 8-hour ozone standard with an attainment date of 2013. On April 30, 2007, the District's Governing Board adopted the 2007 Ozone Plan, which contained analysis showing a 2013 attainment target to be infeasible. The 2007 Ozone Plan details the plan for achieving attainment on schedule with an "extreme nonattainment" deadline of 2024. At its adoption of the 2007 Ozone Plan, the District also requested a reclassification to extreme nonattainment. ARB approved the plan in June 2007, and the EPA approved the request for reclassification to extreme nonattainment on April 15, 2010.

The 2007 Ozone Plan contains measures to reduce ozone and particulate matter precursor emissions to bring the Basin into attainment with the federal 8-hour ozone standard. The 2007 Ozone Plan calls for a 75 percent reduction of NO_X and a 25 percent reduction of reactive organic gases (ROG). The District Governing Board adopted the 2007 Ozone Plan on April 30, 2007. The ARB approved the plan on June 14, 2007. The 2007 Ozone Plan requires yet to be determined "Advanced Technology" to achieve additional reductions after 2021, in order to attain the standard at all monitoring stations in the Air Basin by 2024 as allowed for areas designated extreme nonattainment by the federal Clean Air Act.

Particulate Matter Plans - The Air Basin was designated nonattainment of state and federal health-based air quality standards for PM_{10}. The Air Basin is also designated nonattainment of state and federal standards for $PM_{2.5}$.

To meet Clean Air Act requirements for the PM_{10} standard, the District adopted a PM_{10} Attainment Demonstration Plan (Amended 2003 PM_{10} Plan and 2006 PM_{10} Plan), which has an attainment date of 2010. The District adopted the 2007 PM_{10} Maintenance Plan in September 2007 to assure the San Joaquin Valley's continued attainment of the EPA's PM_{10} standard. The EPA designated the valley as an attainment/maintenance area for PM_{10} on September 25, 2008. Although the San Joaquin Valley has exceeded the standard since then, those days were considered exceptional events that are not considered a violation of the standard for attainment purposes.

The 2008 $PM_{2.5}$ Plan builds upon the comprehensive strategy adopted in the 2007 Ozone Plan to bring the Air Basin into attainment of the 1997 national standards for $PM_{2.5}$. The EPA has identified NO_X and SO_2as precursors that must be addressed in air quality plans for the 1997 $PM_{2.5}$ standards. The 2008 $PM_{2.5}$ Plan is a continuation of the District's strategy to improve the air quality in the Air Basin. The EPA issued final approval of the 2008 $PM_{2.5}$ Plan on November 9, 2011, which became effective on January 9, 2012. The EPA approved the emissions inventory, the reasonably available control measures/reasonably available control technology demonstration, reasonable further progress demonstration, attainment demonstration and associated air quality modeling, and the transportation conformity motor vehicle emissions budgets. The EPA also granted California's request to extend the attainment deadline for the San Joaquin Valley to April 5, 2015 and approved commitments to measures and reductions by the District and the ARB. Finally, it disapproved the State Implementation Plan's contingency provisions and issued a protective finding for transportation conformity determinations.

In December 2012, the District adopted the 2012 $PM_{2.5}$ Plan to bring the San Joaquin Valley into attainment of the EPA's 2006 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$. This plan seeks to bring the Valley into attainment with the standard by 2019, with the expectation that most areas will achieve attainment before that time.

The 2015 Plan for the 1997 $PM_{2.5}$ Standard approved by the District Governing Board on April 16, 2015—will bring the Valley into attainment of the EPA's 1997 $PM_{2.5}$ standard as expeditiously as practicable, but no later than December 31, 2020. The plan was required to request reclassification to Serious nonattainment and to extend the attainment date from 2018 to 2020.

The 2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard was adopted on September 15, 2016. This plan includes an attainment impracticability demonstration and request for reclassification of the Valley from Moderate nonattainment to Serious nonattainment.

The District adopted the 2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards on November 15, 2018. This plan provides a combined strategy to address the EPA federal 1997 annual $PM_{2.5}$ standard of 15 μg/m³ and 24-hour $PM_{2.5}$ standard of 65 μg/m³; the 2006 24-hour $PM_{2.5}$ standard of 35 μg/m³; and the 2012 annual $PM_{2.5}$ standard of 12 μg/m³. This plan demonstrates attainment of the federal $PM_{2.5}$ standards as expeditiously as practicable.

District Rules and Regulations – The District rules and regulations that may apply to the Project includes but are not limited to the following:

- Rule 4102—Nuisance. The purpose of this rule is to protect the health and safety of the public, and applies to any source operation that emits or may emit air contaminants or other materials. This rule is enforced on a complaint basis.
- Rule 4601—Architectural Coatings. The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling. Only compliant components are available for purchase in the San Joaquin Valley.
- Rule 4641—Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641. This regulation is enforced on the asphalt provider
- Rule 4901—Wood-Burning Fireplaces and Wood-Burning Heaters. The purposes of this rule are to limit emissions of carbon monoxide and particulate matter from wood-burning fireplaces, wood-burning heaters, and outdoor wood-burning devices, and to establish a public education program to reduce wood-burning emissions. All development that includes wood-burning devices are subject to this rule.
- Rule 4902—Residential Water Heaters. In 2009, the District amended Rule 4902 to strengthen the rule by lowering the limit to 10 nanograms per joule (ng/J) for new or replacement water heaters, and to a limit of 14 ng/J for instantaneous water heaters. Retailer compliance dates ranged from 2010 to 2012, depending on the unit type.
- Regulation VIII—Fugitive PM_{10} Prohibitions. Rules 8011–8081 are designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and trackout, etc. All development projects that involve soil disturbance are subject to at least one provision of the Regulation VIII series of rules.

- Rule 9510—Indirect Source Review. This rule reduces the impact of NO_X and PM_{10} emissions from growth within the Air Basin. The rule places application and emission reduction requirements on development projects meeting applicability criteria in order to reduce emissions through on-site mitigation, off-site District-administered projects, or a combination of the two. This Project is subject to Rule 9510 because it would develop more than 50 residential dwelling units.

City of Fresno Air Quality Goals and Policies

The General Plan lists the following policies that are supportive of improved air quality:

- Objective RC-4. In cooperation with other jurisdictions and agencies in the San Joaquin Valley Air Basin, take necessary actions to achieve and maintain compliance with State and federal air quality standards for criteria pollutants.
- RC-4-a Support Regional Efforts. Support and lead, where appropriate, regional, State and federal programs and actions for the improvement of air quality, especially the SJVAPCD's efforts to monitor and control air pollutants from both stationary and mobile sources and implement Reasonably Available Control Measures in the Ozone Attainment Plan.
- RC-4-b Conditions of Approval. Develop and incorporate air quality maintenance requirements, compatible with Air Quality Attainment and Maintenance Plans, as conditions of approval for General Plan amendments, community plans, Specific Plans, neighborhood plans, Concept Plans, and development proposals.
- RC-4-c Evaluate Impacts with Models. Continue to require the use of computer models used by SJVAPCD to evaluate the air quality impacts of plans and projects that require such environmental review by the City.
- RC-4-d Forward Information. Forward information regarding proposed General Plan amendments, community plans, Specific Plans, neighborhood plans, Concept Plans, and development proposals that require air quality evaluation, and amendments to development regulations to the SJVAPCD for their review of potential air quality and health impacts.
- RC-4-k Electric Vehicle Charging. Develop standards to facilitate electric vehicle charging infrastructure in both new and existing public and private buildings, in order to accommodate these vehicles as the technology becomes more widespread.

1. The idling time of all construction equipment used in the plan area shall not exceed ten minutes when practicable.
2. The hours of operation of heavy-duty equipment shall be minimized when practicable.
3. All equipment shall be properly tuned and maintained in accord with manufacturer's specifications when practicable.
4. When feasible, alternative fueled or electrical construction equipment shall be used at the Project site.
5. The minimum practical engine size for construction equipment shall be used when practicable.
6. When feasible, electric carts or other smaller equipment shall be used at the project site.
7. Gasoline-powered equipment shall be equipped with catalytic converters when practicable.

Thresholds of Significance

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on air quality, the type, level, and impact of emissions generated by the project must be evaluated.

The following air quality significance thresholds are contained in Appendix G of the CEQA Guidelines effective December 28, 2018. A significant impact would occur if the project would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard;

c) Expose sensitive receptors to substantial pollutant concentrations; or

d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people.

Impacts and Mitigation Measures

Impact 3.2-1: *Would the project conflict with or obstruct implementation of the applicable air quality plan?*

Less Than Significant Impact. A measure for determining if the Project is consistent with the air quality plans is if the Project would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plans. Regional air quality impacts and attainment of standards are the result of the cumulative impacts of all emission sources within the air basin. Individual projects are generally not large enough to contribute measurably to an existing violation of air quality standards. Therefore, the cumulative impact of the Project is based on its cumulative contribution. Because of the region's nonattainment status for ozone, $PM_{2.5}$, and PM_{10}—if Project-generated emissions of either of the ozone precursor pollutants (ROG and NO_X), PM_{10}, or $PM_{2.5}$ would exceed the District's significance thresholds—then the Project would be considered to contribute to violations of the applicable standards and conflict with the attainment plans.

As discussed in Impact 3.2-2 below, emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ associated with the construction and operation of the Project would not exceed the District's significance thresholds. As shown in Impact 3.2-2, the Project would not result in CO hotspots that would violate CO standards. Therefore, the Project would not contribute to air quality violations.

<u>Compliance with Applicable Control Measures</u>

The Air Quality Plan (AQP) contains a number of control measures, which are enforceable requirements through the adoption of rules and regulations. A description of rules and regulations that apply to this Project is provided below.

SJVAPCD Rule 9510—Indirect Source Review (ISR) is a control measure in the 2006 PM_{10} Plan that requires NO_X and PM_{10} emission reductions from development projects in the San Joaquin Valley. The NO_X emission reductions help reduce the secondary formation of PM_{10} in the atmosphere (primarily ammonium nitrate and ammonium sulfate) and also reduce the formation of ozone. Reductions in directly emitted PM_{10} reduce particles such as dust, soot, and aerosols. Rule 9510 is also a control measure in the 2016 Plan for the 2008 8-Hour Ozone Standard. Developers of projects subject to Rule 9510 must reduce emissions occurring during construction and operational phases through on-site measures, or pay off-site mitigation fees. The Project is required to comply with Rule 9510.

Regulation VIII—Fugitive PM_{10} Prohibitions is a control measure that is one main strategies from the 2006 PM_{10} for reducing the PM_{10} emissions that are part of fugitive dust. Projects over 10 acres are required to file a Dust Control Plan (DCP) containing dust control practices sufficient to comply with Regulation VIII. The Project is required to prepare a DCP to comply with Regulation VIII.

Other control measures that apply to the Project are Rule 4641—Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operation that requires reductions in VOC emissions during paving and Rule 4601—Architectural Coatings that limits the VOC content of all types of paints and coatings sold in the San Joaquin Valley. These measures apply at the point of sale of the asphalt and the coatings, so Project compliance is ensured without additional mitigation measures.

The Project would comply with all applicable SJVAPCD rules and regulations. Therefore, the Project complies with this criterion and would not conflict with or obstruct implementation of the applicable air quality attainment plan.

In conclusion, the Project's emissions are less than significant for all criteria pollutants and would not result in inconsistency with the AQP for this criterion. The Project complies with applicable control measures of the AQP. Therefore, the Project is consistent with the AQP, and the impact would be ***less than significant.***

Mitigation Measures: None are required.

Impact 3.2-2: *Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?*

Less Than Significant Impact. To result in a less than significant impact, the following criteria must be true:

1. Regional analysis: emissions of nonattainment pollutants must be below the District's regional significance thresholds. This is an approach recommended by the District in its GAMAQI.

2. Summary of projections: the project must be consistent with current air quality attainment plans including control measures and regulations. This is an approach consistent with Section 15130(b) of the CEQA Guidelines.

3. Cumulative health impacts: the project must result in less than significant cumulative health effects from the nonattainment pollutants. This approach correlates the significance of the regional analysis with health effects, consistent with the court decision, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219-20.

Regional Emissions

Air pollutant emissions have both regional and localized effects. This analysis assesses the regional effects of the project's criteria pollutant emissions in comparison to SJVAPCD thresholds of significance for short-term construction activities and long-term operation of the Project. Localized emissions from Project construction and operation are assessed under Impact 3.3-3—Sensitive Receptors using concentration-based thresholds that determine if the Project would result in a localized exceedance of any ambient air quality standards or would make a cumulatively considerable contribution to an existing exceedance.

The primary pollutants of concern during Project construction and operation are ROG, NO_X, PM_{10}, and $PM_{2.5}$. The SJVAPCD GAMAQI adopted in 2015 contains thresholds for CO, NO_X, ROG, SO_X, PM_{10}, and $PM_{2.5}$.

Ozone is a secondary pollutant that can be formed miles from the source of emissions, through reactions of ROG and NO_X emissions in the presence of sunlight. Therefore, ROG and NO_X are termed ozone precursors. The Air Basin often exceeds the state and national ozone standards. Therefore, if the Project emits a substantial quantity of ozone precursors, the Project may contribute to an exceedance of the ozone standard. The Air Basin also exceeds air quality standards for PM_{10}, and $PM_{2.5}$; therefore, substantial Project emissions may contribute to an exceedance for these pollutants. The District's annual emission significance thresholds used for the Project define the substantial contribution for both operational and construction emissions as follows:

- 100 tons per year CO
- 10 tons per year NO_X
- 10 tons per year ROG
- 27 tons per year SO_X
- 15 tons per year PM_{10}
- 15 tons per year $PM_{2.5}$

The Project does not contain sources that would produce substantial quantities of SO_2 emissions during construction and operation.[9] Modeling conducted for the Project show that SO_2

[9] Ibid. Page 80.

emissions are well below the SJVAPCD GAMAQI thresholds, as shown in the modeling results contained in Appendix B. No further analysis of SO_2 is required.

Construction Emissions

Construction emissions were modeled using the CalEEMod version 2016.3.2. The results of the modeling are presented in Table 3.3-5 and reflect compliance with SJVAPCD regulations that apply to construction activities. Modeling assumptions and parameters are provided in Section 4 of Appendix B. As shown in Table 3.3-5, the emissions are below the significance thresholds in each construction year. Therefore, the construction emissions are less than significant on a project basis.

Table 3.3-5
Construction Air Pollutant Emissions Summary[10]

Year	Emissions (tons per year)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Phase 1 2021	**0.57**	**5.36**	**4.66**	**0.50**	**0.35**
Phase 1 2022	1.27	0.41	0.50	0.03	**0.02**
Phase 2 2022	0.61	5.65	5.42	0.51	**0.35**
Total for 2022	**1.87**	**6.06**	**5.92**	**0.53**	**0.37**
Phase 2 2023	1.29	0.44	0.57	0.03	**0.02**
Phase 3 2023	0.56	5.19	5.42	0.47	**0.32**
Total for 2023	**1.85**	**5.63**	**5.99**	**0.50**	**0.34**
Phase 3 2024	1.27	0.31	0.45	0.02	**0.02**
Phase 4 2024	0.54	4.92	5.43	0.45	**0.30**
Total for 2024	**1.81**	**5.23**	**5.88**	**0.47**	**0.31**
Phase 4 2025	1.27	0.25	0.40	0.02	**0.01**
Phase 5 2025	0.25	2.26	2.49	0.32	**0.18**
Total for 2025	**1.51**	**2.51**	**2.89**	**0.34**	**0.19**
Phase 5 2026	1.26	0.13	0.22	0.01	**0.01**
Grand Total for All Years of Construction	**8.87**	**24.92**	**25.55**	**2.35**	**1.58**
Highest Construction Emissions in Any Year	***1.87***	***6.06***	***5.99***	***0.53***	***0.37***
Significance threshold (tons/year)	10	10	100	15	**15**
Exceed threshold—significant impact?	No	No	No	No	**No**

Notes:
PM_{10} and $PM_{2.5}$ emissions are from the mitigated output to reflect compliance with Regulation VIII—Fugitive PM_{10} Prohibitions.
ROG = reactive organic gases NO_X = nitrogen oxides PM_{10} and $PM_{2.5}$ = particulate matter
Calculations use unrounded numbers.

[10] Ibid. Page 81.

Operational Emissions

Operational emissions occur over the lifetime of the Project and are from two main sources: area sources and motor vehicles, or mobile sources. The District considers construction and operational emissions separately when making significance determinations. For assumptions in estimating the emissions, please refer to Section 4 of Appendix B. The emissions modeling results for Project operation are summarized in Table 3.3-6

As shown in Table 3.3-6, the emissions are below the SJVAPCD significance thresholds prior to application of mitigation measures. The Project emissions include credit for compliance with regulations and Project design features that would reduce Project emissions. Project emissions would result in a less than significant impact.

Table 3.3-6
Operational Air Pollutant Emissions[11]

Phase and Year	Emissions (tons per year)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Phase 1 2021	2.06	2.18	7.25	1.68	**0.48**
Phase 2 2022	1.87	2.04	6.77	1.68	**0.48**
Phase 3 2023	1.83	1.74	6.32	1.68	**0.48**
Phase 4 2024	1.80	1.65	5.95	1.68	**0.48**
Phase 5 2025	1.95	1.59	5.66	1.69	**0.48**
Total Project Emissions	***9.50***	***9.20***	***31.94***	***8.40***	***2.39***
Significance threshold	10	10	100	15	**15**
Exceed threshold—significant impact?	No	No	No	No	**No**

Notes:
ROG = reactive organic gases NO_X = nitrogen oxides PM_{10} and $PM_{2.5}$ = particulate matter
Area source emissions include emissions from natural gas, landscape, and painting.

<u>Summary of Projections</u>

In accordance with CEQA Guidelines Section 15064, subdivision (h)(3), a lead agency may determine that a Project's incremental contribution to a cumulative effect is not cumulatively considerable if the Project complies with the requirements in a previously approved plan or mitigation program.

The 2007 8-Hour Ozone Plan contains measures to achieve reductions in emissions of ozone precursors, and sets plans towards attainment of ambient ozone standards by 2023. The 2012 $PM_{2.5}$ Plan and the 2015 $PM_{2.5}$ Plan for the 1997 $PM_{2.5}$ Standard require fewer NO_X reductions to

[11] Ibid. Page 82.

attain the $PM_{2.5}$ standard than the Ozone Plan, so the Ozone Plan is considered the applicable plan for reductions of the ozone precursors NO_X and ROG. The 2012 $PM_{2.5}$ Plan requires reductions in directly emitted $PM_{2.5}$ from combustion sources, such as diesel engines and fireplaces, and from fugitive dust to attain the ambient standard and is the applicable plan for $PM_{2.5}$ emissions. $PM_{2.5}$ is also formed in secondary reactions in the atmosphere involving NO_X and ammonia to form nitrate particles. Reductions in NO_X required for ozone attainment are also sufficient for $PM_{2.5}$ attainment. As discussed in Impact 3.3-R-1, the Project is consistent with all applicable control measures in the air quality attainment plans. The Project would comply with any District rules and regulations that may pertain to implementation of the AQPs. Therefore, impacts would be less than significant with regard to compliance with applicable rules and regulations.

This Project does not exceed SJVAPCD thresholds and will reduce its cumulative impact through compliance with Rule 9510; therefore, the Project is considered less than significant for this criterion.

Project Health Impacts

In the 5th District Court of Appeal case *Sierra Club v. County of Fresno (Friant Ranch, L.P.)*, the Court found the project EIR deficient because it did not identify specific health-related effects resulting from the estimated amount of pollutants generated by the project. The ruling stated that the EIR should give a "sense of the nature and magnitude of the 'health and safety problems' caused by a project's air pollution. The EIR should translate the emission numbers into adverse impacts or to understand why such translation is not possible at this time (and what limited translation is, in fact, possible)."

The standard measure of the severity of impact is the concentration of pollutant in the atmosphere compared to the ambient air quality standard for the pollutant for a specified period of time. The severity of the impact increases with the concentration and the amount of time that people are exposed to the pollutant. The pollutants of concern in the Friant Ranch ruling were regional criteria pollutants ozone, and PM_{10}. It is important to note that the potential for localized impacts can be addressed through dispersion modeling. The SJVAPCD includes screening criteria that if exceeded would require dispersion modeling to determine if project emissions would result in a significant health impact. For this Project, no significant localized health impacts would occur.

Emissions throughout the San Joaquin Valley are projected to markedly decline in the coming decade. The SJVAPCD 2016 Ozone Plan predicts NO_X emissions will decline to 103 tons per day

by 2029 or 54 percent from 2019 levels through implementation of control measures included in the plan. This means that ozone health impacts to residents of the San Joaquin Valley will be lower than currently experienced and most areas of the San Joaquin Valley will have attained ozone air quality standards. The plan accounts for growth in population at rates projected by the State of California for the San Joaquin Valley, so only cumulative projects that would exceed regional growth projections would potentially delay attainment and prolong the time and the number of people would experience health impacts. It is unlikely that anyone would experience greater impacts from regional emissions than currently occur.

Cumulative Health Impacts

The Air Basin is in nonattainment for ozone, PM_{10} (State only), and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as children, the elderly, and the infirm). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects. However, the health effects are a factor of the dose-response curve. Concentration of the pollutant in the air (dose), the length of time exposed, and the response of the individual are factors involved in the severity and nature of health impacts. If a significant health impact results from project emissions, it does not mean that 100 percent of the population would experience health effects.

Since the Basin is nonattainment for ozone, PM_{10}, and $PM_{2.5}$, it is considered to have an existing significant cumulative health impact without the Project. When this occurs, the analysis considers whether the Project's contribution to the existing violation of air quality standards is cumulatively considerable. The SJVAPCD regional thresholds for NO_X, VOC, PM_{10}, or $PM_{2.5}$ are applied as cumulative contribution thresholds. Projects that exceed the regional thresholds would have a cumulatively considerable health impact. As shown in Table 3.3-5 and Table 3.3-6, the regional analysis of construction and operational emissions indicates that the Project would not exceed the District's significance thresholds and the Project is consistent with the applicable Air Quality Plan.

The SJVAPCD Air Quality Attainment Plans predict that nonattainment pollutant emissions will continue to decline each year as regulations adopted to reduce these emissions are implemented, accounting for growth projected for the region. Therefore, the cumulative health impact will also decline even with the Project's emission contribution.

Mitigation Measures

None Required.

Impact 3.2-3: *Would the project expose sensitive receptors to substantial pollutant concentrations?*

Less Than Significant Impact.

Sensitive Receptors

Those who are sensitive to air pollution include children, the elderly, and persons with pre-existing respiratory or cardiovascular illness. The District considers a sensitive receptor a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools. The closest off-site sensitive receptors are existing residences located adjacent to the Project site to the north, east, south, and west. As a residential land use development Project, proposed residences included as part of the Project would be considered sensitive receptors once occupied.

Off-site Sensitive Receptors

Impacts to receptors located outside the Project boundaries would occur primarily during Project construction. Construction emissions commencing with the year 2020 and continue until Project buildout. Construction activities are expected to occur over several years as the subdivision is gradually built out; however, most emissions are expected to occur during the initial site preparation and grading activities and to a lesser extent during ground up construction. For criteria pollutants, impacts to receptors located outside of the Project are based on emissions during the highest emissions during any construction year. As shown in Table 3.3-5 and Table 3.3-6 emissions generated from construction and operation of the Project are less than SJVAPCD screening criteria. Therefore, this impact would be less than significant.

On-site Sensitive Receptors

The Project is not a significant source of TAC emissions. Construction activities produce short-term emissions that would not contribute substantially to cancer risk, which is estimated on a 70-year exposure period.

Construction: ROG

ROG is emitted during the application of architectural coatings (painting). The amount emitted is dependent on the amount of ROG (or VOC) in the paint. ROG emissions are typically an

indoor air quality health hazard concern rather than an outdoor air quality health hazard concern. Therefore, exposure to ROG during architectural coatings is a less than significant health impact.

There are three types of asphalt that are typically used in paving: asphalt cements, cutback asphalts, and emulsified asphalts. However, SJVAPCD Rule 4641 prohibits the use of the following types of asphalt: rapid cure cutback asphalt; medium cure cutback asphalt; slow cure asphalt that contains more than one-half (0.5) percent of organic compounds that evaporate at 500 degrees Fahrenheit (°F) or lower; and emulsified asphalt containing organic compounds, in excess of 3 percent by volume, that evaporate at 500°F or lower. An exception to this is medium cure asphalt when the National Weather Service official forecast of the high temperature for the 24-hour period following application is below 50°F.

The acute (short-term) health effects from worker direct exposure to asphalt fumes include irritation of the eyes, nose, and throat. Other effects include respiratory tract symptoms and pulmonary function changes. The studies were based on occupational exposure of fumes. Residents are not in the immediate vicinity of the fumes; therefore, they would not be subjected to concentrations high enough to evoke a negative response. In addition, the restrictions that are placed on asphalt in the San Joaquin Valley reduce ROG emissions from asphalt and exposure. The impact to nearby sensitive receptors from ROG during construction would be less than significant.

Localized Pollutant Screening Analysis

Emissions occurring at or near the Project have the potential to create a localized impact, also referred to as an air pollutant hotspot. Localized emissions are considered significant if, when combined with background emissions, they would result in exceedance of any health-based air quality standard. The impact from localized pollutants is based on the impact to the nearest sensitive receptor.

The SJVAPCD's GAMAQI includes screening thresholds for identifying projects that need detailed analysis for localized impacts. Projects with on-site emission increases from construction activities or operational activities that exceed the 100 pounds per day screening level of any criteria pollutant after compliance with Rule 9510 and implementation of all enforceable mitigation measures would require preparation of an ambient air quality analysis. The criteria pollutants of concern for localized impact in the SJVAB are PM_{10}, $PM_{2.5}$, NO_X, and CO. There is no localized emission standard for ROG and most types of ROG are not toxic and have no health-based standard; however, ROG was included for informational purposes only.

The highest daily emissions occur during Project grading activities except for ROG emissions, which are highest during application of architectural coatings. The Project would be constructed incrementally with Tract 6212 and Tract 6276 constructed first. The sequence and location of development after those tracts are constructed have not been determined; therefore, localized impacts from NO_2 and PM on completed residences would be speculative.

Table 3.3-7
Operational Air Pollutant Emissions[12]

Maximum Daily Emissions by Year	Emissions (pounds per day)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Phase 1 2021	**4.42**	**45.45**	**38.33**	**10.32**	**6.39**
Phase 1 2022	70.12	35.77	37.70	2.39	**1.83**
Phase 2 2022	5.17	46.35	47.87	9.89	**5.99**
Total for 2022	**75.29**	**82.12**	**85.58**	**12.28**	**7.82**
Phase 2 2023	70.94	42.45	47.34	2.60	**2.03**
Phase 3 2023	4.76	42.45	47.34	9.54	**5.67**
Total for 2023	**75.69**	**84.90**	**94.68**	**12.15**	**7.71**
Phase 3 2024	70.92	39.76	46.98	2.36	**1.80**
Phase 4 2024	4.45	39.76	46.98	9.51	**5.64**
Total for 2024	**75.37**	**79.51**	**93.97**	**11.87**	**7.44**
Phase 4 2025	70.91	36.98	46.63	2.12	**1.58**
Phase 5 2025	2.97	27.97	26.75	9.37	**5.51**
Total for 2025	**73.88**	**64.95**	**73.38**	**11.48**	**7.09**
Phase 5 2026	**71.33**	**14.01**	**17.46**	**1.15**	**0.67**
Highest Emissions in Any Year	***75.69***	***84.90***	***94.68***	***12.15***	***7.71***
Screening Thresholds	100	100	100	100	**100**
Exceeds Threshold (Yes or No)	No	No	No	No	**No**

Notes:
NO_X = nitrogen oxides CO = carbon monoxide PM_{10} and $PM_{2.5}$ = particulate matter
N/A = Not applicable
Emissions shown are from the summer model output. There is no ambient air quality standard for ROG.

Maximum Daily Operational Emissions

An analysis of maximum daily emissions during operation was conducted to determine if emissions would exceed 100 pounds per day for any pollutant of concern. The maximum daily operational emissions would occur at Project buildout. The Project was modeled for 2025, which is the estimated year of first occupancy of the last Project phase. Operational emissions include emissions generated on-site by area sources such as natural gas combustion and landscape

[12] Ibid. Page 88.

maintenance, and off-site by motor vehicles accessing the Project. Most motor vehicle emissions would occur distant from the site and would not contribute to a violation of ambient air quality standards; therefore, only emissions from vehicles operating within one half mile of the site were included in the assessment. The results of the screening analysis are presented in Table 3.3-8.

Table 3.3-8
Operational Air Pollutant Emissions[13]

Maximum Daily Emissions per Source Category	Emissions (pounds per day)				
	ROG	**NO_X**	**CO**	**PM_{10}**	$PM_{2.5}$
Area	8.72	1.71	14.67	0.20	**0.20**
Energy	0.12	1.05	0.45	0.09	**0.09**
Mobile	0.20	0.49	1.86	0.66	**0.18**
Total	***9.05***	***3.26***	***16.98***	***0.94***	***0.47***
Screening threshold	100	100	100	100	**100**
Exceed screening threshold?	No	No	No	No	**No**

Notes:
NO_X = nitrogen oxides CO = carbon monoxide PM_{10} and $PM_{2.5}$ = particulate matter
N/A = Not applicable
Emissions shown are from the summer model output. There is no ambient air quality standard for ROG.

Operation: ROG

During operation, ROG would be emitted primarily from motor vehicles. Direct exposure to ROG from Project motor vehicles would not result in health effects, because the ROG would be distributed across miles and miles of roadway and in the air. The concentrations would not be great enough to result in direct health effects.

Operation: PM_{10}, $PM_{2.5}$, CO, NO_2

As shown in Table 3.3-8, localized emissions of PM_{10}, $PM_{2.5}$, CO, and NO_2 would not exceed the SJVAPCD screening thresholds at full Project buildout. Residential development is an insignificant source of these pollutants, except for projects that allow woodburning devices that emit PM_{10}, $PM_{2.5}$ in wood smoke. The Project will include only natural gas-fueled fireplaces and inserts that are insignificant sources of $PM_{2.5}$ and PM_{10}. Therefore, the Project would not expose sensitive receptors to substantial criteria air pollutant concentrations during operation.

Carbon Monoxide Hot Spot Analysis

[13] Ibid. Page 89.

Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. The SJVAPCD provides screening criteria to determine when to quantify local CO concentrations based on impacts to the level of service (LOS) of intersections in the Project vicinity.

Project construction would result in minor increases in traffic for the surrounding road network during the duration of construction. Motor vehicles accessing the site when it becomes operational would result in a minor increase in daily trips that would not substantially reduce the LOS on roads serving the site. The highest background 8-hour average CO concentration during the latest year it was monitored is 2.06 ppm, which is 78 percent lower than the CAAQS of 9.0 ppm or the NAAQS of 9 ppm.

A sensitivity analysis using the CALINE4 CO Hotspot model was run for the General Plan MEIR to determine the volume of trips that would be required to exceed the most stringent CO standard. At triple the predicted peak for General Plan buildout of 36,000 peak-hour trips, the hourly concentration was 7.5 ppm and an 8-hour concentration of 6.0 ppm. Based on this analysis, it is extremely unlikely that a CO hotspot will occur in the Plan Area. CO emissions are predicted to continue to decline as old vehicles are retired and cleaner new motor vehicles take their place.

Therefore, no CO hotspot modeling is required for new projects during General Plan Buildout unless intersection volumes exceed 36,000 peak-hour trips, which is not projected to occur with the Project.

<u>Construction: Toxic Air Contaminants</u>

Project construction would involve the use of diesel-fueled vehicles and equipment that emit DPM, which is considered a TAC. The SJVAPCD's latest threshold of significance for TAC emissions is an increase in cancer risk for the maximally exposed individual of 20 in a million (formerly 10 in a million). The SJVAPCD's 2015 GAMAQI does not currently recommend analysis of TAC emissions from Project construction activities, but instead focuses on projects with operational emissions that would expose sensitive receptors over a typical lifetime of 70 years. Residential projects produce limited amounts of TAC emissions during operation and thus have not been subject to Project TAC analysis. Most emissions from construction activities occur during the grading and site preparation phases that occur over the first three months of construction and do not overlap with Project operations. Limited amounts of diesel equipment are used during ground-up construction of individual houses that occurs during the majority of the construction schedule when some units may be occupied. Construction equipment fleet

operators are subject to ARB's In Use Offroad Equipment Fleet Regulation, which requires the use of increasing amounts of lower-emitting equipment that will help to ensure that risk would not exceed SJVAPCD thresholds.

Construction phase risks would be considered acute health risks as opposed to cancer risks, which are long-term. OEHHA has yet to define acute risk factors for diesel particulates that would allow the calculation of a hazards risk index; thus, evaluation of this impact would be speculative and no further discussion is necessary.

Operation: Toxic Air Contaminants

In the *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal.4th 369 (2015) (Case No. S213478) the California Supreme Court held that "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a Project's future users or residents. But when a proposed Project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the Project's impact on the environment—and not the environment's impact on the Project—that compels an evaluation of how future residents or users could be affected by exacerbated conditions." Although the Court ruled that impacts from the existing environment on projects are not required to be addressed under CEQA, land uses such as gasoline stations, dry cleaners, distribution centers, and auto body shops can expose residents to high levels of TAC emissions if they are close to the Project site. Information regarding the location of existing TAC sources is provided for disclosure purposes only and not as a measure of the Project's significance under CEQA.

Consistency with these recommendations is assessed as follows:

- Heavily traveled roads. ARB recommends avoiding new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. Epidemiological studies indicate that the distance from the roadway and truck traffic densities were key factors in the correlation of health effects, particularly in children. The Project is located on the west side of North Grantland Avenue north of West Ashlan and south of West Shaw Avenue. The traffic volumes on the road segments nearest the Project are available for North Grantland south of West Shaw Avenue and West Shaw east of North Grantland Avenue for 2011. The traffic volume of North Grantland Avenue was 3,170 trips per day. The traffic volume on West

Shaw Avenue was 8,880 trips per day. No roads serving the Project would exceed this criterion.[14]

- Distribution centers. ARB also recommends avoiding siting new sensitive land uses within 1,000 feet of a distribution center. The Project is not located within 1,000 feet of a distribution center.

- Fueling stations. ARB recommends avoiding new sensitive land uses within 300 feet of a large fueling station (a facility with a throughput of 3.6 million gallons per year or greater). ARB recommends a 50-foot separation is recommended for typical gas dispensing facilities. The nearest gas station is located at 4395 W. Ashlan Avenue, approximately 2.6 miles east of the Project site.

- Dry cleaning operations. ARB recommends avoiding siting new sensitive land uses within 300 feet of any dry-cleaning operation that uses perchloroethylene. For operations with two or more machines, ARB recommends a buffer of 500 feet. For operations with three or more machines, ARB recommends consultation with the local air district. The nearest dry-cleaning operation is approximately 4.6 miles northeast of the Project site at 3071 W. Shaw Avenue.

- Auto body shops. Auto body shops have the potential to emit TACs related to painting. The nearest auto body shop is located at 4605 N. Blythe Avenue approximately 3.3 miles northeast of the Project site, which is beyond the distance that would result in a measurable impact.

Valley Fever

Valley fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, *Coccidioides immitis* (*C. immitis*). The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and they include dust storms, grading, and recreational off-road activities.

The San Joaquin Valley is considered an endemic area for Valley fever. By geographic region, hospitalizations for Valley fever in the San Joaquin Valley increased from 230 (6.9 per 100,000 population) in 2000 to 701 (17.7 per 100,000 population) in 2007. Within the region, Kern County

[14] Ibid. Page 91.

reported the highest hospitalization rates, increasing from 121 (18.2 per 100,000 population) in 2000 to 285 (34.9 per 100,000 population) in 2007, and peaking in 2005 at 353 hospitalizations (45.8 per 100,000 population). The Centers for Disease Control and Prevention indicates that 752 of the 8,657 persons (8.7 percent) hospitalized in California between 2000 and 2007 for Valley fever died (CDC 2009). California experienced 7,466 new cases of Valley fever in 2017. A total of 275 Valley fever cases were reported in Fresno County in 2017 for a rate of 82.4 per 100,000 people.[15]

The distribution of *C. immitis* within endemic areas is not uniform and growth sites are commonly small (a few tens of meters) and widely scattered. Known sites appear to have some ecological factors in common suggesting that certain physical, chemical, and biological conditions are more favorable for *C. immitis* growth. Avoidance, when possible, of sites favorable for the occurrence of *C. immitis* is a prudent risk management strategy. Listed below are ecologic factors and sites favorable for the occurrence of *C. immitis*:

1) Rodent burrows (often a favorable site for *C. immitis*, perhaps because temperatures are more moderate and humidity higher than on the ground surface)

2) Old (prehistoric) Indian campsites near fire pits

3) Areas with sparse vegetation and alkaline soils

4) Areas with high salinity soils

5) Areas adjacent to arroyos (where residual moisture may be available)

6) Packrat middens

7) Upper 30 centimeters of the soil horizon, especially in virgin undisturbed soils

8) Sandy, well-aerated soil with relatively high water-holding capacities

Sites within endemic areas less favorable for the occurrence of *C. immitis* include:

1) Cultivated fields

2) Heavily vegetated areas (e.g. grassy lawns)

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[15] Ibid. Page 92.

3) Higher elevations (above 7,000 feet)

4) Areas where commercial fertilizers (e.g. ammonium sulfate) have been applied

5) Areas that are continually wet

6) Paved (asphalt or concrete) or oiled areas

7) Soils containing abundant microorganisms

8) Heavily urbanized areas where there is little undisturbed virgin soil (USGS 2000).

The Project site is situated in a city growth area. The Project includes urbanization of a site that was formerly used for agricultural purposes. Therefore, implementation of the Project would have a low probability of the site having *C. immitis* growth sites and exposure to the spores from disturbed soil.

Construction activities would generate fugitive dust that could contain *C. immitis* spores. The Project will minimize the generation of fugitive dust during construction activities by complying with the District's Regulation VIII. Therefore, this regulation, combined with the relatively low probability of the presence of *C. immitis* spores, would reduce Valley fever impacts to less than significant.

During operations, dust emissions are anticipated to be negligible, because most of the Project area would be occupied by buildings, pavement, and landscaped areas. This condition would preclude the possibility of the Project from providing habitat suitable for *C. immitis* spores and for generating fugitive dust that may contribute to Valley fever exposure. Impacts would be less than significant.

<u>Naturally Occurring Asbestos</u>

According to the US Geological Survey, there are no areas of naturally occurring asbestos in the Project area. Therefore, development of the Project is not anticipated to expose receptors to naturally occurring asbestos. Impacts would be less than significant.

In summary, the Project would not exceed SJVAPCD localized emission daily screening levels for any criteria pollutant. The Project is not a significant source of TAC emissions during construction or operation. The Project is not in an area with suitable habitat for Valley fever spores and is not in area known to have naturally occurring asbestos.

Therefore, the Project would result in ***less than significant impacts*** to sensitive receptors.

Mitigation Measures: None are required.

Impact 3.2-4: *Would the project create objectionable odors affecting a substantial number of people?*

Less Than Significant. Land uses that are typically identified as sources of objectionable odors include landfills, transfer stations, sewage treatment plants, wastewater pump stations, composting facilities, feed lots, coffee roasters, asphalt batch plants, and rendering plants. The Project would not engage in any of these activities. Therefore, the Project would not be considered a generator of objectionable odors during operations.

During construction, the various diesel-powered vehicles and equipment in use on-site would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the Project's site boundaries. The potential for diesel odor impacts would therefore be ***less than significant.***

Mitigation Measures: None are required.

3.6 Energy

This section of the DEIR analyzes the Project's potential impacts on energy resources. The information and analysis presented in this Section are based on the Air Quality and Greenhouse Gas/Energy Analysis Report for the Parc West Residential Development prepared by Mitchell Air Quality Consulting. The full report can be reviewed in Appendix B.

Environmental Setting

Electricity

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands.

Energy Usage

Energy usage is typically quantified using the British Thermal Unit (BTU). Total energy usage in California was 7,881 trillion BTU's in 2017 (the most recent year for which this specific data is available), which equates to an average of 200 million BTU's per capita.[1] Of California's total energy usage, the breakdown by sector is 40 percent transportation, 23 percent industrial, 19 percent commercial, and 18 percent residential.[2] Electricity and natural gas in California are generally consumed by stationary users such as residences and commercial and industrial facilities, whereas petroleum consumption is generally accounted for by transportation-related energy use.

While BTUs measure total energy usage, electricity is generally measured in kilowatt-hours (kWh) which is the standard billing unit for energy delivered to consumers by electrical utilities.

[1] U.S. Energy Information Administration, California State Profile and Energy Estimates. https://www.eia.gov/state/print.php?sid=CA. Accessed May 2020.
[2] Ibid.

The electricity consumption attributable to Fresno County from 2007 to 2018 is provided in Table 3.6-1. As indicated, energy consumption in Fresno County varied approximately 12 percent over the last 11 years.

Table 3.6-1
Electricity Consumption in Fresno County 2007 – 2018[3]

Year	Electricity Consumption (in millions of kilowatt hours)
2007	7,105
2008	7,118
2009	7,078
2010	6,903
2011	6,886
2012	7,382
2013	7,513
2014	7,686
2015	7,686
2016	7,625
2017	7,437
2018	7,652

Natural Gas

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs, mainly located outside the State, and delivered through high-pressure transmission pipelines. The natural gas transportation system is a nationwide network, and, therefore, resource availability is typically not an issue. Natural gas provides almost one-third of the state's total energy requirements and is used in electricity generation, space heating, cooking, water heating, industrial processes, and as a transportation fuel.

Natural gas is provided to the City of Fresno by Pacific Gas & Electric Company. The natural gas consumption attributable to Fresno County from 2007 to 2018 is provided in Table 3.6-2, Natural

[3] California Energy Commission. Energy Reports. Electricity Consumption by County. https://ecdms.energy.ca.gov/elecbycounty.aspx. Accessed May 2020.

Gas Consumption in Fresno County 2007-2018. Natural gas consumption in Fresno County varied 28% between 2007 and 2018.

Table 3.6-2
Natural Gas Consumption in Fresno County 2007 – 2018[4]

Year	Natural Gas Consumption (in millions of therms)
2007	298
2008	278
2009	271
2010	283
2011	296
2012	306
2013	300
2014	295
2015	300
2016	285
2017	341
2018	347

Transportation Energy

According to the U.S. Energy Administration, transportation accounted for 40 percent of California's total energy consumption in 2017.[5] In 2019, California consumed 15.3 billion gallons of gasoline and 3.0 billion gallons of diesel fuel.[6] Petroleum-based fuels currently account for 90% of California's transportation energy sources[7]; however, the state is now working on developing flexible strategies to reduce petroleum use. Accordingly, gasoline consumption in California has declined.

According to the Board of Equalization (BOE), statewide taxable sales figures indicate a total of 15,471 million gallons of gasoline and 1,777 million gallons of diesel fuel were sold in 2018.[8]

[4] California Energy Commission. Energy Reports. Gas Consumption by County. http://www.ecdms.energy.ca.gov/gasbycounty.aspx Accessed May 2020.
[5] U.S. Energy Information Administration, California State Profile and Energy Estimates. https://www.eia.gov/state/print.php?sid=CA. Accessed May 2020.
[6] California Department of Tax and Fee Administration. August 2019 – Motor Vehicle Fuel 10 Year Reports and Taxable Diesel Gallons 10 Year Report. https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm. Accessed May 2020.
[7] California Energy Commission. Draft Staff Report. 2017-2018 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program. Page 7. https://www.energy.ca.gov/2016publications/CEC-600-2016-007/CEC-600-2016-007-SD.pdf. Accessed May 2020.
[8] California Energy Commission. California Retail Fuel Outlet Annual Reporting (CEC-A15) Results. https://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html. Accessed May 2020.

Although exact estimates are not available by County, the California Energy Commission reports that more than 217 million gallons of gasoline were sold in Fresno County in 2018.[9]

Regulatory Setting

Federal

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Energy and Policy Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration (NHTSA) is responsible for establishing additional vehicle standards.

Energy Independence and Security Act of 2007

This Act set increased Corporate Average Fuel Economy (CAFÉ) standards for motor vehicles and includes the following provisions related to energy efficiency:

- Renewable fuel standards (RFS)
- Appliance and lighting efficiency standards
- Building energy efficiency

This Act requires increasing levels of renewable fuels to replace petroleum. The U.S. EPA is responsible for developing and implementing regulations to ensure transportation fuel sold into the US contains a minimum volume of renewable fuel.

The RFS programs regulations were developed in collaboration with refiners, renewable fuel products, and other stakeholders and were created under the Energy Policy Act of 2005. The RFS program established the first renewable fuel volume mandate in the US. As required under the act, the original RFS program required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the Act, the RFS program was expanded in several key ways that laid the foundation for achieving significant reductions of GHG emissions through the use of renewable fuels, for reducing imported petroleum, and for encouraging the development and expansion of the nation's renewable fuels sector. The updated program is referred to as RFS2 and includes the following:

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[9] California Energy Commission. California 2018 Estimated Gasoline Sales by County. https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html. Accessed May 2020.

- EISA expanded the RFS program to include diesel, in addition to gasoline:
- EISA increase the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022;
- EISA established new categories of renewable fuel and set separate volume requirements for each one; and
- EISA required by the U.S. EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.[10]

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternate energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

Federal Vehicle Standards

In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; and, in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of carbon dioxide (CO2) in model year 2025, on an average industry fleetwide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014 – 2018. The standards for CO2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6to 23 percent over the 2010 baselines.

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[10] U.S. EPA. Renewable Fuel Standard Program. Overview for Renewable Fuel Standard. https://www.epa.gov/renewable-fuel-standard-program/overview-renewable-fuel-standard. Accessed May 2020.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018-2027 for certain trailers, and model years 2021-2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program.[11]

In August 2018, The USEPA and NHTSA released a notice of proposed rulemaking called Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule). This rule would modify the existing CAFE standards and tailpipe carbon dioxide emissions standards for passenger cars and light trucks, and establish new standards covering model years 2021-2026. SAFE standards are expected to uphold model year 2020 standards through 2026.[12]

State of California

Integrated Energy Policy Report

Senate Bill 138 (Bowen Chapter 568, Statues of 2002) requires the California Energy Commission to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public and safety (Public Resources Code §25301(a)).

The 2016 Integrated Energy Policy Report[13] (IEPR) was published in February 201, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2016 IEPR focuses on a variety of topics such as including the environmental performance of the electricity generation system, landscape-scale planning, transportation fuel supply reliability issues, and the California Energy Demand Forecast.

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[11] U.S. Department of Transportation. Briefing Room. EPA and DOT Finalize Greenhouse Gas and Fuel Efficiency Standards for Heavy-Duty Trucks. https://www.transportation.gov/briefing-room/epa-and-dot-finalize-greenhouse-gas-and-fuel-efficiency-standards-heavy-duty-trucks. Accessed May 2020.
[12] U.S. Department of Transportation. SAFE. The Safer Affordable Fuel-Efficient 'SAFE' Vehicles Rule. https://www.nhtsa.gov/corporate-average-fuel-economy/safe. Accessed May 2020.
[13] California Energy Commission. 2016 Integrated Energy Policy Report Update. https://www.energy.ca.gov/2016_energypolicy/. Accessed May 2020.

State of California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental end energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators and encouragemnet of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24)

Residential and Nonresidential Buildings in 1978 in response to a legislative mandate to reduce energy consumption in California. Although not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods.

Part 11 of the Title 24 Building Standards Code is referred to as the California Green Building Standards Code (CALGreen Code). The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental air quality." The CALGreen Code is not intended to substitute or be identified as meeting the certification requirements of any green building program that is not established and adopted by the California Building Standards Commission (CBSC).

CALGreen contains both mandatory and voluntary measures. For nonresidential land uses, there are 39 mandatory measures including, but not limited to, exterior light pollution reduction, wastewater reduction by 20 percent, and commissioning of projects over 10,000 square feet. Two tiers of voluntary measures apply to nonresidential land uses, for a total of 36 additional elective measures.

California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. Starting in 2020, the 2019 standards will improve upon existing standards, focusing on three key areas: proposing new requirements for installation of solar photovoltaics for newly

constructed low-rise residential buildings; updating current ventilation and Indoor Air Quality (IAQ) requirements; and extending Title 24 Part 6 to apply to healthcare facilities. The 2019 Building Energy Efficiency Standards are approximately 53 percent more efficient than the 2016 Title 24 Energy Standards for residential development and approximately 30 percent more efficient for nonresidential development.

Executive Order B-30-15

Executive Order B-30-15, 2030 Carbon Target and Adaptation, issued by Governor Brown in April 2015, set a target of reducing GHG emissions by 40 percent below 1990 levels in 2030. To achieve this ambitious target, Governor Brown identified five key goals for reducing GHG emissions in California through 2030:

- Increase the amount of renewable electricity provided state-wide to 50 percent;
- Double energy efficiency savings achieved in existing buildings and make heating fuels cleaner;
- Reduce petroleum use in cars and trucks by up to 50 percent;
- Reduce emissions of short-lived climate pollutants; and
- Manage farms, rangelands, forests, and wetlands to increasingly store carbon.

Senate Bill (SB) 375 (Sustainable Communities and Climate Protection Act)

In January 2009, California SB 375, known as the Sustainable Communities and Climate Protection Act, went into effect. The objective of SB 375 is to better integrate regional planning of transportation, land use, and housing to reduce sprawl and ultimately reduce GHG emissions and other air pollutants. SB 375 tasks CARB to set GHG reduction targets for each of California's 18 regional Metropolitan Planning Organizations (MPOs). Each MPO is required to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP). The SCS is a growth strategy in combination with transportation policies that will show how the MPO will meet its GHG reduction target. If the SCS cannot meet the reduction goal, an Alternative Planning Strategy may be adopted that meets the goal through alternative development, infrastructure, and transportation measures or policies.

In 2010, CARB released the proposed GHG reduction targets for the MPOs. The proposed reduction targets for the Fresno COG region were five percent by year 2020 and ten percent by

year 2035 through September of 2018, then six percent by 2020 and 13 percent by 2035 beginning in October of 2018.[14]

Renewables Portfolio Standard Program

In 2002, California established its Renewables Portfolio Standard (RPS) Program, with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent of retail sales by 2017. The 2003 Integrated Energy Policy Report recommended accelerating that goal to 20 percent by 2010, and the 2004 Energy Report Update further recommended increasing the target to 33 percent by 2020. The state's Energy Action Plan also supported this goal. In 2006 under Senate Bill 107, California's 20 percent by 2010 RPS goal was codified. The legislation required retail sellers of electricity to increase renewable energy purchases by at least one percent each year with a target of 20 percent renewables by 2010. Publicly owned utilities set their own RPS goals, recognizing the intent of the legislature to attain the 20 percent by 2010 target.

In 2008, Governor Schwarzenegger signed Executive Order S-14-08 requiring that "all retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020." The following year, Executive Order S-21-09 directed CARB to enact regulations to achieve the goal of 33 percent renewables by 2020.

In 2015, Governor Brown signed Senate Bill 350 to codify ambitious climate and clean energy goals. One key provision of SB 350 is for retail sellers and publicly owned utilities to procure "half of the state's electricity from renewable sources by 2030."

The State's RPS program was further strengthened by SB 100 in 2018. SB 100 revised the State's RPS Program to require retail sellers of electricity to serve 50 percent and 60 percent of the total kilowatt-hours sold to retail end-use customers be served by renewable energy sources by 2026 and 2030, respectively, and to require that 100 percent of all electricity supplied come from renewable sources by 2045.

Executive Order B-55-18

In 2018, Governor Brown signed EO B-55-18 to achieve carbon neutrality by moving California to 100 percent clan energy by 2045. This Executive Order also includes specific measures to reduce

[14] California Air Resources Board. Regional Plan Targets. https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets. Accessed May 2020.

GHG emissions via clean transportation, energy efficient buildings, directing cap-and-trade funds to disadvantaged communities, and better management of the state's forest land.

Low Carbon Fuel Standard Regulation

CARB initially approved the Low Carbon Fuel Standard (LCFS) regulation in 2009, identifying it as one of the nine discrete early action measures in the 2008 Scoping Plan to reduce California's GHG emissions. The LCFS regulation defines a Carbon intensity, or "CI," reduction target (or standard) for each year, which the rule refers to as the "compliance schedule." The LCFS regulation requires a reduction of at least 10 percent in the CI of California's transportation fuels by 2020 and maintains that target for all subsequent years.

CARB has begun the rulemaking process for strengthening the compliance target of the LCFS through the year 2030. For a new LCFS target, the preferred scenario in the 2017 Scoping Plan Update identifies an 18 percent reduction in average transportation fuel carbon intensity, compared to a 2010 baseline, by 2030 as one of the primary measures for achieving the state's GHG 2030 target. Achieving the SB 32 reduction goals will require the use of a low carbon transportation fuels portfolio beyond the amount expected to result from the current compliance schedule.[15]

Advanced Clean Cars Program

In 2012, CARB approved the Advanced Clean Cars (ACC) Program (formerly known as Pavley II) for model years 2017-2025. The components of the ACC program are the Low-Emission Vehicle (LEV) regulations and the Zero-Emission Vehicle (ZEV) regulation. The program combines the control of smog, soot, and global warming gases with requirements for greater numbers of zero-emission vehicles into a single package of standards. By 2025, new automobiles under California's Advanced Clean Car program will emit 34 percent less global warming gases and 75 percent less smog-forming emissions.

EO B-48-18, issued by Governor Brown in 2018, establishes a target to have five million ZEVs on the road in California by 2030. This Executive Order is supported by the State's 2018 ZEV Action Plan Priorities Update, which expands upon the State's 2016 ZEV Action Plan. While the 2016

[15] California Air Resources Board. CARB amends Low Carbon Fuel Standard for wider impact. https://ww2.arb.ca.gov/index.php/news/carb-amends-low-carbon-fuel-standard-wider-impact. Accessed May 2020.

plan remains in effect, the 2018 update function as an addendum, highlighting the most important actions State agencies are taking in 2018 to implement the directives of EO B-48-18.

Thresholds

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact related to energy if it will:

- Result in a wasteful, inefficient or unnecessary consumption of energy resources;
- Conflict with or obstruct state or local plans.

Impacts and Mitigation Measures

Impact 3.6-1: *Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*

Less Than Significant. Project implementation could increase the demand for electricity and natural gas within the Project area and gasoline consumption in the region during construction and operation of new land use developments.

Short Term Construction

Project construction is assumed to be completed over five years. Construction activities would consume energy through the operation of heavy off-road equipment, trucks, and worker traffic. Construction equipment fuel consumption for each of was based on equipment lists generated using CalEEMod default values. The fuel consumption of off-road equipment calculated in this analysis is based on an SCAQMD estimated fuel consumption rate of 0.05 gallon per horsepower-hour and the horsepower, usage hours, and load factors from CalEEMod model runs prepared for the Project's air quality analysis.

Based on the anticipated construction schedule and hours of use, construction equipment would result in the consumption of approximately 1,044,003 gallons of diesel fuel over the entire construction period.[16]

Worker, vendor, and haul trips would result in approximately 786,618 VMT over the entire construction period. A countywide average fuel consumption of 30.7 miles per gallon (mpg) for employee vehicles and 8.3 mpg for vendor trucks were obtained from EMFAC 2017. The results

[16] Mitchell Air Quality Consulting. Air Quality and Greenhouse Gas/Energy Analysis Report. Park West Residential Development. See Appendix B of this EIR. Page 123.

indicate that construction trips would consume approximately 27,070 gallons of motor vehicle fuel.[17]

Although the proposed Project would result in the consumption of an estimated 1,044,003 gallons of diesel and 27,070 gallons of motor vehicle fuels during construction, the Project is expected to achieve energy efficiencies typical for residential projects in California. Construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency, combined with local, state, and federal regulations limiting engine idling times and require recycling of construction debris, would further reduce the amount of transportation fuel demand during Project construction. Considering these reductions in transportation fuel use, the proposed Project would not result in the wasteful and inefficient use of energy resources during construction and impacts would be less than significant. Detailed modeling results are provided in Appendix B while construction energy use is summarized in Table .

Table 3.6-3: Construction Energy Consumption[18]

Activity	Variable	Consumption Rate	Consumption Amount
Construction Equipment Diesel Fuel Use	hp-hr of equipment use per project Hours of Use	0.05 gal/hp-hr 199,600 hours	**1,104,003 gallons (diesel)**
Construction Employee VMT	VMT/Project	VMT = 770,094 mpg = 30.7	**25,076 gallons (gasoline)**
Construction Vendor Truck VMT	VMT/Project	VMT = 16,524 mpg = 8.29	**1,993 gallons (diesel)**

Notes:

mpg = miles per gallon, VMT = vehicle miles traveled, hp-hr = horsepower per hour

Source of data for construction and VMT: CalEEMod 2016.3.2

Source of Fresno County mpg for 2025: EMFAC 2017.

[17] Ibid.
[18] Ibid. Page 124.

Operation Energy Consumption

Long-term energy consumption associated with the Project includes electricity and natural gas consumption by residents, energy required for water supply, treatment, distribution, and wastewater treatment, and motor vehicle travel. A summary of the Project's estimated operational energy consumption is provided in Table 3.6-4 and the analysis is provided on the following pages.

Table 3.6-4: Operational Energy Consumption[19]

Activity	Variable	Consumption Rate	Consumption Amount
Residential Electricity	844 Dwelling Unit	5,053 kWh/unit/year	**7.34 MWh/year**
Residential Natural Gas		17,726 kBTU/unit/year	**20,741,900 kBTU/year**
Water Supply, Treatment, and Conveyance and Wastewater Treatment	Water Use (Mgal)	71.7 Mgal/yr	**335,110 kWh/year**
Transportation	VMT/year mpg all Fuels	VMT/year = 21,848,042 miles mpg = 29.8	**734,388 gallons/year Transportation Fuels**

Notes:

MPG = miles per gallon Mgal = million gallons VMT = vehicle miles traveled

kW = kilowatts kWh = kilowatt-hours MWh = megawatt-hours MMBTU = million British thermal units

Source of data for energy use and VMT: CalEEMod 2016.3.2.

Source of Fresno County MPG for 2025: EMFAC 2017.

Electricity and Natural Gas Consumption

[19] Ibid. Page 127.

During operations the proposed Project would consume natural gas for space heating, water heating, and cooking associated with the land uses on the Project site. The natural gas consumption was estimated using the CalEEMod default values and results. The results of the analysis indicate that the Project would consume approximately 20,741,900 thousand British thermal units (kBTU) per year of natural gas per year during operation.[20]

In addition to the consumption of natural gas, the proposed Project would use electricity for lighting, appliances, and other uses associated with the Project. Electricity use during operations was estimated using CalEEMod default values. The results of the modeling indicate that the Project would use approximately 7,335,230 kilowatt-hours (kWh) of electricity per year.[21] Title 24 (2019) requires the installation of solar panels in residential developments. Variations in the amount installed can be due to local conditions and Project design. In addition, some projects may use community solar instead of rooftop solar installations. Although the energy estimates assume no solar will be installed, most electricity used by the residential portions of the Project is expected to be generated by zero emission renewable sources.

As described above, the proposed Project would result in a long-term increase in demand for electricity from PG&E. However, the Project would be designed to meet the most recent Title 24 standards. Title 24 specifically establishes energy efficiency standards for residential and non-residential buildings constructed in the State of California in order to reduce energy demand and consumption. Title 24 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies. Therefore, impacts from the wasteful or inefficient use of electricity or natural gas during operation of the Project would be less than significant.

Water Treatment, Conveyance, and Distribution

Water used for indoor and outdoor purposes requires electricity for water treatment, conveyance, and distribution. The Project's water demand was calculated from default values for the residential development using CalEEMod. Based on this methodology, the proposed Project is estimated to use approximately 1,650 million gallons of indoor water per year as well as 278 million gallons of outdoor water per year. This would result in the use of approximately 6,748,120 kWh of electricity per year.[22]

Although the proposed Project would result in electricity use from the treatment, conveyance, and distribution of water to the Project site, the Project would also require all water fixtures to be

[20] Ibid.
[21] Ibid.
[22] Ibid. Page 125.

compliant with the 2013 California Green Building Standards Code and the MWELO, which would reduce the amount of water used by the Project and require compliance with regulations relating to drought conditions. Therefore, the Project would not result in the wasteful or inefficient use of electricity for water treatment, conveyance, and distribution and impacts would be less than significant.

Wastewater Service

The Project would be served by the Fresno-Clovis Regional Wastewater Reclamation Facility. Project wastewater generation was estimated using CalEEMod default assumptions for indoor water use required by the Project land uses. Project indoor water use of 43.9 million gallons per day would result in the use of 238,041 kWh of electricity per year.[23] Compliance with the 2013 California Green Building Standards Code, would reduce the wastewater generated by the Project. Energy used for treating Project wastewater will increasingly be generated by renewable energy sources to comply with RPS standards that apply to the energy utility serving the Project area.

Wastewater service would require an extension of sewer lines to the treatment plant. The energy added for the extension and use of these facilities combined with the Project's estimated electricity and natural gas consumption would not result in substantial new energy generation or transmission infrastructure due to the location and capacity of existing energy infrastructure near the Project site. Additionally, the Project would be constructed over about five years, allowing for gradual expansion of facilities. Therefore, the Project would not result in the wasteful or inefficient use of electricity for wastewater treatment, and impacts would be less than significant.

Fuel Consumption

Project operations will generate vehicle trips. The Project was modeled with CalEEMod using ITE 10th Edition vehicle trip generation rates and default trip lengths. The results show that the vehicle trips generated would result in approximately 21,848,048 VMT per year. Based on a countywide average fuel consumption of 27.1 mpg from EMFAC 2017 for all vehicle classifications for 2025, the proposed Project would result in the consumption of an estimated 734,388 gallons per year of transportation fuel. [24]

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[23] Ibid.
[24] Ibid. Page 126.

Various federal and state regulations including the Low Carbon Fuel Standard, Pavley Clean Car Standards, and Low Emission Vehicle Program would serve to reduce the Project's transportation fuel consumption progressively into the future. In addition, the Project will include bike lanes, and trails that will increase trips by walking and bicycling. Therefore, the Project would be designed to avoid the wasteful and inefficient use of transportation fuel during operations and impacts would be less than significant.

State and federal regulatory requirements addressing fuel efficiency are expected to increase fuel efficiency over time as older, less fuel-efficient vehicles are retired. The efficiency standards and light/heavy vehicle efficiency/hybridization programs, contribute to increased fuel efficiency and therefore would reduce vehicle fuel energy consumption rates over time. The annual vehicular energy consumption calculated for the proposed Project was based on 2025 average rates for Fresno County. While the Project would increase the consumption of gasoline and diesel proportionately with projected population growth, the increase would be accommodated within the projected growth as part of the energy projections for the state and the region and would not require the construction of new regional energy production facilities. Therefore, energy impacts related to fuel consumption/efficiency during Project operations would be less than significant.

Conclusion

As described above, the Project would result in less than significant impacts on the wasteful, inefficient, or unnecessary use of energy due to Project design features that will comply with the City's design guidelines and regulations that apply to the Project such as Title 24 Building Energy Efficiency Standards and the California Green Building Standards Code that apply to commercial and residential buildings. The installation of solar panels required by 2019 Title 24 standards is expected to offset most electricity used by Project residences. Furthermore, various federal and state regulations including the Low Carbon Fuel Standard, Pavley Clean Car Standards, and Low Emission Vehicle Program would serve to reduce the transportation fuel demand by the Project.

With the adherence to the increasingly stringent building and vehicle efficiency standards as well as implementation of the Project's design features that would reduce energy consumption, the proposed Project would not contribute to a cumulative impact to the wasteful or inefficient use of energy. As such, the Project would not result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation and any impacts would be ***less than significant***.

Mitigation Measures: None are required.

Impact 3.6-2: *Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

Less Than Significant. The City of Fresno has adopted local plans that promote renewable energy and energy efficiency. Fresno Green—The City of Fresno's Strategy for Achieving Sustainability—was adopted in 2007 (Fresno Green). One strategy of Fresno Green is for Fresno to become a leader in renewable energy use and creation of related innovative technology and new business enterprises. This would be accomplished by the following strategies:

- Increase the use of renewable energy to meet 50 percent of the City's annual electrical consumption of kWh.
- Reduce the City's peak electrical load by 10 percent through energy efficiency, shifting the timing of energy demands, and conservation measures.

Fresno Green was the City's first effort to improve sustainability. The City of Fresno General Plan Update and GHG Reduction Plan build on this initial effort.

The City of Fresno General Plan includes goals and strategies related to energy efficiency. The following policies are applicable to the Project:

- **RC-5-a Support State Goal to Reduce Statewide GHG Emissions.** As is consistent with State law, strive to meet AB 32 goal to reduce greenhouse gas emissions to 1990 levels by 2020 and strive to meet a reduction of 80 percent below 1990 levels by 2050 as stated in Executive Order S-03-05. As new statewide GHG reduction targets and dates are set by the State update the City's Greenhouse Gas Reduction Plan to include a comprehensive strategy to achieve consistency with those targets by the dates established.
- **RC-5-c GHG Reduction through Design and Operations.** Increase efforts to incorporate requirements for GHG emission reductions in land use entitlement decisions, facility design, and operational measures subject to City regulation through the following measures and strategies:
    - Promote the expansion of incentive-based programs that involve certification of projects for energy and water efficiency and resiliency. These certification programs and scoring systems may include public agency "Green" and conservation criteria, Energy Star™ certification, CALGreen Tier 1 or Tier 2, Leadership in Energy Efficient Design (LEED™) certification, etc.
    - Promote appropriate energy and water conservation standards and facilitate mixed-use projects, new incentives for infill development, and the incorporation of mass transit, bicycle and pedestrian amenities into public and private projects.

The General Plan Update includes a Greenhouse Gas Reduction Plan (GHG Plan) that provides the City's primary strategy for reducing GHG emissions. Strategies to reduce GHG emissions often rely on increases in renewable energy use and increases in energy efficiency. A discussion of the Project's consistency with the GHG Plan is provided in Section 3.8. The Project analysis found the Project to be consistent with the City of Fresno General Plan and GHG Plan; therefore, the Project would not conflict with or obstruct the local plan for renewable energy or energy efficiency.

The Project was reviewed for consistency with State of California energy plans. The ARB 2008 Scoping Plan required by AB 32 and the ARB 2017 Scoping Plan provide the State's strategy for achieving legislated GHG reduction targets. Although the primary purpose of the Scoping Plans is to reduce GHG emissions, the strategies to achieve the GHG reduction targets rely on the use of increasing amounts of renewable fuels under the LCFS and RPS, and energy efficiency with updates to Title 24 and the CalGreen Code. The 2019 California Energy Efficiency Action Plan addresses issues pertaining to energy efficiency in California's buildings, industrial, and agricultural sectors. Buildings constructed to implement the Project will meet the latest efficiency standards. Vehicles and equipment will meet the latest fuel efficiency standards and use fuels subject to the LCFS.[25]

The Project is consistent with applicable plans and policies and would not result in wasteful or inefficient use of nonrenewable energy sources; therefore, impacts would be ***less than significant***.

Mitigation Measures: None are required.

[25] Ibid. Page 128.

3.8 Greenhouse Gas Emissions

This section discusses regional greenhouse gas (GHG) emissions and climate change impacts that could result from implementation of the proposed Project. This section provides a background discussion of greenhouse gases and effects of global climate change and organized with an existing setting, regulatory setting, and impact analysis. The information and analysis presented in this Section are based on the Air Quality and Greenhouse Gas/Energy Analysis Report for the Parc West Residential Development prepared by Mitchell Air Quality Consulting. The full report can be reviewed in Appendix B.

Environmental Setting

Greenhouse Gases

Gases that trap heat in the atmosphere are referred to as GHGs. The effect is analogous to the way a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide, methane, NO_X, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities emit GHGs. The presence of GHGs in the atmosphere affects the earth's temperature. It is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Climate change is driven by forcings and feedbacks. Radiative forcing is the difference between the incoming energy and outgoing energy in the climate system. Positive forcing tends to warm the surface while negative forcing tends to cool it. Radiative forcing values are typically expressed in watts per square meter. A feedback is a climate process that can strengthen or weaken a forcing. For example, when ice or snow melts, it reveals darker land underneath which absorbs more radiation and causes more warming. The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere. The global warming potential of a gas is essentially a measurement of the radiative forcing of a GHG compared with the reference gas, CO_2.

Individual GHG compounds have varying global warming potential and atmospheric lifetimes. CO_2, the reference gas for global warming potential, has a global warming potential of one. The global warming potential of a GHG is a measure of how much a given mass of a GHG is estimated to contribute to global warming. To describe how much global warming a given type and amount of GHG may cause, the carbon dioxide equivalent is used. The calculation of the carbon dioxide equivalent is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent reference gas, CO_2. For example, CH_4's warming potential of 25 indicates that CH_4 has 25 times greater warming effect than CO_2 on a molecule-per-molecule basis.

A carbon dioxide equivalent is the mass emissions of an individual GHG multiplied by its global warming potential. GHGs defined by Assembly Bill (AB) 32 (see the Climate Change Regulatory Environment section for a description) include CO_2, CH_4, NO_X, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. They are described in Table 3.8-1. A seventh GHG, nitrogen trifluoride, was added to Health and Safety Code section 38505(g)(7) as a GHG of concern.

Table 3.8-1
Description of Greenhouse Gases[1]

Greenhouse Gas	Description and Physical Properties	Sources
Nitrous oxide	Nitrous oxide (laughing gas) is a colorless GHG. It has a lifetime of 114 years. Its global warming potential is 298.	Microbial processes in soil and water, fuel combustion, and industrial processes.
Methane	Methane is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 25.	Methane is extracted from geological deposits (natural gas fields). Other sources are landfills, fermentation of manure, and decay of organic matter.
Carbon dioxide	Carbon dioxide (CO_2) is an odorless, colorless, natural GHG. Carbon dioxide's global warming potential is 1. The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960.	Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.
Chlorofluorocarbons	These are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). Global warming potentials range from 124 to 14,800.	Chlorofluorocarbons were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987.
Perfluorocarbons	Perfluorocarbons have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long	Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing.

[1] Mitchell Air Quality Consulting. Air Quality and Greenhouse Gas/Energy Analysis Report. Park West Residential Development. See Appendix B of this EIR. Page 42.

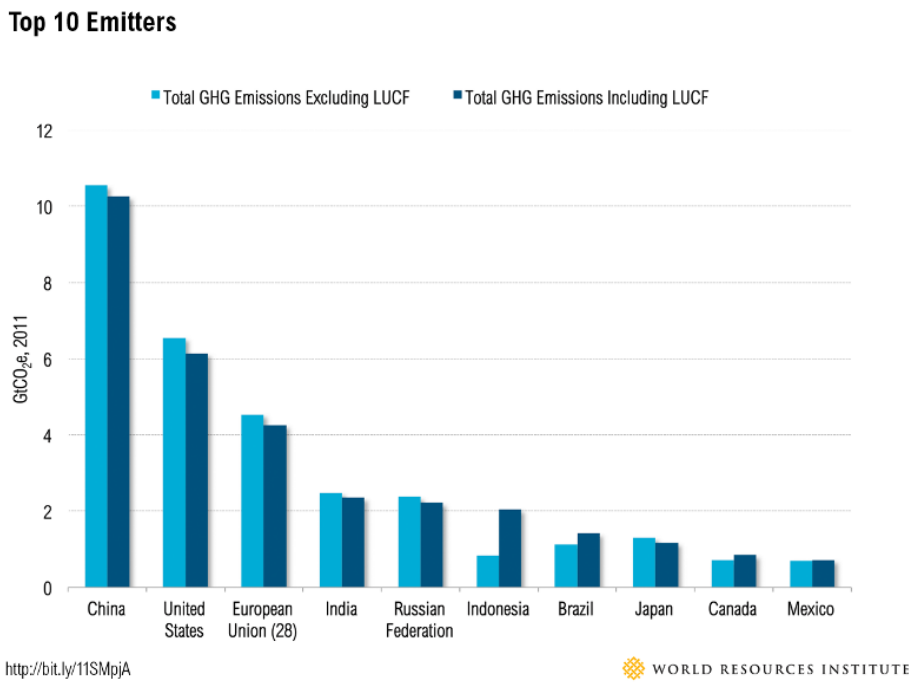
Greenhouse Gas	Description and Physical Properties	Sources
	lifetimes, between 10,000 and 50,000 years. Global warming potentials range from 7,390 to 12,200.	
Sulfur hexafluoride	Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential of 22,800.	This gas is man-made and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas.
Nitrogen trifluoride	Nitrogen trifluoride (NF_3) was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. It has a high global warming potential of 17,200.	This gas is used in electronics manufacture for semiconductors and liquid crystal displays.

Emissions Inventories

An emissions inventory is a database that lists, by source, the amount of air pollutants discharged into the atmosphere of a geographic area during a given time period. Emissions worldwide were approximately 43,286 million metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2012. As shown in Figure 3.8-1, China was the largest GHG emitter with over 10 billion metric tons of CO_2e, and the United States was the second-largest GHG emitter with over 6 billion metric tons of CO_2e.[2]

[2] Ibid. Page 45.

Figure 3.8-1
Greenhouse Gas Emissions by Geographic Area[3]



For California, the contributors of GHG emissions in California between years 2000 and 2017 by Scoping Plan category. The main contributor was transportation. The second highest sector was industrial, which includes sources from refineries, general fuel use, oil and gas extraction, cement plants, and cogeneration heat output. ARB reported that California's GHG emissions inventory was 424.1 $MMTCO_2e$ in 2017 (ARB 2018a).

Regulatory Setting

<u>International Regulations</u>

International organizations, such as the ones discussed below, have made substantial efforts to reduce GHGs. Preventing human-induced climate change will require the participation of all nations in solutions to address the issue.

Intergovernmental Panel on Climate Change

[3] Mitchell Air Quality Consulting. Air Quality and Greenhouse Gas/Energy Analysis Report. Park West Residential Development. See Appendix B of this EIR. Page 42.

In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change. The panel was tasked with assessing the scientific, technical, and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

United Nations Framework Convention on Climate Change (Convention)

On March 21, 1994, the United States joined a number of countries around the world in signing the Convention. Under the Convention, governments gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

Kyoto Protocol

The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions at average of five percent against 1990 levels over the five-year period from 2008–2012. The Convention (as discussed above) encouraged industrialized countries to stabilize emissions; however, the Protocol commits them to do so. Developed countries have contributed more emissions over the last 150 years; therefore, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities."

In 2001, President George W. Bush indicated that he would not submit the treaty to the U.S. Senate for ratification, which effectively ended American involvement in the Kyoto Protocol. In December 2009, international leaders met in Copenhagen to address the future of international climate change commitments post-Kyoto. No binding agreement was reached in Copenhagen; however, the Committee identified the long-term goal of limiting the maximum global average temperature increase to no more than 2°C above pre-industrial levels, subject to a review in 2015. The UN Climate Change Committee held additional meetings in Durban, South Africa in November 2011; Doha, Qatar in November 2012; and Warsaw, Poland in November 2013. The meetings are gradually gaining consensus among participants on individual climate change issues.

Paris Agreement

Parties to the United Nations Framework Convention on Climate Change (UNFCCC) reached a landmark agreement on December 12, 2015 in Paris, charting a fundamentally new course in the

two-decade-old global climate effort. Culminating in a 4-year negotiating round, the new treaty ends the strict differentiation between developed and developing countries that characterized earlier efforts, replacing it with a common framework that commits all countries to put forward their best efforts and to strengthen those efforts in the years ahead. This includes, for the first time, requirements that all parties report regularly on their emissions and implementation efforts, and undergo international review.

On June 1, 2017, President Trump announced the decision for the United States to withdraw from the Paris Climate Accord. The earliest possible effective withdrawal date by the United States cannot be before November 4, 2020. California remains committed to combating climate change through programs designed to reduce GHGs.

Federal Regulations

Prior to the last decade, there were no concrete federal regulations of GHGs or major planning for climate change adaptation. Since then, federal activity has increased. The following are actions regarding the federal government, GHGs, and fuel efficiency.

Clean Vehicles

Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Safety Administration announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States.

The EPA and the U.S. Department of Transportation issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses on September 15, 2011, which became effective November 14, 2011. For combination tractors, the agencies are proposing engine and vehicle standards that began in the 2014 model year and achieve up to a 20-percent reduction in CO_2 emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10-percent reduction for gasoline vehicles, and a 15-percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10-percent reduction in fuel consumption and CO_2 emissions from the 2014 to 2018 model years.

Mandatory Reporting of Greenhouse Gases

The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule, which became effective January 1, 2010. The rule requires reporting of GHG emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the EPA.

New Source Review

The EPA issued a final rule on May 13, 2010 that establishes thresholds for GHGs, which will define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these Clean Air Act permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the federal code of regulations, the EPA states:

> This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the Clean Air Act, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to greenhouse gas sources, starting with the largest greenhouse gas emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources, but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for greenhouse gas emissions until at least April 30, 2016.

The EPA estimates that facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest GHG emitters—power plants, refineries, and cement production facilities.

Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units

As required by a settlement agreement, the EPA proposed new performance standards for emissions of carbon dioxide for new, affected, fossil fuel-fired electric utility generating units on March 27, 2012. New sources greater than 25 megawatts would be required to meet an output based standard of 1,000 pounds of carbon dioxide per megawatt-hour, based on the performance of widely used natural gas combined cycle technology. President Trump signed the Executive Order on Energy Independence (E.O. 13783), which calls for a review of the Clean Power Plan. On October 16, 2017, the EPA issued the proposed rule Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units an Energy Independence.

Cap-and-Trade

Cap-and-Trade refers to a policy tool where emissions are limited to a certain amount and can be traded, or provides flexibility on how the emitter can comply. There is no federal GHG Cap-and-Trade program currently; however, some states have joined to create initiatives to provide a mechanism for Cap-and-Trade.

The Western Climate Initiative partner jurisdictions have developed a comprehensive initiative to reduce regional GHG emissions to 15 percent below 2005 levels by 2020. The partners are California, British Columbia, Manitoba, Ontario, and Quebec. Currently only California and Quebec are participating in the Cap-and-Trade program.[4]

<u>California Regulations</u>

Legislative Actions to Reduce GHGs

This section describes the major provisions of the legislation.

AB 32. The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include carbon dioxide, methane, NO_X, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs. The ARB is the state agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global

[4] Ibid. Page 50.

warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The ARB approved the 1990 GHG emissions level of 427 $MMTCO_2e$ on December 6, 2007 (ARB 2007). Therefore, to meet the State's target, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$. Emissions in 2020 in a BAU scenario were estimated to be 596 $MMTCO_2e$, which do not account for reductions from AB 32 regulations. At that rate, a 28 percent reduction was required to achieve the 427 $MMTCO_2e$ 1990 inventory. In October 2010, ARB prepared an updated 2020 forecast to account for the effects of the 2008 recession and slower forecasted growth. The 2020 inventory without the benefits of adopted regulation is now estimated at 545 $MMTCO_2e$. Therefore, under the updated forecast, a 21.7 percent reduction from BAU is required to achieve 1990 levels.[5]

ARB 2008 Scoping Plan. The ARB's Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the State's emissions to 1990 levels by the year 2020 to comply with AB 32 (ARB 2008). The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 GHG target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and

[5] Ibid. Page 51.

- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

AB 398. The Governor signed AB 398 on July 25, 2017 to extend the Cap-and-Trade Program to 2030. The legislation includes provisions to ensure that offsets used by sources are limited to 4 percent of their compliance obligation from 2021 through 2025 and 6 percent from 2026 through 2030. AB 398 also prevents Air Districts from adopting or implementing emission reduction rules from stationary sources that are also subject to the Cap-and-Trade Program (CAR 2017).

SB 32. The Governor signed SB 32 on September 8, 2016. SB 32 now gives ARB the statutory responsibility to include the 2030 target previously contained in Executive Order B-30-15 in the 2017 Scoping Plan Update. SB 32 states that "In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state [air resources] board shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030." The 2017 Climate Change Scoping Plan Update addressing the SB 32 targets was adopted on December 14, 2017.

SB 375—The Sustainable Communities and Climate Protection Act of 2008. SB 375 was signed into law on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

AB 1493 Pavley Regulations and Fuel Efficiency Standards. California AB 1493, enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011.

SB 1368—Emission Performance Standards. In 2006, the State Legislature adopted SB 1368, which was subsequently signed into law by the governor. SB 1368 directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases

of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 lbs. CO_2 per megawatt-hour (MWh).

SB 1078—Renewable Electricity Standards. On September 12, 2002, Governor Gray Davis signed SB 1078, requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Governor Schwarzenegger also directed the ARB (Executive Order S-21-09) to adopt a regulation by July 31, 2010, requiring the State's load serving entities to meet a 33 percent renewable energy target by 2020 The ARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. In 2011, the state legislature adopted this higher standard in SB X1-2. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas.

SB 350—Clean Energy and Pollution Reduction Act of 2015. The legislature approved and the governor then signed SB 350 on October 7, 2015, which reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the RPS, higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle charging stations. Specifically, SB 350 requires the following to reduce statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33 percent to 50 percent by 2030, with interim targets of 40 percent by 2024, and 25 percent by 2027.
- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the California Public Utility Commission (CPUC), the California Energy Commission (CEC), and local publicly owned utilities.
- Reorganize the Independent System Operator (ISO) to develop more regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.

SB 100—California Renewables Portfolio Standard Program. The Governor approved SB 100 on September 10, 2018. The legislation revised the Renewable Portfolio Standard goals to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by

December 31, 2030. The bill would require that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030.

SBX 7-7—The Water Conservation Act of 2009. The legislation directs urban retail water suppliers to set individual 2020 per capita water use targets and begin implementing conservation measures to achieve those goals. Meeting this statewide goal of 20 percent decrease in demand will result in a reduction of almost 2 million acre-feet in urban water use in 2020.

Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs through the use of executive orders. Although not regulatory, they set the tone for the State and guide the actions of state agencies.

Executive Order S-3-05. On June 1, 2005, former California Governor Arnold Schwarzenegger announced through Executive Order S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce greenhouse gas emissions to 2000 levels.
- By 2020, reduce greenhouse gas emissions to 1990 levels.
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Executive Order B-30-15. On April 29, 2015, Governor Edmund G. Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments ahead of the United Nations Climate Change Conference in Paris late 2015. The executive order sets a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050, and directs the ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of $MMTCO_2e$. The executive order also requires the State's climate adaptation plan to be updated every three years and for the State to continue its climate change research program, among other provisions.

Executive Order S-01-07—Low Carbon Fuel Standard. The governor signed Executive Order S 01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, the ARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels.

Executive Order S-13-08. Executive Order S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy was adopted, which is the ". . . first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order B-55-18. Executive Order B-55-18 issued by Governor Brown on September 10, 2018 establishes a new statewide goal to achieve carbon neutrality as soon as possible, but no later than 2045, and achieve and maintain net negative emissions thereafter. The executive order directs ARB to work with relevant state agencies to develop a framework for implementation and accounting that tracks progress toward this goal.

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

Title 20 Appliance Efficiency Regulations. California Code of Regulations, Title 20: Division 2, Chapter 4, Article 4, Sections 1601–1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. Twenty-three categories of appliances are included in the scope of these regulations including lighting, air conditioning, and most home appliances. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the State and those designed and sold exclusively for use in recreational vehicles or other mobile equipment (CEC 2018a).

Title 24 Energy Efficiency Standards. California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The most current 2019 Building Energy Efficiency Standards went into effect on January 1, 2020.

Title 24 California Green Building Standards Code (California Code of Regulations Title 24, Part 11 code) is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect January 1, 2011. The code is updated on a regular basis, with the most recent update consisting of the 2019 California Green Building Code Standards that became effective January 1, 2020. Local jurisdictions are permitted to adopt more stringent requirements, as state law provides methods for local enhancements. in order to be certified for occupancy, which is generally enforced by the local building official.

The California Green Building Standards Code (California Code of Regulations Title 24, Part 11 code) requires:

- **Short-term bicycle parking.** If a commercial project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for five percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- **Long-term bicycle parking.** For buildings with over 10 tenant-occupants, provide secure bicycle parking for five percent of tenant-occupied motorized vehicle parking capacity, with a minimum of one space (5.106.4.1.2).
- **Designated parking.** Provide designated parking in commercial projects for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2 (5.106.5.2).
- **Recycling by Occupants.** Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of nonhazardous materials for recycling. (5.410.1).
- **Construction waste.** A minimum 50-percent diversion of construction and demolition waste from landfills, increasing voluntarily to 65 and 80 percent for new homes and 80-percent for commercial projects. (5.408.1, A5.408.3.1 [nonresidential], A5.408.3.1

[residential]). All (100 percent) of trees, stumps, rocks and associated vegetation and soils resulting from land clearing shall be reused or recycled (5.408.3).

- **Wastewater reduction.** Each building shall reduce the generation of wastewater by one of the following methods:
    - The installation of water-conserving fixtures or
    - Using nonpotable water systems (5.303.4).
- **Water use savings.** Twenty percent mandatory reduction in indoor water use with voluntary goal standards for 30, 35, and 40 percent reductions (5.303.2, A5303.2.3 [nonresidential]).
- **Water meters.** Separate water meters for buildings in excess of 50,000 square feet or buildings projected to consume more than 1,000 gallons per day (5.303.1).
- **Irrigation efficiency.** Moisture-sensing irrigation systems for larger landscaped areas (5.304.3).
- **Materials pollution control.** Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particleboard (5.404).
- **Building commissioning.** Mandatory inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies (5.410.2).

Model Water Efficient Landscape Ordinance. The Model Water Efficient Landscape Ordinance (Ordinance) was required by AB 1881 Water Conservation Act. The bill required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Model Ordinance by January 1, 2010. Reductions in water use of 20 percent consistent with (SBX-7-7) 2020 mandate are expected for the ordinance. New development projects that include landscaped areas of 500 square feet or more are subject to the ordinance. The update requires:

- More efficient irrigation systems
- Incentives for graywater usage
- Improvements in on-site stormwater capture
- Limiting the portion of landscapes that can be planted with high water use plants
- Reporting requirements for local agencies.

<u>San Joaquin Valley Air Pollution Control District Regulations</u>

Climate Change Action Plan

On August 21, 2008, the SJVAPCD Governing Board approved a proposal called the Climate Change Action Plan (CCAP). The CCAP began with a public process bringing together stakeholders, land use agencies, environmental groups, and business groups to conduct public workshops to develop comprehensive policies for CEQA guidelines, a carbon exchange bank, and voluntary GHG emissions mitigation agreements for the Board's consideration. The CCAP contains the following goals and actions:

- Develop GHG significance thresholds to address CEQA projects with GHG emission increases.
- Develop the San Joaquin Valley Carbon Exchange for banking and trading GHG reductions.
- Authorize use of the SJVAPCD's existing inventory reporting system to allow use for GHG reporting required by AB 32 regulations.
- Develop and administer GHG reduction agreements to mitigate proposed emission increases from new projects.
- Support climate protection measures that reduce greenhouse gas emissions as well as toxic and criteria pollutants. Oppose measures that result in a significant increase in toxic or criteria pollutant emissions in already impacted areas.

On December 17, 2009, the SJVAPCD Governing Board adopted "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA," and the policy "District Policy—Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency." The SJVAPCD concluded that the existing science is inadequate to support quantification of the impacts that project-specific GHG emissions have on global climatic change. The SJVAPCD found the effects of project-specific emissions to be cumulative, and without mitigation, their incremental contribution to global climatic change could be considered cumulatively considerable. The SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their GHG emissions, whether through project design elements or mitigation.

Business As Usual (BAU) represents the emissions that would occur in 2020 if the average baseline emissions during the 2002–2004 period were grown to 2020 levels, without control. Thus, these standards would carry with them pre-quantified emissions reductions, eliminating the need for project-specific quantification. Therefore, projects incorporating Best Performance Standards (BPS) would not require specific quantification of GHG emissions, and automatically would be determined to have a less than significant cumulative impact for GHG emissions.

For development projects, BPS means, "Any combination of identified GHG emission reduction measures, including project design elements and land use decisions that reduce project-specific GHG emission reductions by at least 29 percent compared with business as usual."

Projects not incorporating BPS would require quantification of GHG emissions and demonstration that BAU GHG emissions have been reduced or mitigated by 29 percent. As stated earlier, ARB's adjusted inventory reduced the amount required by the State to achieve 1990 emission levels from 29 percent to 21.7 percent to account for slower growth experienced since the 2008 recession. According to SJVAPCD guidance, quantification of GHG emissions would be required for all projects for which the lead agency has determined that an environmental impact report is required, regardless of whether the project incorporates BPS. The SJVAPCD has not yet adopted BPS for development projects, so quantification of project emissions is required.

San Joaquin Valley Carbon Exchange

The SJVAPCD initiated work on the San Joaquin Valley Carbon Exchange in November 2008. The purpose of the carbon exchange is to quantify, verify, and track voluntary GHG emissions reductions generated within the San Joaquin Valley. However, the SJVAPCD has pursued an alternative strategy that incorporates the GHG emissions into its existing Rule 2301—Emission Reduction Credit Offset Banking that formerly only addressed criteria pollutants. The SJVAPCD is also participating with the California Air Pollution Control Officers Association (CAPCOA), of which it is a member, in the CAPCOA Greenhouse Gas Reduction Exchange (GHG Rx). The objective is to provide a secure, low-cost, high-quality greenhouse gas exchange for credits created in California. The SJVAPCD currently has no credits posted to the GHG Rx website as of this writing.

Rule 2301. While the Climate Change Action Plan indicated that the GHG emission reduction program would be called the San Joaquin Valley Carbon Exchange, the District incorporated a method to register voluntary GHG emission reductions into its existing Rule 2301—Emission Reduction Credit Banking through amendments of the rule. Amendments to the rule were adopted on January 19, 2012. The purposes of the amendments to the rule include the following:

- Provide an administrative mechanism for sources to bank voluntary GHG emission reductions for later use.
- Provide an administrative mechanism for sources to transfer banked GHG emission reductions to others for any use.

- Define eligibility standards, quantitative procedures, and administrative practices to ensure that banked GHG emission reductions are real, permanent, quantifiable, surplus, and enforceable.

Fresno Council of Governments Regulations

Regional Transportation Plan

The Fresno Council of Governments (Fresno COG) is the Regional Transportation Planning Agency (RTPA) for the Fresno County region. The Fresno COG adopted the 2014 Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS) that included the County's first Sustainable Community Strategy to comply with SB 375. The RTP is a planning document prepared in cooperation with the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the California Department of Transportation (Caltrans), and other stakeholders, including transportation system users. The SCS is intended to show how integrated land use and transportation planning can lead to lower greenhouse gas (GHG) emissions from autos and light trucks.

SB 375 required the ARB to develop regional GHG emission reduction targets for cars and light trucks for each of the 18 MPOs in California, including Fresno COG. ARB approved targets for the San Joaquin Valley in January 2013. The target for Fresno is a per capita reduction in GHG emissions from passenger vehicle travel of five percent by 2020 and 10 percent by 2035 relative to 2005 levels. The 2018 RTP indicates that the County continues to pursue the 5 percent reduction by 2020 and 10 percent reduction by 2035. The 2018 RTP/SCS was adopted by Fresno COG on July 26, 2018 and reflects its latest per capita GHG reduction targets of 5 percent by 2020, 10 percent by 2035, and 12 percent by 2042.

City of Fresno Regulations

The City of Fresno included a Greenhouse Gas Reduction Plan as part of the General Plan Update that includes strategies that would help reduce GHG emissions associated with development projects. The GHG Reduction Plan used the General Plan as the basis for its land use and transportation related policies to reduce GHG emissions.

City of Fresno General Plan

The City of Fresno General Plan includes numerous objectives and policies in the Urban Form, Land Use, Design, Transportation, Park and Open Space, and Resource Conservation Elements. A list of the relevant policies was compiled in the Greenhouse Gas Reduction Plan and is provided in

Appendix B. A qualitative policy consistency analysis of relevant General Plan policies is included in the Greenhouse Gas section.

City of Fresno General Plan Master Environmental Impact Report (MEIR)

The General Plan MEIR relies on General Plan goals and policies to mitigate GHG emissions to the extent feasible. The policies are similar to the strategies and actions included in plan. The following policies are applicable to the project:

- **RC-5-a Support State Goal to Reduce Statewide GHG Emissions.** As is consistent with State law, strive to meet AB 32 goal to reduce greenhouse gas emissions to 1990 levels by 2020 and strive to meet a reduction of 80 percent below 1990 levels by 2050 as stated in Executive Order S-03-05. As new statewide GHG reduction targets and dates are set by the State update the City's Greenhouse Gas Reduction Plan to include a comprehensive strategy to achieve consistency with those targets by the dates established.
- **RC-5-c GHG Reduction through Design and Operations.** Increase efforts to incorporate requirements for GHG emission reductions in land use entitlement decisions, facility design, and operational measures subject to City regulation through the following measures and strategies:
    - Promote the expansion of incentive-based programs that involve certification of projects for energy and water efficiency and resiliency. These certification programs and scoring systems may include public agency "Green" and conservation criteria, Energy Star™ certification, CALGreen Tier 1 or Tier 2, Leadership in Energy Efficient Design (LEED™) certification, etc.
    - Promote appropriate energy and water conservation standards and facilitate mixed-use projects, new incentives for infill development, and the incorporation of mass transit, bicycle and pedestrian amenities into public and private projects.
- **RC-5-d SCS and CAP Conformity Analysis.** Ensure that the City includes analysis of a project's conformity to an adopted regional Sustainable Community Strategy or Alternative Planning Strategy (APS), an adopted Climate Action Plan (CAP), and any other applicable City and regional greenhouse gas reduction strategies in affect at the time of project review.
- **RC-5-e Ensure Compliance.** Ensure ongoing compliance with GHG emissions reduction plans and programs by requiring that air quality measures are incorporated into projects' design, conditions of approval, and mitigation measures.
- **RC-5-g Evaluate Impacts with Models.** Continue to use computer models such as those used by SJVAPCD to evaluate greenhouse gas impacts of plans and projects that require such review.

Greenhouse Gas Reduction Plan

The General Plan Update includes a Greenhouse Gas Reduction Plan (GHG Plan) that provides the City's primary strategy for reductions greenhouse gas emissions. The intent of the GHG Plan is to achieve compliance with state GHG reduction mandates by focusing on feasible actions the City can take to minimize the adverse impacts of growth and development on climate change. The GHG Plan does not reinvent the wheel; rather, it builds on the General Plan policies and implementation measures.

The GHG Plan shows that the City will achieve a reduction of 26.8 percent from BAU by 2020 through compliance with regulations only, which exceeds the 21.7 percent required to show consistency with AB 32 targets. The local measures contained in the GHG Plan were expected to achieve an additional 3.0 percent reduction from BAU for a total reduction of 29.8 percent from BAU by 2020. In addition, an analysis of 2030 emissions is included to address SB 32 2030 targets and compliance with the Newhall Ranch California Supreme Court ruling.

Waste Diversion

With the passage of SB 1016, the Per Capita Disposal Measurement System, only per capita disposal rates are measured. Targets are based on the per capita disposal rates. The City's disposal rate for 2017 was 4.70 pounds per person per day, which is well below the target of 6.6 pounds per person per day.

Thresholds of Significance

Section 15064.4(b) of the CEQA Guidelines' 2018 amendments for GHG emissions states that a lead agency may take into account the following three considerations in assessing the significance of impacts from GHG emissions.

- Consideration #1: The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
- Consideration #2: Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- Consideration #3: The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is

substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

Impacts and Mitigation Measures

Impact 3.8-1: *Would the project generate direct and indirect greenhouse gas emissions?*

Less Than Significant. A quantitative analysis was prepared for this Project to determine the extent to which it may increase or reduce greenhouse gas emissions as compared to the existing environmental setting to fulfill Consideration 1.

Consideration 2 requires the identification of BPS that are determined to meet the 29 percent reduction from BAU. The SJVAPCD intended to develop a list of BPS for development projects that were pre-determined to achieve a 29 percent reduction from BAU, but has not completed the list. However, since the SJVAPCD guidance was adopted in 2009, regulations on sources of GHG emissions applicable to development projects have been implemented that will achieve in excess of a 29 percent reduction from BAU for most projects. A BAU analysis is provided to demonstrate that the Project would exceed the current 21.7 percent reduction and the previous SJVAPCD 29 percent reduction threshold.[6]

The analysis also addresses consistency with the SB 32 targets and the 2017 Scoping Plan Update with an assessment of the Project's reduction from BAU based on emissions in 2030 compared with the 21.7 percent reduction and with a consistency analysis. This approach provides estimates of Project emissions in the new 2030 milestone year with the existing threshold to address Considerations 1 and 2 above.

[6] Ibid. Page 98.

Construction

Total GHG emissions generated during all phases of construction were combined and are presented in Table 3.8-2. The SJVAPCD does not recommend assessing the significance of construction-related emissions. However, other jurisdictions, such as the SCAQMD and the SMAQMD, have concluded that construction emissions should be included since they may remain in the atmosphere for years after construction is complete. In order to account for the construction emissions, amortizations of the total emissions generated during construction were based on the life of the development (residential—30 years) and added to the operational emissions.

Table 3.8-2
Construction Greenhouse Gas Emissions[7]

Phase/Year	$MTCO_2e$ per year
Phase 1 2021	741.72
Phase 1 2022	73.74
Phase 2 2022	879.52
Phase 2 2023	84.40
Phase 3 2023	888.95
Phase 3 2024	65.61
Phase 4 2024	894.52
Phase 4 2025	58.04
Phase 5 2025	468.77
Phase 5 2026	32.91
Total	**4,188.17**
Amortized over 30 years	**139.61**

Notes:
Calculation totals use unrounded numbers from CalEEMod output.
$MTCO_2e$ = metric tons of carbon dioxide equivalents

Operation

Operational or long-term emissions occur over the life of the Project. Sources of emissions may include motor vehicles and trucks, energy usage, water usage, waste generation, and area sources, such as landscaping activities and residential wood burning.

Business As Usual Operational Emissions

[7] Ibid. Page 102

Operational emissions under the BAU scenario were modeled using CalEEMod 2016.3.2. Modeling assumptions for the year 2005 were used to represent 2025 and 2030 BAU conditions (without the benefit of regulations adopted to reduce GHG emissions). The SJVAPCD guidance recommends using emissions in 2002–2004 in the baseline scenario to represent conditions—as if regulations had not been adopted—to allow the effect of projected growth on achieving reduction targets to be clearly defined. CalEEMod defaults were used for Project energy usage, water usage, waste generation, and area sources (architectural coating, consumer products, and landscaping). The vehicle fleet mix was revised to reflect the residential fleet mix approved by SJVAPCD for 2025, which is when first occupancy of the final phase of development is expected to occur. Full assumptions and CalEEMod model outputs are provided in Appendix B.

Regulations applicable to Project sources and the percent reduction anticipated from each source are shown in Table 3.8-3. The percentage reductions are only applied to the specific sources subject to the regulations. For example, the Pavley LEV Standards apply only to light duty cars and trucks.

Table 3.8-3
Reductions from Greenhouse Gas Regulations[8]

Regulation	Project Applicability	Reduction Source	Percent Reduction in 2020 and 2030
Pavley Low Emission Vehicle Standards	Light-duty cars and trucks accessing the site are subject to the regulation.	CalEEMod defaults (Pavley I)	25.1
		Adjusted GHG emission factor (Pavley II/LEV III) in CalEEMod.	3% 2020 19.5% 2030
Truck and Bus Regulation	Heavy-duty trucks accessing the site for deliveries and services are subject to the regulation.	Adjusted GHG emission factors for the regulation in CalEEMod	7.2%
Low Carbon Fuel Standard (LCFS)	Vehicles accessing the site will use fuel subject to the LCFS	CalEEMod defaults	10% 2020 20% 2030
Title 24 Energy Efficiency Standards	Project buildings will be constructed to meet the latest version of Title 24 (currently 2016). Reduction applies only to energy consumption	CalEEMod defaults	35%

[8] Ibid. Page 104.

Regulation	Project Applicability	Reduction Source	Percent Reduction in 2020 and 2030
	subject to the regulation.		
Green Building Code Standards	The project will include water conservation features required by the standard	CalEEMod mitigation component	20%
Water Efficient Land Use Ordinance	The project landscaping will comply with the regulation	CalEEMod mitigation component	20%
Regulation	Project Applicability	Reduction Source	Percent Reduction in 2020 and 2030
Renewable Portfolio Standard (RPS)	Electricity purchased for use at the project site is subject to the 33 percent RPS mandate	CalEEMod adjusted energy intensity factors with PG&E emission factors that show the company will exceed the 33 percent mandate.	54.5%
Solid waste	The solid waste service provider will need to provide programs to increase diversion and recycling to meet the 75 percent mandate.	CalEEMod mitigation component	25%

In addition to rules and regulations, the Project would incorporate design features and would obtain benefits from its location and infrastructure that would reduce Project VMT to a certain extent compared with default values within the CalEEMod program. For example, the Project is located within a short distance (approximately 1/3 mile) of Harvest Elementary School and Glacier Point Middle School, which could potentially result in either short trips associated with drop-off/pick-up of students who live in the development, or in some cases, it is also likely that some parents/care-givers may walk students to school, given the close proximity. The site is also less than 2 miles from the Central High School East campus, which would result in relatively short trips associated with students attending the High School. The Project would also construct a 1.819 acre park within the development that is within walking distance of homes and connectivity to the City's trail system in the area will be provided. These facilities may reduce some vehicle miles traveled by providing some recreational opportunities on-site. Although there is no commercial component proposed by the Project, the Project is within 3 miles of the existing regional commercial development located on West Shaw Avenue and North Brawley Avenue. This distance is considered to be relatively short for vehicles to travel to access a

regional commercial development. The Project is located approximately 10 miles from existing development in Downtown Fresno, providing shorter-than-average trip lengths to important destinations. In addition, the Project would provide electrical outlets for landscaping equipment that would be used in accordance with statewide usage rates for this type of equipment.

Note that CalEEMod nominally treats these design elements and conditions as "mitigation measures," despite their inclusion in the Project description. Therefore, reported operational emissions are considered to represent unmitigated Project conditions. Operational emissions for 2025 are presented in Table 3.8-4 while operational emissions for the year 2030 is presented in Table 3.8-5.

Table 3.8-4
Project Operational Greenhouse Gases 2025[9]

Source	Emissions ($MTCO_2e$ per year)		
	Business as Usual	2025 (with Regulation and Design Features)	Percent Reduction
Area	1,100.88	378.28	**65.64%**
Energy	3,344.00	2,085.37	**37.6%**
Mobile	10,372.18	6,428.71	**38.0%**
Waste	437.04	327.78	**25.0%**
Water	197.19	104.28	**47.1%**
Amortized Construction Emissions	139.61	139.61	**0.0%**
Total	15,590.89	9,464.03	**39.3%**
Reduction from BAU		**6,126.86**	**—**
Percent Reduction		**39.3%**	**—**
Significance Threshold		**21.7%**	**—**
Are emissions significant?		**No**	

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
The project achieves the SJVAPCD 29 percent reduction from BAU threshold and the 21.7 percent required to show consistency with AB 32 targets.

Since the Project buildout would occur after 2020, additional analysis summarized in Table 3.8-5 prepared to show consistency with SB 32 2030 target.

[9] Ibid. Page 106.

Table 3.8-5
Project Operational Greenhouse Gases 2030[10]

Source	Emissions ($MTCO_2e$ per year)		
	Business as Usual	**2030 (with Regulation and Design Features)**	Percent Reduction
Area	1,100.88	378.28	**65.64%**
Energy	3,344.00	2,085.37	**37.6%**
Mobile	10,372.18	5,023.12	**51.6%**
Waste	437.04	327.78	**25.0%**
Water	197.19	104.28	**47.1%**
Amortized Construction Emissions	139.61	139.61	**0.0%**
Total	15,590.89	8,058.44	**48.3%**
	Reduction from BAU	**7,532.46**	**—**
	Percent Reduction	**48.3%**	**—**
	Significance Threshold	**21.7%**	**—**
	Are emissions significant?	**No**	

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
The project achieves the SJVAPCD 29 percent reduction from BAU threshold and the 21.7 percent required to show consistency with AB 32 targets. No new target has been set for 2030.

As shown in Table 3.8-5, the Project operations in both 2025 and 2030 would achieve a reduction from BAU of 39.3 percent and 48.3 percent, respectively, which exceeds the 21.7 percent reduction required by the State to achieve the 2020 target and the SJVAPCD 29.0 percent target. No new threshold has been adopted by the City of Fresno for the 2030 target, so in the interim the Project must make continued progress toward the 2030 goal.

The analysis presented above does not include new strategies proposed in the 2017 Scoping Plan Update. The update was adopted in December 2017. The update provides alternatives in terms of their likelihood of implementation and ranges of reduction from the strategies. Measures already authorized by legislation are highly likely to be implemented, while measures requiring new legislation are less likely to go forward. The State is highly likely to incorporate zero net energy buildings in future updates to Title 24 and now requires solar panels in most residential development. A new round of motor vehicle fuel efficiency standards beyond 2025 when LEV III standards are at their maximum reduction level is highly likely. Changing heavy-duty trucks and off-road equipment to alternative fuels face greater technological hurdles and are less likely to provide dramatic reductions by 2030.

[10] Ibid. Page 107.

The 2030 emission limit is 260 $MMTCO_2e$. The ARB estimates that the 2030 BAU (reference) Inventory will be 392 $MMTCO_2e$—a reduction of 132 $MMCO_2e$, including existing policies and programs but not including known commitments that are already underway. The 2017 Scoping Plan Update includes the estimated GHG emissions by sector compared with 1990 levels that is presented in Table 3.8-6 The proposed plan would achieve the bulk of the reductions from Electric Power, Industrial fuel combustion, and Transportation. Cap-and-Trade would provide between 10 and 20 percent of the required reductions depending on the amounts achieved by the other reduction measures.

Table 3.8-6
2017 Scoping Plan Update Estimated Change in GHG Emissions by Sector[11]

Scoping Plan Sector	Emissions ($MMTCO_2e$ per year)		
	1990	2030 Proposed Plan Ranges	Percent Change form 1990
Agriculture	26	24–25	-4 to -8
Residential and Commercial	44	38–40	-9 to -14
Electric Power	108	42–62	-43 to -61
High GWP	3	8–11	167 to 267
Industrial	98	77–87	-11 to -21
Recycling and Waste	7	8–9	14 to 29
Transportation (including TCU)	152	103–111	-27 to -32
Net Sink	-7	TBD	TBD
Subtotal	431	300–345	-20 to -30
Cap-and-Trade Program	N/A	40–85	N/A
Total	431	260	-40

Although 2017 Scoping Plan Update focuses on state agency actions necessary to achieve the 2030 GHG limit, the ARB considers local governments essential partners in achieving California's goals to reduce GHG emissions. The 2030 target will require an increase in the rate of emission reductions compared to what was needed to achieve the 2020 limit, and this will require action and collaboration at all levels, including local government action to complement and support State-level actions. For individual projects, the 2017 Scoping Plan Update suggests that all new land use development implement all feasible measures to reduce GHG emissions. The Scoping Plan does not define all feasible measures or attribute an amount of reductions required from new development beyond compliance with regulations.

[11] Ibid. Page 108.

In conclusion, the Project would achieve reductions of 17.6 percent beyond the ARB 2020 21.7 percent target and 9.6 percent beyond the SJVAPCD 29 percent reduction from BAU requirements from adopted regulations and on-site design features. No new thresholds have been adopted by the City for the SB 32 2030 target; however, the reductions from BAU by 2030 are 26.6 percent beyond the 21.7 percent required for the 2020 target. Based on this progress and the strong likelihood that the measures included in the 2017 Scoping Plan Update will be implemented, it is reasonable to conclude that the Project is consistent with the 2017 Scoping Plan and will contribute a reasonable fair-share contribution to achieving the 2030 target. As shown in Table 3.8-6, the State strategy relies on the Cap-and-Trade Program to make up any shortfalls that may occur from the other regulatory strategies. The costs of Cap-and-Trade emission reductions will ultimately be passed on to the consumers of fuels, electricity, and products produced by regulated industries, which include future residents of development projects and other purchasers of products and services. Therefore, the impact in terms of Considerations #1 and #2 would be ***less than significant***.

Mitigation Measures:

None Required.

Impact 3.8-2: *Would the project conflict with any applicable plan, policy, or regulation of an agency adopted to reduce the emissions of greenhouse gases?*

Less Than Significant. The following analysis assesses the Project's compliance with Consideration #3 regarding consistency with adopted plans to reduce GHG emissions. The City of Fresno adopted its GHG Reduction Plan as part of the General Plan Update in 2014. The Project's consistency with applicable GHG policies from the GHG Reduction Plan policies is assessed below.

The Project is also assessed for its consistency with ARB's adopted Scoping Plans. This would be achieved with an assessment of the Project's compliance with Scoping Plan measures contained in the 2008 Scoping Plan and the 2017 Scoping Plan Update.

<u>City of Fresno GHG Plan</u>

The GHG Plan includes procedures to use when assessing the impacts of project's requiring a general plan amendment. The following requirements apply.

1. Review General Plan policies listed in the GHG Reduction Plan to identify those that apply to the project and prepare a consistency analysis for compliance with the applicable policies.

2. Ensure project is consistent with the City's Development Code as it relates to complete streets and design standards for multi-family projects

3. Prepare a GHG technical study to quantify project emissions and emission reductions through compliance with regulations and project design features.

Table 3.8-7 provides a consistency analysis with applicable GHG policies from the GHG Reduction Plan. The Project is consistent with all applicable policies.

Table 3.8-7
Consistency with Fresno Greenhouse Reduction Plan[12]

Climate Action Plan Policy	Project Consistency
Policy RC-2-a Link Land Use to Transportation. Promote mixed-use, higher density infill development in multi-modal corridors. Support land use patterns that make more efficient use of the transportation system and plan future transportation investments in areas of higher-intensity development. Discourage investment in infrastructure that would not meet these criteria.	Consistent. The project will provide higher-density, compact development at an undeveloped site, making more efficient use of the existing infrastructure.
Objective UF-12 Locate roughly one-half of future residential development in infill areas—defined as being within the City on December 21, 2012—including the Downtown core area and surrounding neighborhoods, mixed-use centers and transit-oriented development along major BRT corridors, and other non-corridor infill areas, and vacant land.	Consistent. Although not currently within the City, the project is residential development within the City of Fresno planning area. The project site is within 1.8 miles of the Central High School East campus and 0.33 miles of the Glacier Point Middle School campus and the Harvest Elementary School. The project is also within 3 miles of existing regional commercial development on West Shaw Avenue and North Brawley Avenue. The project would not preclude the City from achieving this objective.
Policy LU-2-b Infill Development for Affordable Housing. Consider a priority infill incentive program for residential infill development of existing vacant lots and underutilized sites within the City as a strategy to help to meet the affordable housing needs of the community.	Not Applicable. The project is residential development on an underutilized site; however, the project would provide market-based housing. Although not classified as "affordable housing," development of the project would provide housing that helps the City meet the needs of the community.
Policy LU-5-f High Density Residential Uses. Promote high-density residential uses to	Not Applicable. The project is not within a designated Activity Center or BRT corridor.

[12] Ibid. Page 110.

Climate Action Plan Policy	Project Consistency
support Activity Centers and BRT corridors, affordable housing and walkable access to transit stops.	
Policy UF-14-a Design Guidelines for Walkability. Use design guidelines and standards for a walkable and pedestrian-scaled environment with a network of streets and connections for pedestrians and bicyclists, as well as transit and autos.	Consistent. The project will comply with the City Development Code, which requires appropriate pedestrian infrastructure in new development projects. The project connects to the existing street network that includes sidewalks.
Objective MT-9 Provide public transit opportunities to the maximum number and diversity of people practicable in balance with providing service that is high in quality, convenient, frequent, reliable, and financially feasible.	Not Applicable. The project is not on an existing FAX transit line; however, the project provides increased development density that could help support future transit in the area.
Policy MT-6-a Link Residences to Destinations. Design a pedestrian and bicycle path network that links residential areas with Activity Centers, such as parks and recreational facilities, educational institutions, employment centers, cultural sites, and other focal points of the city environment.	Consistent. The project will provide pedestrian infrastructure connecting to neighboring uses, such as schools. A 1.8-acre neighborhood park is planned on the site. Future bikeways or bike lanes will be constructed that connect project residences to neighboring uses such the Central High School East campus, the Glacier Point Middle School, and the Harvest Elementary School.
Objective RC-8 Reduce the consumption of non-renewable energy resources by requiring and encouraging conservation measures and the use of alternative energy sources.	Consistent. The project will comply with Title 24 Energy Efficiency Standards and CalGreen Code requirements for solar ready roofs, electric vehicle charging, and water conservation. The 2019 Title 24 Standards went into effect on January 1, 2020. Proposed buildings that would receive building permits after January 1, 2020 would be subject to the 2019 Title 24 Standards. One of the notable changes in the 2019 Title 24 Standards includes the solar photovoltaic systems requirement for new low-rise residential homes.
Policy RC-8-a Existing Standards and Programs. Continue existing beneficial energy conservation programs, including adhering to the California Energy Code in new construction and major renovations.	Consistent. The project will comply with all applicable energy standards such as Title 24 Building Energy Standards and home appliance purchased for the homes will comply with Title 20 Appliance Standards.
Policy RC-8-b Energy Reduction Targets. Strive to reduce per capita residential electricity use to 1,800 kWh per year and nonresidential electricity use to 2,700 kWh per year per capita by developing and implementing incentives,	Consistent. The project will comply with the Title 24 energy standards in effect at the time building permits are processed for approval. With the new solar panel requirements, homes are expected to meet or exceed this target.

Climate Action Plan Policy	Project Consistency
design and operation standards, promoting alternative energy sources, and cost-effective savings.	

AB 32 Scoping Plan

The California State Legislature adopted AB 32 in 2006. AB 32 focuses on reducing GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, the ARB adopted the Climate Change Scoping Plan (Scoping Plan) in 2008, which outlines actions recommended to obtain that goal. The Scoping Plan calls for an "ambitious but achievable" reduction in California's GHG emissions, cutting approximately 30 percent from BAU emission levels projected for 2020, or about 10 percent from 2008 levels. On a per-capita basis, that means reducing annual emissions of 14 tons of carbon dioxide for every man, woman, and child in California down to about 10 tons per person by 2020. As stated earlier, the ARB has updated its emission inventory forecasts and now estimates a reduction of 21.7 percent is required from BAU in 2020 to achieve AB 32 targets.

The Scoping Plan contains a variety of strategies to reduce the State's emissions. As shown in Table 3.8-8, the project is consistent with most of the strategies, while others are not applicable to the Project. As discussed earlier, the 2017 Scoping Plan Update strategies primarily rely on increasing the stringency of existing regulations with which the Project would continue to comply, support through the Project's design, and implementation of the General Plan goals and policies.

Table 3.8-8
Consistency with AB 32 Scoping Plan[13]

Scoping Plan Measure	Implementing Regulations	Project Consistency
California Cap-and-Trade Program Linked to Western Climate Initiative	Regulation for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800)	Consistent. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period.
California Light-Duty Vehicle Greenhouse Gas Standards	Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles 2012 LEV III Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards	Consistent. This measure applies to all new vehicles starting with model year 2012. The project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with construction and operation of the project would be required to comply with the Pavley emissions standards.
Low Carbon Fuel Standard.	2009 readopted in 2015. Regulations to Achieve Greenhouse Gas Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480	Consistent. This measure applies to transportation fuels utilized by vehicles in California. The project would not conflict with implementation of this measure. Motor vehicles associated with construction and operation of the project would utilize low carbon transportation

[13] Ibid. Page 113.

Scoping Plan Measure	Implementing Regulations	Project Consistency
		fuels as required under this measure.
Regional Transportation-Related Greenhouse Gas Targets.	SB 375. Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28	Consistent. The project will provide residential development in the region that is consistent with the increased development densities promoted in the 2018 Regional Transportation Plan/Sustainable Communities Strategy (SCS). The project is not within an SCS priority area and so is not subject to requirements applicable to those areas.
Goods Movement	Goods Movement Action Plan January 2007.	Not applicable. The project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
Medium/Heavy-Duty Vehicles	2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer Greenhouse Gas Regulation	Consistent. This measure applies to medium- and heavy-duty vehicles that operate in the State. The project would not conflict with implementation of this measure. Medium- and heavy-duty vehicles associated with construction and operation of the project would be required to comply with the requirements of this regulation.
High Speed Rail	Funded under SB 862	Not applicable. This is a statewide measure that cannot be implemented by a project applicant or lead agency.
Energy Efficiency	Title 20 Appliance Efficiency Regulation	Consistent. The project would not conflict with implementation of this measure. The project will comply with the latest energy efficiency standards and incorporate applicable energy efficiency features designed to reduce project energy consumption.
	Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Building	
	Title 24 Part 11 California Green Building Code Standards	
Renewable Portfolio Standard/Renewable Electricity Standard.	2010 Regulation to Implement the Renewable Electricity Standard (33% 2020)	Consistent. PG&E obtained 33 percent of its power supply from renewable sources such as solar and geothermal in 2017, and about 70 percent of the electricity it delivers is carbon-free, including nuclear and large hydroelectric facilities. The owners of residences within the project would purchase power that consists of a greater percentage of renewable sources and could install renewable solar power systems that will assist the utility in achieving exceeding the renewable mandate.
	SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030)	
Million Solar Roofs	Tax incentive program	Consistent. This measure is intended

Scoping Plan Measure	Implementing Regulations	Project Consistency
Program		to increase solar throughout California by means of a variety of electricity providers and existing solar programs. Projects within the plan area will be able to take advantage of incentives that are in place at the time of construction. The project includes installation of solar panels.
Water	Title 24 Part 11 California Green Building Code Standards	Consistent. The project will comply with the California Green Building Standards Code, which requires a 20 percent reduction in indoor water use. The project will also comply with the MWELO as required by the City's development code and water ordinance.
	SBX 7-7—The Water Conservation Act of 2009	
	Model Water Efficient Landscape Ordinance	
Green Building Strategy	Title 24 Part 11 California Green Building Code Standards	Consistent. The State will increase the use of green building practices. The project would implement required green building strategies through existing regulation that requires the project to comply with various CALGreen requirements. The project includes sustainability design features that support the Green Building Strategy.
Industrial Emissions	2010 ARB Mandatory Reporting Regulation	Not applicable. The project is not an industrial land use.
Recycling and Waste	Title 24 Part 11 California Green Building Code Standards	Consistent. The project would not conflict with implementation of these measures. The project is required to achieve the recycling mandates via compliance with the CALGreen code. The project would utilize City of Fresno recycling services.
	AB 341 Statewide 75 Percent Diversion Goal	
Sustainable Forests	Cap-and-Trade Offset Projects	Not applicable. The project site is in an area designated for urban uses. No forested lands exist on-site.

Scoping Plan Measure	Implementing Regulations	Project Consistency
High Global Warming Potential Gases	ARB Refrigerant Management Program CCR 95380	Not applicable. The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage system. Homes do not use large systems subject to the refrigerant management regulations adopted by ARB.
Agriculture	Cap-and-Trade Offset Projects for Livestock and Rice Cultivation	Not applicable. The project site is proposed for urban development. No grazing, feedlot, or other agricultural activities that generate manure occur currently exist on-site or are proposed to be implemented by the project.

In summary, the Project incorporates a number of features that would minimize GHG emissions. These features are consistent with project-level strategies identified by the ARB's Scoping Plan and the City of Fresno GHG Reduction Plan. As demonstrated in the impact analysis above, the Project would achieve a 39.3 percent reduction from the BAU inventory by 2025 and 48.3 percent from the BAU inventory by 2030; therefore, the Project would not significantly hinder or delay the State's ability to meet the reduction targets contained in AB 32 or SB 32 or conflict with implementation of the Scoping Plan. The Project promotes the goals of the Scoping Plan through implementation of design measures that reduce energy consumption, water consumption, and reduction in VMT. Therefore, the Project does not conflict with any plans to reduce GHG emissions. The impact would be ***less than significant***.

<u>AB 32 Scoping Plan Update (2017 Scoping Plan)</u>

The 2017 Climate Change Scoping Plan Update (2017 Scoping Plan) includes the strategy that the State intends to pursue to achieve the 2030 targets of Executive Order S-3-05 and SB 32. The 2017 Scoping Plan includes the following summary of its overall strategy for reaching the 2030 target:

- SB 350
    - Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030.
    - Doubling of energy efficiency savings by 2030.
- Low Carbon Fuel Standard (LCFS)

  - Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020).

- Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
  - Maintaining existing GHG standards for light- and heavy-duty vehicles.
  - Put 4.2 million zero-emission vehicles (ZEVs) on the roads.
  - Increase ZEV buses, delivery and other trucks.
- Sustainable Freight Action Plan
  - Improve freight system efficiency.
  - Maximize use of near-zero emission vehicles and equipment powered by renewable energy.
  - Deploy over 100,000 zero-emission trucks and equipment by 2030.
- Short-Lived Climate Pollutant (SLCP) Reduction Strategy
  - Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
  - Reduce emissions of black carbon 50 percent below 2013 levels by 2030.
- SB 375 Sustainable Communities Strategies
  - Increased stringency of 2035 targets.
- Post-2020 Cap-and-Trade Program
  - Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
  - ARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, ARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.

- By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Table 3.8-9 provides an analysis of the Project's consistency with the 2017 Scoping Plan Update measures.

Table 3.8-9
Consistency with AB 32 2017 Scoping Plan Update[14]

Scoping Plan Measure	Project Consistency
SB 350 50% Renewable Mandate. Utilities subject to the legislation will be required to increase their renewable energy mix from 33% in 2020 to 50% in 2030.	Consistent: The project will purchase electricity from a utility subject to the SB 350 Renewable Mandate.
SB 350 Double Building Energy Efficiency by 2030. This is equivalent to a 20 percent reduction from 2014 building energy usage compared to current projected 2030 levels	Not Applicable. This measure applies to existing buildings. New structures are required to comply with Title 24 Energy Efficiency Standards that are expected to increase in stringency until residential housing achieves zero net energy.
Low Carbon Fuel Standard. This measure requires fuel providers to meet an 18 percent reduction in carbon content by 2030.	Consistent. Vehicles accessing the project site will use fuel containing lower carbon content as the fuel standard is implemented.
Mobile Source Strategy (Cleaner Technology and Fuels Scenario) Vehicle manufacturers will be required to meet existing regulations mandated by the LEV III and Heavy-Duty Vehicle programs. The strategy includes a goal of having 4.2 million ZEVs on the road by 2030 and increasing numbers of ZEV trucks and buses.	Consistent. Project residents can be expected to purchase increasing numbers of more fuel efficient and zero emission cars and trucks each year. The 2016 CALGreen Code requires electrical service in new single-family housing to be EV charger-ready. Home deliveries will be made by increasing numbers of ZEV delivery trucks.
Sustainable Freight Action Plan The plan's target is to improve freight system efficiency 25 percent by increasing the value of goods and services produced from the freight sector, relative to the amount of carbon that it produces by 2030. This would be achieved by deploying over 100,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030.	Not Applicable. The measure applies to owners and operators of trucks and freight operations. However, home deliveries are expected to be made by increasing number of ZEV delivery trucks.
Short-Lived Climate Pollutant (SLCP) Reduction Strategy. The strategy requires the reduction of SLCPs by 40 percent from 2013	Consistent. The project will include only natural gas hearths that produce very little black carbon compared to woodburning fireplaces and

[14] Ibid. Page 120.

Scoping Plan Measure	Project Consistency
levels by 2030 and the reduction of black carbon by 50 percent from 2013 levels by 2030.	heaters.
SB 375 Sustainable Communities Strategies. Requires Regional Transportation Plans to include a sustainable communities strategy for reduction of per capita vehicle miles traveled.	Consistent. The project will provide residential development in the region that is consistent with the Regional Transportation Plan/Sustainable Communities Strategy (SCS) strategy to increase development densities to reduce VMT. The project is not within an SCS priority area and so is not subject to requirements applicable to those areas.
Post-2020 Cap-and-Trade Program. The Post 2020 Cap-and-Trade Program continues the existing program for another 10 years. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers.	Consistent. The post-2020 Cap-and-Trade Program indirectly affects people who use the products and services produced by the regulated industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the program's first compliance period.
Natural and Working Lands Action Plan. The ARB is working in coordination with several other agencies at the federal, state, and local levels, stakeholders, and with the public, to develop measures as outlined in the Scoping Plan Update and the governor's Executive Order B-30-15 to reduce GHG emissions and to cultivate net carbon sequestration potential for California's natural and working land.	Not Applicable. The project is residential development and will not be considered natural or working lands.

Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that operation of the Project would comply with whatever measures are enacted that state lawmakers decide would lead to an 80 percent reduction below 1990 levels by 2050. In its 2008 Scoping Plan, ARB acknowledged that the "measures needed to meet the 2050 are too far in the future to define in detail." In the First Scoping Plan Update;

however, ARB generally described the type of activities required to achieve the 2050 target: "energy demand reduction through efficiency and activity changes; large scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and rapid market penetration of efficiency and clean energy technologies that requires significant efforts to deploy and scale markets for the cleanest technologies immediately." The 2017 Scoping Plan provides an intermediate target that is intended to achieve reasonable progress toward the 2050 target.

Accordingly, taking into account the proposed Project's emissions, Project design features, and the progress being made by the State towards reducing emissions in key sectors such as transportation, industry, and electricity, the Project would be consistent with State GHG Plans and would further the State's goals of reducing GHG emissions to 1990 levels by 2020, 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050, and does not obstruct their attainment. Impacts are ***less than significant.***

Mitigation Measures: None are required.

3.10 Hydrology and Water Quality

This section of the DEIR identifies potential impacts of the proposed Project pertaining to hydrology, water supply and water quality. To assist in evaluation of this environmental impact, an SB 610 Water Supply Assessment was prepared and is included as Appendix C.

Environmental Setting

Regional Hydrology

The greater Fresno area, including the Project site, is underlain by the Kings River Sub-basin, which, along with six other sub-basins, comprises the San Joaquin Valley Groundwater Basin. In turn, the San Joaquin Basin is located within the Tulare Lake Hydrologic Region. The Tulare Lake Hydrologic Region spans approximately 10.9 million acres (17,000 square miles) and includes most of Fresno County. The Region encompasses the southern one-third of the Central Valley Regional Water Quality Control Board (RWQCB) jurisdiction.

The Kings River Sub-basin extends from the Sierra Nevada foothills on the east to the San Joaquin Valley trough on the west, and from the San Joaquin River on the north to roughly the Fresno County line on the south. Historically, water demand within the City's jurisdiction has been met by extracting groundwater from the Kings Sub-basin. Groundwater levels since 1990 have declined from less than 0.5 feet per year in the southwest portion of the downtown area, to a rate of 1.5 feet per year for northern and southern areas of the City, to a maximum of 3 feet per year in the northeastern area of the City. A groundwater mound is located near the Fresno-Clovis Regional Wastewater Reclamation Facility (Regional Facility) as a result of the disposal of treated effluent at the FCRWRF percolation basins.[1]

The San Joaquin River and the Kings River are the principal rivers that influence the hydrology in the Fresno area. The western slopes of the Sierra Nevada drain to the west via the San Joaquin and Kings Rivers. The Kings River is connected to the San Joaquin River by the James Bypass, a manmade canal. Floodwater from the Kings River is diverted to the San Joaquin River. Three dams control flows on the two rivers. The Friant and Mendota Dams are located on the San Joaquin River. These two dams provide some flood control; however, these two dams were not designed for the purpose of flood control. The Pine Flat Dam was built for the purpose of flood control. In addition to the dams on the two rivers, there are reservoirs and detention basins that have been constructed to prevent flooding. These facilities include the Redbank Dam and the

[1] Fresno General Plan Draft EIR (2020), page 4.10-3.

Redbank-Fancher Creeks Flood Control Project. The region includes two dams (Big Dry Creek Dam and Fancher Creek Dam), three detention basins (Redbank Creek, Pup Creek, and Alluvial Drain Detention Basins), and canals to convey discharges in and around the City of Fresno. These facilities were designed to protect developed areas from a 200-year storm event.[2]

Groundwater used by the City to meet its demands is replenished by three different methods:

- Natural recharge
- Net Subsurface inflow
- Intentional groundwater recharge

Natural recharge occurs through rainfall, irrigation, canal and stream flows that seep into the soil and replenish the aquifer below. Based on City data, the City estimated the natural recharge was approximately 25,400 acre feet in 2015. As additional development occurs throughout the Fresno area, there will be less pervious surfaces to allow natural recharge to occur. However, as the City annexes portions of surrounding areas, the amount of natural recharge allocated to the City will increase. At buildout, the natural recharge is estimated to be approximately 27,000 AF/year.

Subsurface recharge occurs from the movement of groundwater from external sources such as the Sierra Nevada moving into the local aquifer. Since the groundwater table surrounding the City of Fresno is higher than inside the City planning boundaries, subsurface water tends to flow from surrounding areas with a higher groundwater table into the aquifer within the City's planning boundaries that has a lower groundwater table. Based on City data, the annual subsurface inflow to the City is approximately 48,900 AF in 2020. By the year 2040, the City and the North Kings Groundwater Sustainability Agency (NKGSA) anticipates that groundwater operations (i.e., subsurface inflows and outflows) would be balanced and subsurface flows will not be directed to within the City's planning boundaries.

Intentional recharge is provided by directing surface water into the underground aquifer by means of groundwater recharge basins located throughout the City. Currently, the City's primary recharge facility is Leaky Acres, located just northwest of Fresno-Yosemite International Airport. Other recharge facilities include FMFCD storm drainage basins and the Alluvial Groundwater Recharge System (AGRS) owned and operated by the City of Clovis. Based on the 2015 UWMP, the average intentional recharge between 2000 and 2013 was approximately 50,000 AF/year. The

[2] Fresno General Plan Draft EIR (2020), page 4.10-2.

intentional recharge quantity in 2015 was approximately 53,100 AF, and reflects a normal year precipitation.

Based on the natural groundwater recharge (25,400 AF), subsurface inflow (47,100 AF), and intentional normal precipitation year recharge (53,100 AF) that occurred in 2015, the total groundwater recharge during normal year supply is approximately 125,600 AF. At buildout, the City anticipates that the natural groundwater recharge will increase to 27,000 AF/year, subsurface inflow will be 0 AF/year, and intentional groundwater recharge will increase to 75,100 AF/year due to an increase in the capacity of surface water treatment. The total groundwater recharge at General Plan buildout in 2056 is expected to be approximately 102,100 AF/year.

In 2004, the Northeast Surface Water Treatment Facility (NESWTF) located at Chestnut and Behymer Avenues began operation. The treatment facility is designed to treat 30 million gallons of water per day (mgd). In 2018, the Southeast Surface Water Treatment Facility (SESWTF) located at East Floradora Avenue and North Armstrong Avenue began operation. The treatment facility is fed with surface water from the Kings River through a thirteen-mile-long Kings River Pipeline and is designed to have initial treatment capacity of 54 mgd and ultimate treatment capacity of 80 mgd.

The NESWTF and SESWTF have reduced the dependence on groundwater pumping by the City needed to meet water demand. Prior to operation of the NESWTF, 100 percent of the City's water demand was met through groundwater pumping.

The City currently has approximately 260 active pump stations, which pump an average of 74 mgd. Groundwater pumping data provided by the City indicates that approximately 83,360 AF was pumped in 2015. Between 2011 and 2015, the City pumped an average of approximately 111,522 AF/year.4 This average groundwater pumping has exceeded the current estimated groundwater safe yield of approximately 72,500 AF/year.

Groundwater will continue to be an important part of the City's supply but will not be relied upon as heavily as has historically been the case. The 2015 UWMP stated that groundwater pumped by the City decreased from approximately 128,578 AF/year in 2010 to approximately 83,360 AF/year in 2015. This would represent a decrease in the groundwater percentage of total water supply from 87 percent to 75 percent. In order to meet this projection, the City is planning

to rely on expanding their delivery and treatment of surface water supplies and groundwater recharge activities.[3]

Drainage and Flood Control

Storm drainage facilities within the Fresno-Clovis Metropolitan area are planned, implemented, operated and maintained by the Fresno Metropolitan Flood Control District (FMFCD). The storm drainage facilities are documented in the Storm Drainage and Flood Control Master Plan (SDFCMP), which is developed and updated by FMFCD. The master plan drainage system for the City's Planning Area consists of over 158 individual drainage areas or urban watersheds. Drainage area boundaries are determined by geographic and topographic features and the economics of providing storm drainage service to the watershed. The storm drainage facilities within a drainage area consist of storm drain inlets, pipeline, retention basins, urban detention (water quality) basins, and stormwater pump stations.

Surface grading improvements such as streets, curbs, gutters, and valley gutters are part of the City of Fresno infrastructure, but the general grading of these features is governed by the SDFCMP to provide a coherent implementation of drainage within the City.[4]

Traversing the Project site, with banks elevated above the surrounding ground, are two FID-owned canals, Silvia No. T and Minor Thornton. These canals, unlined, contribute to recharge on the site at an indeterminate rate. The canals are planned to be piped underground and the Project applicant will be required to work with FMFCD for the required permit(s) to modify the canal.

According to FEMA Firm Map number 06019C1545H, the Project site is not within a floodplain or flood prone area and there are no natural drainage courses on the Project site. The Project site is located in Zone X. Zone X is the flood insurance rate zone that corresponds to (1) areas outside the 100-year floodplain, (2) areas of 100-year sheet flow flooding where average depths are less than one foot, (3) areas of 100-year stream flooding where the contributing drainage area is less than one square mile, or (4) areas protected from the 100-year flood by levees. No base flood elevation or depths are shown within this zone.

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[3] Fresno General Plan Draft EIR (2020), page 4.10-4.

[4] Fresno General Plan Draft EIR (2020), page 4.10-2.

Friant Dam, the closest dam to the City of Fresno, is located approximately 20 miles northeast of the Project site on the San Joaquin River and is owned and operated by the United States Bureau of Reclamation (USBR). Friant Dam was built in 1942 and is a concrete gravity dam with a capacity of 520,528 af. The dam is 319 feet high, 3,488 feet long and 20 feet wide and constructed of concrete (Dams Owned and Operated by Federal Agencies, May 2007).

An inundation study completed in 1997 by the Bureau of Reclamation redefined a worst-case scenario dam break of Friant Dam to include inundation of a significant portion of the City of Fresno, including the Project site, and a much larger portion of Fresno County than previously described. In addition, failure of upstream dams such as Shaver Lake, Lake Thomas A. Edison and Huntington, Florence, Mammoth Pool, Wishon, and Courtright Reservoirs, could contribute to flooding conditions on the San Joaquin and Kings Rivers, respectively, if downstream capacity of the major dams is exceeded.

Project Site

The Project site is within the City limits of Fresno (annexed in 2015) and occupies Assessor's Parcel Numbers 512-02-126 and 512-02-150S. The land structure is relatively flat and the natural slope is to the southwest. Runoff from precipitation currently percolates into the ground or drains into neighboring drainage areas and eventually into drainage basins. The site was most recently planted with relatively young almond trees but was previously vacant for several years. The site, when farmed, utilizes Fresno Irrigation District surface water supplemented with agricultural irrigation wells as required. Refer to Section 3.10-2 for a description of existing site water use and anticipated Project water use.

The Project intends to connect to the City's water system to provide potable water for the residential development. According to the City's adopted Urban Water Management Plan (2015), the City's existing water system consists of about 1,799 miles of transmission and distribution pipelines, 260 active municipal groundwater wells, 224 of which registered flows in the past year, 2 surface water treatment facilities of rated capacities of 2 and 30 mgd, 3 water storage facilities, and 4 booster pump facilities. The distribution system was previously divided into four quasi-pressure zones to help regulate and optimize system pressures as there is an approximate 120 feet of elevation decrease running across the City from the northeast to the southwest.

Upon approval, the Project will be required to construct and/or tie into existing City infrastructure for water, sewer and stormdrain. These facilities are located proximate to the Project site.

Regulatory Setting

Federal Agencies and Regulations

Clean Water Act

The Clean Water Act (CWA) is intended to restore and maintain the chemical, physical, and biological integrity of the nation's waters (33 CFR 1251). The regulations implementing the CWA protect waters of the U.S. including streams and wetlands (33 CFR 328.3). The CWA requires states to set standards to protect, maintain, and restore water quality by regulating point source and some non-point source discharges. Under Section 402 of the CWA, the National Pollutant Discharge Elimination System (NPDES) permit process was established to regulate these discharges.

Federal Emergency Management Agency (FEMA)

The National Flood Insurance Act (1968) makes available federally subsidized flood insurance to owners of flood-prone properties. To facilitate identifying areas with flood potential, Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRM) that can be used for planning purposes.

State Agencies & Regulations

State Water Resources Control Board

The State Water Resources Control Board (SWRCB), located in Sacramento, is the agency with jurisdiction over water quality issues in the State of California. The SWRCB is governed by the Porter-Cologne Water Quality Act (Division 7 of the California Water Code), which establishes the legal framework for water quality control activities by the SWRCB. The intent of the Porter-Cologne Act is to regulate factors which may affect the quality of waters of the State to attain the highest quality which is reasonable, considering a full range of demands and values. Much of the implementation of the SWRCB's responsibilities is delegated to its nine Regional Boards. The proposed Project site is located within the Central Valley Region.

California Water Code

The Federal CWA places the primary responsibility for the control of surface water pollution and for planning the development and use of water resources with the states, although this does establish certain guidelines for the States to follow in developing their programs and allows the

Environmental Protection Agency to withdraw control from states with inadequate implementation mechanisms.

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resource Control Board (SWRCB) and each of the RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Federal CWA. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region the regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

The Water Code Section 13260 requires all dischargers of waste that may affect water quality in waters of the state to prepare and provide a water quality discharge report to the RWQCB. Section 13260a-c is as follows:

(a) Each of the following persons shall file with the appropriate regional board a report of the discharge, containing the information that may be required by the regional board:

(1) A person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state, other than into a community sewer system.

(2) A person who is a citizen, domiciliary, or political agency or entity of this state discharging waste, or proposing to discharge waste, outside the boundaries of the state in a manner that could affect the quality of the waters of the state within any region.

(3) A person operating, or proposing to construct, an injection well.

(b) No report of waste discharge need be filed pursuant to subdivision (a) if the requirement is waived pursuant to Section 13269.

(c) Each person subject to subdivision (a) shall file with the appropriate regional board a report of waste discharge relative to any material change or proposed change in the character, location, or volume of the discharge.

Water Code section 10910 (SB 610)

Water Code section 10910 (SB 610) requires a water supply assessment to evaluate whether total projected water supplies will meet the projected water demand for certain development projects that are otherwise subject to CEQA review. Existing law identifies those projects as (a) a residential development of more than 500 dwelling units; (b) a shopping center or business employing more than 1,000 persons or having more than 500,000 square feet of floor space; (c) a commercial office building employing more than 1,000 persons or having more than 250,000 square feet; (d) a hotel or motel with more than 500 rooms; (e) an industrial or manufacturing establishment housing more than 1,000 persons or having more than 650,000 square feet or 40 acres; (f) a mixed use project containing any of the foregoing; or (g) any other project that would have a water demand at least equal to a 500 dwelling unit project. The proposed Project is subject to the provision of Water Code section 10910 (SB 610) because it exceeds 500 dwelling units. Refer to Impact Section 3.10-2 herein for the discussion pertaining to the Water Supply Assessment that was prepared for the Project.

Regional Water Quality Board

The Regional Water Quality Control Board (RWQCB) administers the National Pollutant Discharge Elimination System (NPDES) storm water-permitting program in the Central Valley region, including Fresno. Construction activities on one acre or more are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). The General Construction Permit requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The plan will include specifications for Best Management Practices (BMPs) that will be implemented during proposed Project construction to control degradation of surface water by preventing the potential erosion of sediments or discharge of pollutants from the construction area. The General Construction Permit program was established by the RWQCB for the specific purpose of reducing impacts to surface waters that may occur due to construction activities. BMPs have been established by the RWQCB in the California Storm Water Best Management Practice Handbook (2003), and are recognized as effectively reducing degradation of surface waters to an

acceptable level. Additionally, the SWPPP will describe measures to prevent or control runoff degradation after construction is complete, and identify a plan to inspect and maintain these facilities or project elements.

Local Regulations

City of Fresno General Plan Policies

The following City of Fresno General Plan policies have been adopted to address water quality, groundwater supplies and recharge, storm drainage and flood hazards:

Public Facilities Element

E-22-C. Policy *The Department of Public Utilities will recommend capital improvement plans and fee schedules to meet the demands of planned development (including both intensification of established areas and new development within designated growth areas) and continue to provide adequate water quantity and quality to serve the established urban community including those communities located outside the city's adopted sphere of influence where determined that public health standards of water quality and quantity are not being met.*

E-23-e. Policy *…The City of Fresno shall support multiple uses of flood control and drainage facilities as follows:*

- *The City of Fresno shall utilize, wherever practical, FMFCD facilities for groundwater management and recharge; and*
- *The City of Fresno shall encourage development of ponding basin facilities located within or near residential areas, so as to maximize the potential for recreational use compatible with the storm water and groundwater recharge functions.*

E-22-h. Policy *Implement appropriate measures consistent with water system policies, including the removal of pump stations from active use, installation of well-head treatment facilities, construction of above-ground storage and surface water treatment facilities, and enhancement of transmission grid mains to ensure adequate water quality and quantity.*

E-23-d. Policy *The City of Fresno shall coordinate construction with other public and private agencies, particularly with respect to streets, sewerage, water, gas, electric, and*

irrigation improvements, with flood control facilities to seek the greatest public benefit at the least public cost.

E-23-i. Policy — *The City of Fresno shall work with the Fresno Metropolitan Flood Control District to prevent and reduce the existence of urban storm water pollutants to the maximum extent practical, and ensure that surface and groundwater quality, public health and the environment will not be adversely affected by urban runoff, pursuant to the requirements of the National Pollution Discharge Elimination System (NPDES) Act.*

Resource Conservation Element

G-3a. Policy — *Monitor key water pollutants to determine directions and rates of contaminant travel, in order to achieve cost-effective and timely intervention for containment and remediation of contamination, and to indicate which areas may require water treatment to supply acceptable-quality drinking water.*

G-3-c. Policy — *Support continued efforts to identify and mitigate detriments to surface and groundwater quality that may result from storm water discharge from urbanized areas.*

G-3-e. Policy — *Support and encourage actions of the Regional Water Quality Control Board, the State Environmental Protection Agency, and the local health department to control and prevent water contamination, including leaking underground storage tank and abandoned storage tank abatement programs.*

G-3-f. Policy — *Continue programs to collect and treat sewage to enhance water quality and reclaim water resources in a manner that protects the Fresno Sole Source Aquifer.*

G-3-i. Policy — *Continue to protect areas of beneficial natural groundwater recharge by preventing uses which can contaminate soil or groundwater.*

G-4-b. Policy — *In cooperation with other agencies, enhance the recharge of groundwater as may be necessary.*

G-4-c. Policy — *Address localized groundwater deficiencies and groundwater quality problems that exist or may arise in portions of the planning area.*

G-4-d. Policy *Explore methods of using treated and reclaimed wastewater for irrigating crops and landscaping, while ensuring that there will be no negative impacts on groundwater quality.*

Safety Element

I-5-e. Policy *Ensure implementation of land grading and development policies which protect area residents from flooding caused by urban runoff produced by events which exceed the capacity of the Storm Drainage and Flood Control Master Plan system of facilities.*

I-5-f. Policy *The minimum level of design flood protection shall be the 100-year (one percent) event, as established by the best and most current available data from the U.S. Army Corps of Engineers and the California Department of Water Resources, pursuant to Federal Emergency Management Agency (FEMA) direction.*

I-5-a. Policy *Pursuant to state law, the city shall prepare and update emergency dam failure inundation plans, evacuation plans and other emergency response plans for designated flood-prone areas, including the San Joaquin river bottom.*

I-6-i. Policy *The city will utilize conditions for development projects, will adopt and enforce ordinances, and will use its police powers for land use regulation, code enforcement and nuisance abatement in order to prohibit the inappropriate use of, and/or discharge of, toxic and hazardous materials to the atmosphere, to wastewater collection and storm drainage systems, to groundwater, and to surface bodies of water, when such use or discharge threatens public health, safety, or general welfare.*

Methodology

The analysis considered current conditions of the Project site and applicable laws, regulations and guidelines pertaining to hydrology and water quality. Various databases, planning documents (including the City's adopted Urban Water Management Plan), and maps were reviewed to assist in the environmental evaluation. Specific references are noted in the text. In addition, an SB 610 Water Supply Assessment, which calculated projected water demands, was prepared and is included as Appendix C.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item.

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

    i. result in substantial erosion or siltation on- or offsite;

    ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

    iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

    iv. impede or redirect flood flows?

- In flood hazard, tsunami or seiche zones, risk release of pollutants due to project inundation?
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impacts and Mitigation Measures

Impact 3.10-1: *Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

Less Than Significant With Mitigation. The Project has the potential to impact water quality standards and/or waste discharge requirements during construction (temporary impacts) and operation (polluted stormwater runoff due to an increase in impervious surfaces). Impacts are discussed below. Please also refer to Impact 3.10-3 within this Section for the analysis pertaining to the Project drainage/detention design.

Construction

Grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas.

Three general sources of potential short-term construction-related stormwater pollution associated with the proposed Project are: 1) the handling, storage, and disposal of construction materials containing pollutants; 2) the maintenance and operation of construction equipment; and 3) earth moving activities which, when not controlled, may generate soil erosion and transportation, via storm runoff or mechanical equipment. Generally, routine safety precautions for handling and storing construction materials may effectively mitigate the potential pollution of stormwater by these materials. These same types of common sense, "good housekeeping" procedures can be extended to non-hazardous stormwater pollutants such as sawdust and other solid wastes.

Poorly maintained vehicles and heavy equipment leaking fuel, oil, antifreeze, or other fluids on the construction site are also common sources of stormwater pollution and soil contamination. In addition, grading activities can greatly increase erosion processes. Two general strategies are recommended to prevent construction silt from entering local storm drains. First, erosion control procedures should be implemented for those areas that must be exposed. Secondly, the area should be secured to control offsite migration of pollutants. These best management practices (BMPs) would be required in the Storm Water Pollution Prevention Plan (SWPPP) to be prepared prior to commencement of Project construction activities. When properly designed and implemented, these "good-housekeeping" practices are expected to reduce short-term construction-related impacts to less than significant.

In accordance with the NPDES Stormwater Program, and as described in the Initial Study Section 3.7 - Geology and Soils, the Project will be required to comply with existing regulatory requirements to prepare a SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the RWQCB has deemed effective in controlling erosion, sedimentation, runoff during construction activities. The specific controls are subject to the review and approval by the RWQCB and are an existing regulatory requirement. Implementation of Mitigation Measure HYD - 1 would ensure that the proposed Project would have a less than significant impact relative to this topic.

Operation

The long-term operations of the proposed Project could result in long-term impacts to surface water quality from urban stormwater runoff. The proposed Project would result in new impervious areas associated with site improvements, including new asphalt, concrete and the proposed structures on site. Urban runoff typically contains oils, grease, fuel, antifreeze, byproducts of combustion (such as lead, cadmium, nickel, and other metals) and other household pollutants. Precipitation early in the rain season displaces these pollutants into storm water resulting in high pollutant concentrations in initial wet weather runoff. This initial runoff with peak pollutant levels can be referred to as the "first flush" of storm events.

The proposed Project would install storm water drainage facilities (e.g. storm drainage mechanisms and storm water pipes) that would be in compliance with the City of Fresno and FMFCD Design Standards. See Section 3.10-3 for more information pertaining to Project-related storm water drainage.

In accordance with the City's storm water management regulations and NPDES Stormwater Program (General Stormwater Permit), BMPs would be implemented to reduce the amount of pollution in stormwater discharged from the Project site. The management of water quality through the requirement to obtain a General Stormwater Permit and implement appropriate BMPs would ensure that water quality does not degrade to levels that would violate water quality standards. These are existing regulatory requirements.

In addition, the Project will generate typical wastewater (sewer) associated with residential developments and will connect to the City's sewer system. See Section 3.19 – Utilities for a discussion regarding waste discharge requirements, wastewater characteristics and water quality standards pertaining to Project-related wastewater. The Project will not result in a violation of any water quality standards or waste discharge requirements. Therefore, with mitigation, impacts related to this specific resource result in a less than significant impact.

Mitigation Measures: HYD-1 (SWPPP and RWQCB Compliance). See attached Project-specific Mitigation Measure Monitoring Checklist and MEIR Mitigation Measure Monitoring Checklist.

HYD - 1: Prior to clearing, grading, and disturbances to the ground such as stockpiling, or excavation, the Project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ). The SWPPP shall be designed

with Best Management Practices (BMPs) that the RWQCB has deemed as effective at reducing erosion, controlling sediment, and managing runoff. These include: covering disturbed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, and permanent seeding. Sediment control BMPs, installing silt fences or placing straw wattles below slopes, installing berms and other temporary run-on and runoff diversions. These BMPs are only examples of what should be considered and should not preclude new or innovative approaches currently available or being developed. Final selection of BMPs will be subject to approval by City of Fresno and the RWQCB. The SWPPP will be kept on site during construction activity and will be made available upon request to representatives of the RWQCB.

Impact 3.10-2: *Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

Less Than Significant With Mitigation. The proposed Project would add demand for water to the City of Fresno water system, which is reliant on a combination of surface water and groundwater to serve its customers. The information herein is based on the Water Supply Assessment that was prepared for the Project and approved by the City of Fresno (Appendix C).

Project Site WSA History

The WSA for the Parc West Project is an update to the previously-approved Westlake Development Project WSA that was adopted by the City of Fresno in 2011. The WSA Update provides information for use in the CEQA analysis for the proposed Parc West Project.

Purpose of Updating the Westlake WSA

The Project Applicant (Granville Homes) for the Westlake project has determined that the Westlake project is no longer viable and is pursuing a "scaled-down" Project, known as "Parc West" on a portion of the same site as the Westlake project. Therefore, the "Project" for this WSA Update is the abandonment of the Westlake Development project and the construction and operation of the Parc West Project. The WSA Update analyzed the scaled-down Parc West Project and utilized the information in the previous Westlake WSA to the extent practical, but also provided updated information where necessary and applicable. The entire previously-approved Westlake WSA is included as Appendix A to the updated Parc West WSA (Appendix C).

Disposition of the Adopted Westlake WSA

The Updated WSA is intended to supersede the previously adopted Westlake WSA. Since the adopted conditions of approval and maps for Westlake Development project are being formally abandoned and replaced by the Parc West Project, so will the Westlake WSA. The Updated WSA will serve as a stand-alone document supporting only the Parc West Project. Any future development of the remaining acreage of the Westlake Project (which is approximately 300 acres) will be subject to additional CEQA analysis and a subsequent WSA if the requirements for implementation of SB 610 are met if or when remaining acreage is to be developed.

Assumptions

Project water demand is determined using the City's adopted 2015 Urban Water Management Plan (UWMP) methodologies and will be calculated on the basis of the following assumptions:

- Residential: 844 single-family units; historic water usages per capita adjusted for City Urban Water Management Plan assumptions regarding water conservation usage effects.
- Park/Trail: 1.819 acres of potentially irrigated public spaces. To be conservative, it is assumed that the entire public space acreage will be irrigated lawn. The previous Westlake WSA assumed irrigated lawn/open space would require 3.0 acre/feet/year of water.
- No units will be occupied until after 2020, therefore this analysis will use the UWMP 2020 target of 247 gallons per capita per day (GPCD), which is 80% of the City's 10-year baseline period (1999-2008) target of 309 GPCD and the confirmed 2020 target.[5]
- Average single-family household size according to the City's most recent Housing Element is 3.07 persons per unit. However, the previous Westlake WSA used 3.2 persons per dwelling unit, therefore, this analysis will use 3.2 persons per unit. With 844 units, this equates to approximately 2,700 persons (rounded).

Project Water Demand

Residential: 844 dwelling units X 3.2 persons per dwelling unit = 2,700 persons X 247 GPCD = 666,900 total gallons per day X 365 days per year = 243,418,500 gallons per year (or ~747 acre/feet/year)

[5] City of Fresno 2015 UWMP, page 5-9.

Park/Trail: 1.819 acres X 3.0 acre/feet/year = ~5.5 acre/feet/year

Total Water Demand: 747 acre/feet/year for Residential
5.5 acre/feet/year for Park/Trail
752.5 acre/feet/year

Based on the calculations above, the Project would require 752.5 acre/feet/year of water. Comparison to the previous Westlake Project, as well as comparisons to the No Project / Agricultural Production and No Project / Buildout Under Existing Land Use Designations is provided below. However, it should be noted that the "baseline" from which the Project is analyzed is existing conditions on the site.

Comparison to Westlake Water Demands

Projected water demand from the previous Westlake Project is shown in Table 3.10-1.

Table 3.10-1 – Previous Westlake Project Water Demand in acre/feet/year

	2013	2020
Residential, Single-Family	1,708	1,626
Residential, Multiple Family	241	229
Commercial	81	81
Lake	168	168
Open Space	39	39
Total	2,237	2,143

Source: Adopted Westlake WSA, page 3-3 (See Appendix A of Appendix D).

As shown in Table 3.10-1, the Westlake project was projected to use 2,143 acre/feet/year of water by year 2020. That total included single-family and multi-family residential units, commercial establishments, public open spaces and a 55-acre lake (taking into account lake fill, evaporation and other factors). The Parc West Project only includes single-family residential units and parks/open space. Comparing the Westlake project to the proposed Parc West Project (752.5 acre/feet/year), the Parc West Project will use approximately 1,390.5 acre/feet/year less water than what was approved for the Westlake project.

Comparison to "No-Project" / Agricultural Use Water Demands

The proposed 160-acre Parc West Project was most recently planted in almond trees, but has historically been used for other crops as well. When farmed, the site uses agricultural water wells. Water use requirements for almond trees can vary depending on location, amount of rainfall, irrigation methods, soil permeability and other factors. Some studies estimate that each acre of

almonds uses 3 to 4 acre/feet/year[6] at full maturity. The Western Farm Press, which uses data collected from growers, estimates that the average water applied is 35.58 acre/inches or 2.97 acre/feet/acre.[7] A 2016 UC Davis study that analyzed costs associated with almond trees in the Central Valley estimated that within 5 years of being planted, almond orchards require approximately 52 acre/inches per year of water (this includes in-season rainfall) or 4.33 acre/feet/acre.[8]

For purposes of this analysis, it is assumed that once full maturity is achieved, almonds on the site will require approximately 4 acre/feet/acre/year.

160 acres of almonds X 4 acre/feet/acre/year = 640 acre/feet/year

Comparing the 160 acres of almonds (640 acre/feet/year) to the 160 acres of the Parc West Project (752.5 acre/feet/year), the Parc West Project will use approximately 112.5 acre/feet/year more water than what would be used by almond orchards on the site.

Comparison to "No Project" / Buildout Under Existing Land Use Designations

According to the City's General Plan, most of the Project site (approximately 150 acres) is designated as Medium Density Residential (5.0 – 12 dwelling units per acre), and the remaining 10 acres is designated as Community Commercial. For purposes of this analysis, it is assumed that the residential portion of the site could potentially be developed with between 750 – 1,800 residential units based on the existing Medium Density Residential Land Use designation. For purposes of calculating potential water use, a minimum development density of 5 dwelling units per acre may occur, which equates to 750 units. It is also assumed that the entire 10 acre portion designated as Community Commercial would be developed. Based on these assumptions, the site would result in the following water demands:

Residential: 750 dwelling units X 3.2 persons per dwelling unit = 2,400 persons X 247 GPCD = 592,800 total gallons per day X 365 days per year = 216,372,000 gallons per year (or ~664 acre/feet/year)

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[6] http://www.slate.com/articles/technology/future_tense/2014/05/_10_percent_of_california_s_water_goes_to_almond_farming.html Accessed Sept. 2018.

[7] https://www.westernfarmpress.com/tree-nuts/8-facts-about-almonds-agriculture-and-drought. Accessed Sept. 2018.

[8] https://coststudyfiles.ucdavis.edu/uploads/cs_public/87/3c/873c1216-f21e-4e3e-8961-8ece2d647329/2016_almondsjv_south_final_10142016.pdf Accessed Sept. 2018.

Commercial: Using the calculations from the previous Westlake WSA, it is assumed that the commercial component would require approximately 3 acre/feet per acre per year. 10 acres of commercial X 3 acre/feet/year = 30 acre/feet/year

Based on the minimum density of 5 dwelling units per acre for 150 acres and 10 acres of Community Commercial, this scenario would require approximately 694 acre/feet/year of water (664 acre/feet/year for the residential portion and 30 acre/feet/year for the commercial portion). However, if a slightly higher buildout density is assumed (7 units per acre), the site would require approximately 959 acre/feet/year (929 acre/feet/year for the residential portion and 30 acre/feet/year for the commercial portion).

Comparison Summary

- Previously approved 430-acre Westlake WSA: 2,143 acre/feet/year
- 160-acre almond orchard water demand: 640 acre/feet/year
- Buildout under existing Land Use designations: 694 – 959 acre/feet/year
- Estimated 160-acre Parc West water demand: 752.5 acre/feet/year

It should be noted that the "baseline" water use for the Parc West Project is not the water demands from the previous Westlake Project. The baseline is calculated from existing site conditions, which based on its most recent use was a 160-acre almond orchard using private agricultural wells. Although the WSA Update is intended to only address water use demands from the proposed Parc West Project, a useful comparison may be to include the balance of the acreage currently planted in almonds (300 acres). Utilizing the estimation of 4 acre/feet/acre/year of water for almonds, if Parc West is built out on 160 acres, and the remaining 300 acres is planted in almonds, the entire site would use approximately 1,953 acre/feet/year (160 acre Parc West = 752.5 acre/feet/year + 300 acres of almonds @ 4 acre/feet/acre/year = 1,200 acre/fee/year). This is approximately 190 acre/feet/year less than the Westlake project when taking into account the entire acreage.

The City has reviewed the Project and determined that it can accommodate the water needs from the Project subject to development impact fees. In addition to demonstrating adequate water supply, the Project is also subject to minimum water pressure requirements. The City of Fresno Municipal Code Section 6-501 states that estimated peak hour water demands shall be based on 2.12 gallons per minute for single-family residential units. The Fire Protection Water Demand shall be added to the overall Project water demands at 1,500 gallons per minute. The sum of the Peak Hour Water Demands and Fire Protection Demands (in gpm) shall establish the total

instantaneous water supply flow required for the Project, inclusive of fire protection. The Project applicant will be required to adhere to these standards and maintain them in perpetuity.

The City's UWMP contains a detailed evaluation of existing sources of water supply, anticipated future water demand, extensive conservation measures, and the development of new water supplies (recycled water, increased recharge, surface water treatment, etc.). Measures contained in the UWMP as well as the City's General Plan are intended to reduce demands on groundwater resources by augmenting supply and introducing conservation measures and other mitigation strategies. In addition to payment of development fee impacts for water, the proposed Project will implement Mitigation Measure HYD – 2 which includes water use reduction measures. This will ensure that impacts from water use remain less than significant.

Water Availability

The proposed Project site is included in the land use / population area covered by the City's 2015 Urban Water Management Plan, which estimated future water demands based on land-use demand factors. The forecast period was based on a review of land-based unit demands factors for 2013 through 2015 and holding the City's General Plan land use acreages at buildout.[9] Projected water demands are shown in Table 3.10-2. As shown in the table, overall water demands are projected to increase from 214,500 af/year in 2020 to 262,500 af/year in 2040, an approximately 22% increase. However, the increase in water use from single-family housing is projected to increase at a slower rate of approximately 13% over the same period from 81,200 af/year in 2020 to 92,100 af/year in 2040.

The proposed Project is anticipated to utilize City groundwater to support the residential development. The Urban Water Management Plan (UWMP) indicates that future demand can be met with continued groundwater pumping, surface water purchases and conservation measures.

[9] City of Fresno 2015 UWMP, page 4-5.

Table 3.10-2 – City-Wide Demands for Potable and Raw Water

Use Type	Additional Description *(as needed)*	Projected Water Use (af)				
		2020	2025	2030	2035	2040
Single Family		81,200	85,700	87,000	91,200	92,100
Multi-Family		23,000	25,100	26,800	28,900	30,400
Commercial	See Note 1	24,800	28,800	32,800	36,800	38,800
Industrial		6,600	6,900	6,400	6,600	6,900
Institutional/Governmental	See Note 1					
Landscape		11,200	11,700	12,200	12,700	13,100
Groundwater recharge/storage/banking	GW recharge	55,800	58,500	61,100	63,800	66,500
Saline water intrusion barrier						
Agricultural irrigation						
Wetlands or wildlife habitat						
Wholesale demand						
Other (define)	Travel Meters	200	200	200	200	200
Losses		11,700	12,700	13,200	14,100	14,500
	Total	214,500	229,600	239,700	254,300	262,500

Notes:1. Institutional and Governmental water usage is included in Commercial.

Source: Fresno 2015 UWMP Table 4-4, page 4-6

Comparing 160 acres of almonds (640 acre/feet/year) to the 160 acres of the Parc West Project (752.5 acre/feet/year), the Parc West Project will use approximately 112.5 acre/feet/year more water than what would be used by almond orchards on the site. If approved, the Project would tie into the City's existing water system and would abandon the agricultural water wells. The Project site was included in the both the UWMP and the City's General Plan land use / water use projections. As indicated previously on pages 3.10-18 and 3.10-19, the site is currently designated for Medium Density Residential (5.0 – 12 dwelling units per acre) on 150 acres and Community Commercial on the remaining 10 acres. Assuming the site could be built out on the lower end of the range (5 to 7 dwelling units/acre), the site could require between 694 - 959 acre/feet/year of water. The proposed Parc West Project water demand is approximately 752.5 acre/feet/year and thus falls within the range of assumed water demand associated with the site. Since the site has been contemplated for urban development by the City of Fresno, the Project will not result in additional use of groundwater that was not already accounted for in the City's infrastructure planning documents (and subsequently analyzed in their respective CEQA documents). As such, there is ***a less than significant impact*** to this impact area. Mitigation Measure HYD – 2 will help ensure that impacts remain less than significant.

Mitigation Measures: HYD-2 (Water Conservation). See attached Project-specific Mitigation Measure Monitoring Checklist and MEIR Mitigation Measure Monitoring Checklist.

HYD – 2: The Project will implement the City of Fresno Water Conservation Program, including implementation of the State's Water Efficient Landscape Ordinance. The California Water Conservation Act mandates a 20 percent reduction in water usage by 2020. The City will meet the reduction target with measures applicable to new and existing development. Reductions beyond the state mandated 20 percent are possible with the use of building and landscaping water conservation features. The reductions from buildings can be achieved with high efficiency toilets, low-flow faucets, and water-efficient appliances such as dishwashers. Water savings from landscaping would be achieved primarily through the use of drought-tolerant landscaping or xeriscaping.

Impact 3.8-3: *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*

i. result in substantial erosion or siltation on- or offsite;

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

iv. impede or redirect flood flows?

Less Than Significant. The Project site is relatively flat and the natural slope is to the southwest. Runoff from precipitation currently percolates into the ground or drains into neighboring areas and eventually into drainage basins. According to the Natural Resources Conservation Service (NRCS) Web Soil Survey website, the soils on the Project site have a ponding frequency class of "none" meaning that ponding is not probable; the chance of ponding is nearly 0 percent in any year. Due to the proposed Project site's level terrain, existing drainage patterns will not be altered in a manner which would result in substantial erosion, siltation or flooding on- or off-site and watercourses (streams/rivers) do not exist within, or near, the Project site.

Development of the site will result in the addition of impervious surfaces in the form of foundations, buildings, roadways, and other paved surfaces. This will result in an increase in storm water runoff from the site, and will increase the potential for contaminated runoff to enter FMFCD drainage basins or for drainage basins to overflow and cause flooding. However, the proposed Project will be designed to FMFCD and City of Fresno standards to prevent drainage

overflow and flooding and the potential for contaminated runoff. The Project site has been anticipated for urban use, primarily as residential development, by both the County of Fresno General Plan and the City of Fresno General Plan. As with all developments, existing policies and standards are required to be complied with, which are assessed during design and review of entitlements by the City and FMFCD to ensure that none of the water quality standards are violated and that waste discharge requirements are adhered to during construction and operation of the Project.

The site is crossed by two Fresno Irrigation District (FID) irrigation canals—the Thornton Ditch, which crosses the northwestern corner of the site, and the Silva Ditch, which enters the site at its northeastern corner, traverses the property in a southerly direction and exits the site at the central western boundary. Although there are two irrigation canals on the Project site, they are fed by a series of larger canal systems, do not connect to and are far removed from navigable waters that would be considered jurisdictional under Section 404 of the Clean Water Act. FID recommends that these canals be piped underground (where currently exposed), with an easement preferably centered over each pipeline so that irrigation water can continue to be delivered to downstream users. These two canals terminate less than one mile downstream of the Project site in agricultural lands. No wetlands occur along or at the terminus of either canal, either on site or downstream of the Project site.

The Project Applicant will be required to submit a grading and drainage plan to FID for approval which will show that the Project will not endanger the structural integrity of underground storm water conveyance pipelines, or result in drainage patterns that will adversely affect the FID or the proposed Project itself.

Mitigation Measure HYD – 3 requires the Project Applicant to prepare a drainage/grading plan subject to review and approval by the City Public Works Department. The Project would not otherwise degrade water quality and therefore the impact is ***less than significant with mitigation***.

Mitigation Measures: HYD-3 (Preparation of Drainage/Grading Plan). See attached Project-specific Mitigation Measure Monitoring Checklist and MEIR Mitigation Measure Monitoring Checklist.

HYD – 3: The Project proponent shall retain a qualified consultant to prepare a drainage / grading plan prior to the issuance of any grading and/or building permit. The design-level analysis shall be prepared to the satisfaction of the City of Fresno and FMFCD.

Impact 3.10-4: *In flood hazard, tsunami or seiche zones, risk release of pollutants due to project inundation?*

Less Than Significant. According to FEMA FIRM map number 06019C1545 H, the Project site is located in Zone X which corresponds to areas outside the 100-year floodplain, areas of 100-year sheet flow flooding where average depths are less than one foot, areas of 100-year stream flooding where the contributing drainage area is less than one square mile, or areas protected from the 100-year flood by levees.

In addition, there are no substantial bodies of water located in the Project area that could result in a tsunami or seiche. Thus, the proposed Project will have a ***less than significant impact*** with regard to placing housing or structures in a 100-year flood, tsunami or seiche zone.

Mitigation Measures: None are required.

Impact 3.10-5: *Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

Less than Significant Impact. The City of Fresno is part of the North Kings Groundwater Sustainability Agency (GSA) which is one of the seven GSA's within the Kings Groundwater Subbasin. The North Kings GSA submitted the Groundwater Sustainability Plan to the CA Department of Water Resources in January 2020 to begin a public comment period ending in April 2020[10]. As the City of Fresno will provide water to the proposed Project (upon approval), and the City will be subject to the requirements of the GSA, the proposed Project does not conflict with any adopted water quality or sustainable groundwater management plan.

Mitigation Measures: None are required.

[10] https://www.northkingsgsa.org/groundwater-sustainability-plan/ (accessed Feb. 2020)

3.13 Noise

This section evaluates the potential for noise and groundborne vibration impacts resulting from implementation of the proposed Project. This includes the potential for the proposed Project to result in impacts associated with a substantial temporary and/or permanent increase in ambient noise levels in the vicinity of the Project site; exposure of people in the vicinity of the Project site to excessive noise levels, groundborne vibration, or groundborne noise levels; and whether this exposure is in excess of standards established in the local general plan or noise ordinance. No IS/NOP comments were received pertaining to noise.

Fundamentals of Sound and Environmental Noise

Sound is technically described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB). The decibel scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound. The pitch of the sound is related to the frequency of the pressure vibration. Since the human ear is not equally sensitive to a given sound level at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) provides this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Noise, on the other hand, is typically defined as unwanted sound. A typical noise environment consists of a base of steady ambient noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These can vary from an occasional aircraft or train passing by to virtually continuous noise from, for example, traffic on a major highway. Table 3.13-1, Representative Environmental Noise Levels, illustrates representative noise levels in the environment.

Table 3.13-1
Representative Environmental Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock Band
Jet Fly-over at 100 feet		
	—100—	
Gas Lawnmower at 3 feet		
	—90—	
		Food Blender at 3 feet
Diesel Truck going 50 mph at 50 feet	—80—	Garbage Disposal at 3 feet
Noisy Urban Area during Daytime		
Gas Lawnmower at 100 feet	—70—	Vacuum Cleaner at 10 feet
Commercial Area		Normal Speech at 3 feet
Heavy Traffic at 300 feet	—60—	
		Large Business Office
Quiet Urban Area during Daytime	—50—	Dishwasher in Next Room
Quiet Urban Area during Nighttime	—40—	Theater, Large Conference Room (background)
Quiet Suburban Area during Nighttime		
	—30—	Library
Quiet Rural Area during Nighttime		Bedroom at Night, Concert Hall (background)
	—20—	
		Broadcast/Recording Studio
	—10—	
Lowest Threshold of Human Hearing	—0—	Lowest Threshold of Human Hearing

Source: California Department of Transportation, Technical Noise Supplement, October 1998.

Several rating scales have been developed to analyze the adverse effect of community noise on people. Since environmental noise fluctuates over time, these scales consider that the effect of noise upon people is largely dependent upon the total acoustical energy content of the noise, as well as the time of day when the noise occurs. Those that are applicable to this analysis are as follows:

- Leq – An Leq, or equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the Leq of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.

- Lmax – The maximum instantaneous noise level experienced during a given period of time.

- Lmin – The minimum instantaneous noise level experienced during a given period of time.

- Ldn – The Day-Night Average Level, is a 24-hour average Leq with a 10 dBA "weighting" added to noise during the hours of 10:00 P.M. to 7:00 A.M. to account for noise sensitivity

in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24 hour Leq would result in a measurement of 66.4 dBA Ldn.

- CNEL – The Community Noise Equivalent Level is a 24-hour average Leq with a 5 dBA "weighting" during the hours of 7:00 P.M. to 10:00 P.M. and a 10 dBA "weighting" added to noise during the hours of 10:00 P.M. to 7:00 A.M. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24 hour Leq would result in a measurement of 66.7 dBA CNEL.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day, night, or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60–70 dBA range, and high above 70 dBA. Noise levels greater than 85 dBA can cause temporary or permanent hearing loss. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet suburban residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate level noise environments are urban residential or semi-commercial areas (typically 55–60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with more noisy urban residential or residential-commercial areas (60–75 dBA) or dense urban or industrial areas (65–80 dBA).

Under controlled conditions, in an acoustics laboratory, the trained (enhanced listening abilities) healthy human ear is able to discern changes in sound levels of 1 dBA, when exposed to steady, single frequency "pure tone" signals in the mid-frequency range. Outside of such controlled conditions, the trained ear can detect changes of 2 dBA in normal environmental noise. It is widely accepted that in the community noise environment the average healthy ear can barely perceive CNEL noise level changes of 3 dBA. CNEL changes from 3 to 5 dBA may be noticed by some individuals who are extremely sensitive to changes in noise. A 5 dBA CNEL increase is readily noticeable, while the human ear perceives a 10 dBA CNEL increase as a doubling of sound.

Noise levels from a particular source generally decline as distance to the receptor increases. Other factors, such as the weather and reflecting or barriers, also help intensify or reduce the noise level at any given location. A commonly used rule of thumb for roadway noise is that for every doubling of distance from the source, the noise level is reduced by about 3 dBA at acoustically "hard" locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically "soft" locations (i.e., the area between the source and receptor is normal earth or has vegetation,

including grass). Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels are also generally reduced by 1 dBA for each 1,000 feet of distance due to air absorption. Noise levels may also be reduced by intervening structures – generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The normal noise attenuation within residential structures with open windows is about 17 dBA, while the noise attenuation with closed windows is about 25 dBA.[1]

Fundamentals of Environmental Groundborne Vibration

Vibration is sound radiated through the ground. Vibration can result from a source (e.g., train operations, motor vehicles, machinery equipment, etc.) causing the adjacent ground to move, thereby, creating vibration waves that propagate through the soil to the foundations of nearby buildings. This effect is referred to as groundborne vibration. The peak particle velocity (PPV) or the root mean square (RMS) velocity is usually used to describe vibration levels. PPV is defined as the maximum instantaneous peak of the vibration level, while RMS is defined as the square root of the average of the squared amplitude of the level. PPV is typically used for evaluating potential building damage, while RMS velocity in decibels (VdB) is typically more suitable for evaluating human response.

The background vibration velocity level in residential areas is usually around 50 VdB. The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

The general human response to different levels of groundborne vibration velocity levels is described in Table 3.13-2, Human Response to Different Levels of Groundborne Vibration.

[1] National Cooperative Highway Research Program Report 117, Highway Noise: A Design Guide for Highway Engineers, 1971.

Table 3.13-2
Human Response to Different Levels of Groundborne Vibration

Vibration Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception for many people.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.
Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.	

Environmental Setting

Project Area

The Project site is within the City limits of Fresno (annexed in 2015) and occupies Assessor's Parcel Numbers 512-02-126 and 512-02-150S. The site has historically been used for agricultural purposes. Surrounding land uses are as follows:

Surrounding Land Use and Zoning

Location	Existing Land Use	Roadway
North	Rural residential (outside City limits)	None existing. Planned for W. Gettysburg Ave.
South	Agricultural (almonds) – site of original Westlake project	None existing. Planned for W. Ashlan Ave.
West	Agricultural (outside City limits)	None existing. Planned for N. Garfield Ave.
East	Central Unified School District Complex (football stadium,	N. Grantland Ave.

Most of the Project site is designated by the City of Fresno General Plan as Medium Density Residential (5.0 – 12 D.U./acre). There is an 10-acre portion of the site at the southeast corner of the lot that is zoned and designated Community Commercial, however, the Applicant is proposing to change this land use from commercial to residential (RS-5) to match the land use designation of the remainder of the 160 acres.

Much of the land surrounding the Project site is in agricultural production or occupied by rural residential homes and ancillary structures. The CUSD Deran Koligian Education Center is

located east of Grantland Avenue and south of Ashlan Avenue proximate to the proposed Project site. Large lot single family homes are located along West Rialto Avenue adjacent to, and north of, the Project site.

Major roads in the Project area include:

> ***Grantland Avenue*** is an existing north-south two-lane divided arterial in the vicinity of the proposed Project. In this area, Grantland Avenue extends south of Parkway Drive through the southern limits of the City of Fresno SOI. The City of Fresno 2035 General Plan Circulation Element designates Grantland Avenue as a two-lane arterial between Parkway Drive and Shaw Avenue, a four-lane collector between Shaw Avenue and Gettysburg Avenue, and a four-lane super arterial between Gettysburg Avenue and Belmont Avenue.
>
> ***Shaw Avenue*** is an existing east-west two-lane undivided arterial in the vicinity of the proposed Project. Shaw Avenue extends through the City of Fresno easterly beyond the City of Clovis and westerly beyond Garfield Avenue in the County of Fresno. The 2035 City of Fresno General Plan Circulation Element designates Shaw Avenue as a two-lane divided arterial west of Grantland Avenue, a four-lane divided arterial between Grantland Avenue and Cornelia Avenue, and a six-lane divided arterial east of Cornelia Avenue.
>
> ***Ashlan Avenue*** is an existing east-west two-lane undivided arterial in the vicinity of the proposed Project. In this area, Ashlan Avenue extends east of Grantland Avenue through the eastern limits of the City of Fresno SOI. The 2035 City of Fresno General Plan Circulation Element designates Ashlan Avenue as a fourlane divided arterial between Grantland Avenue and Fruit Avenue and east of Maroa Avenue and a twolane collector between Fruit Avenue and Maroa Avenue.

There are no airports within the vicinity of the Project and the site is outside any airport land use plan boundaries. The nearest airport to the Project site is the Sierra Sky Park Airport located approximately 3 ¾ miles northeast of the Project site.

Regulatory Setting

Federal Regulations

Noise Standards

There are no federal noise standards that directly regulate environmental noise related to the construction or operation of the proposed Project. With regard to noise exposure and workers, the Office of Safety and Health Administration (OSHA) regulations safeguard the hearing of workers exposed to occupational noise.

Vibration Standards

The Federal Transit Administration (FTA) has adopted vibration standards that are used to evaluate potential building damage impacts related to construction activities. The vibration damage criteria adopted by the FTA are shown in Table 3.13-3, Construction Vibration Damage Criteria.

Table 3.13-3
Construction Vibration Damage Criteria

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12
Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.	

In addition, the FTA has also adopted standards associated with human annoyance for groundborne vibration impacts for the following three land-use categories: (1) Vibration Category 1 – High Sensitivity, (2) Vibration Category 2 – Residential, and (3) Vibration Category 3 – Institutional. The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference.

Under conditions where there are an infrequent number of events per day[2], the FTA has established thresholds of 65 VdB for Category 1 buildings, 80 VdB for Category 2 buildings, and 83 VdB for Category 3 buildings.

Under conditions where there are an occasional number of events per day[3], the FTA has established thresholds of 65 VdB for Category 1 buildings, 75 VdB for Category 2 buildings, and 78 VdB for Category 3 buildings. No thresholds have been adopted or recommended for commercial, office, and industrial uses.

State Regulations

California State Building Code

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room.

Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment

Local Regulations

County of Fresno Environmental Health Services

The County of Fresno abuts the proposed Project area, and as such the Environmental Health Services (EHS) would review the Westlake Development Project Draft EIR to evaluate compliance with County ordinance, *Chapter 8.40 Noise Control.* Compliance under this ordinance excludes construction noise, activities in public parks and playgrounds (except school athletic and school

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[2] The Federal Transit Administration, Transit Noise and Vibration Impact Assessment (May 2006) defines "Infrequent Events" as "fewer than 30 vibration events of the same kind per day." Page 8-3. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf. Accessed July, 2016.

[3] The Federal Transit Administration, Transit Noise and Vibration Impact Assessment (May 2006) defines "Occasional Events" as "between 30 and 70 vibration events of the same source per day." Page 8-3. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf. Accessed July, 2016.

entertainment events), and noises generated from certain commercial or industrial activity. In general exterior daytime noise standards range from 50-70 dBA depending on the cumulative number of minutes in any one-hour time period. The range for interior daytime noise standards is 45-55 dBA.

The County ordinance governs noise impact evaluation for properties not within the City limits but abutting the Project area and for roadways outside the City limits subject to Project-related offsite traffic noise.

City of Fresno General Plan Noise Element and Noise Ordinance

Although the Project site is currently located within Fresno County, if the proposed Project is to be developed it will need to be annexed to the City of Fresno. Therefore, the City of Fresno Noise Element of the General Plan and Municipal Code Sections 10-101 through 10-111 (Noise Ordinance) would apply to the Project. The Noise Element standards apply to noise produced by traffic on public roadways and noise produced by proposed commercial uses and other stationary sources. The City's Noise Ordinance provides guidelines for decibel measurement criteria, monitoring procedures, prohibited noises, violations, exceptions, permits and injunctions.

The City of Fresno 2025 General Plan Noise Element contains a number of policies that apply to noise impacts in conjunction with ultimate build-out of the City. The policies listed below are designed to ensure that noise impacts are minimized as development occurs.

<u>Noise Element</u>

H-1-a. Policy *New noise-sensitive land uses impacted by existing or projected future transportation noise sources shall include mitigation measures so that resulting noise levels do not exceed the standards shown in Table 8 (3.10-4) below:*

Table 3.10-4
Maximum Allowable Noise Exposure
Transportation Noise Sources

Land Use[4]	Outdoor Activity Areas[1]	Interior Spaces	
	Ldn db		
		Ldn	Leq dB[2]
Residential	60[3]	45	---
Transient Lodging	60[3]	45	---
Hospitals, Nursing Homes	60[3]	45	---
Theaters, Auditoriums, Music Halls	---	---	35
Churches, Meeting Halls	60[3]	---	45
Office Buildings	---	---	45
Schools, Libraries, Museums	---	---	45

[1]Where the location of outdoor activity areas is unknown or is not applicable, the exterior noise level standard shall be applied to the property line of the receiving land use.

[2]As determined for a typical worst-case hour during periods of use.

[3]Noise levels up to 65 db Ldn adjacent to the Burlington Northern Santa Fe and Union Pacific mainline tracks may be allowed by the project approving authority when it is determined that it is not possible to achieve a 60 dB Ldn in outdoor activity areas using a practical application of the best-available noise reduction technology, and when all feasible exterior noise reduction measures have been proposed.

[4]The Planning and Development Director, on a case-by-case basis, may designated land uses other than those shown in this table to be noise-sensitive, and may require appropriate noise mitigation measures.

H-1-b. Policy *For purposes of city analyses of noise impacts, and for determining appropriate noise mitigation, a significant increase in ambient noise levels is assumed if the project causes ambient noise levels to exceed the following:*

- *the ambient noise level is less than 60 dB Ldn and the project increases noise levels by 5 dB or more;*

- *the ambient noise level is 60-65 dB Ldn and the project increases noise levels by 3 dB or more; and*
- *the ambient noise level is greater than 65 dB Ldn and the project increases noise levels by 1.5 dB or more.*

H-1-c. Policy *The city shall review new public and private development proposals to determine conformance with the policies of this Noise Element.*

H-1-d. Policy *The city shall require an acoustical analysis in those cases where a project potentially threatens to expose existing or proposed noise-sensitive land uses to excessive noise levels. The presumption of potentially excessive noise levels shall be based on the location of new noise-sensitive uses to known noise sources or staffs professional judgment that a potential for adverse noise impacts exists. Acoustical analyses shall be required early in the review process so that noise mitigation may be included in the project design. For development not subject to environmental review, the requirements for an acoustical analysis shall be implemented prior to the issuance of building permits. The requirements for the content of an acoustical analysis are established by the Planning and Development Department in conjunction with environmental health agencies.*

H-1-e. Policy *The city shall develop and employ procedures to ensure that noise mitigation measures required pursuant to an acoustical analysis are implemented in the development review and building permit processes.*

H-1-f. Policy *The city shall develop and employ procedures to monitor compliance with the policies of the Noise Element after completion of projects where noise mitigation measures have been required.*

H-1-g. Policy *The city shall enforce the State Noise Insulation Standards (California Code of Regulations, Title 24) and Chapter 35 of the Uniform Building Code (UBC) concerning interior noise exposure for multi-family housing, hotels and motels.*

H-1-j. Policy *Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so that resulting noise levels do not exceed the adopted standards at noise-sensitive land uses.*

H-1-k. Policy *New noise-sensitive land uses impacted by stationary noise sources shall include mitigation measures so that resulting noise levels do not exceed the standards show in Table 9 (Table 3.10-5) as follows:*

Table 3.10-5
Maximum Allowable Noise Exposure-Stationary Noise Sources[1]

	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly Equivalent Sound Level (Leq), dB	50	45
Maximum Sound Level (Lmax), dB	70	65

H-1-l. Policy *Noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications that may increase noise levels shall be mitigated so as not to exceed the noise level standards of Table 9 at noise-sensitive land uses.*

H-1-m. Policy *As a guideline, noise barriers (walls, earth berms, or berm/wall combinations) shall not exceed 15 feet in height as measured from the elevation of the nearest building pad. The Planning and Development Director, on a case-by-case basis, may allow noise barrier heights differing from this guideline. However, resulting noise levels must satisfy the maximum allowable noise exposure standards.*

City of Fresno Noise Standards

Table 3.10-6 presents the City of Fresno's maximum allowable noise exposure from transportation sources for community noise adopted by the City of Fresno's General Plan Noise Element. This table provides planners with a tool to gauge the compatibility of new land uses relative to existing and future noise levels.

Table 3.10-6
Maximum Allowable Noise Exposure from Transportation Noise Sources

Land Use[1]	Outdoor Activity Areas (dB Ldn)[2]	Interior Spaces	
		dB Ldn	dB Leq[3]
Residential	60[4]	45	NA
Transient Lodging	60[4]	45	NA
Hospitals, Nursing Homes	60[4]	45	NA
Theaters, Auditoriums, Music Halls	NA	NA	35
Churches, Meeting Halls	60[4]	NA	45
Office Buildings	NA	NA	45
Schools, Libraries, Museums	NA	NA	45

Source: City of Fresno General Plan Noise Element, 2002

NA = Not Applicable

1. The Planning and Development Director, on a case-by-case basis, may designate land uses other than those shown in this table to be noise sensitive, and may require appropriate noise mitigation measures.

2 Where the location of the outdoor activity areas is unknown or is not applicable, the exterior noise levels standard shall be applied to the property line of the receiving land use.

3 As determined for a typical worst-case hour during periods of use.

4 Noise levels up to 65 dBA Ldn adjacent to the Burlington Northern Santa Fe railroad and Union Pacific Railroad mainline tracks may be allowed by the project approving authority when it is determined that it is not possible to achieve 60 dB Ldn in outdoor activity areas using a practical application of the best-available noise reduction technology, and when all feasible exterior noise reduction measures have been proposed.

Based on these noise compatibility guidelines, the City of Fresno has developed significance criteria for Project-related increases in ambient noise levels. The City's incremental thresholds are shown in Table 3.10-7.

Table 3.10-7
City of Fresno Incremental Noise Impact Criteria for Noise-Sensitive Uses

Existing Noise Exposure (dB Ldn)	Project Increase in Ambient Noise Levels (dB Ldn)
< 60	5
60 to 65	3
> 65	1.5

Source: City of Fresno General Plan Noise Element, Policy H-1-b, 2002

Stationary Noise Standards

The City of Fresno noise regulations are provided in Article, 1, Noise Regulations, in Sections 10-101 through 10-111 of the Municipal Code. Pursuant to the City's Municipal Code, noise generated at a property is restricted from exceeding certain levels for extended periods of time. The City applies the Noise Control Ordinance standards (summarized in Table 3.10-4) to non-transportation noise sources. These standards do not gauge the compatibility of developments in the noise environment, but provide restrictions on the amount and duration of noise generated at a property, as measured at the property line of the noise receptor.

The City's Noise Ordinance is designed to protect people from objectionable non-transportation noise sources such as music, machinery, pumps, and air conditioners.

Additionally, Table 3.10-8 shows the stationary noise standards provided in the City's General Plan. As stated in the General Plan, new noise-sensitive land uses impacted by existing stationary sources are required to include mitigation measures so as the resulting noise levels do not exceed the standards shown in Table 3.10-7. Additionally, new proposed stationary noise sources must also be mitigated so as to not exceed these noise standards as measured at existing noise-sensitive land uses.

City of Fresno Municipal Code, Sound Amplifying Equipment

The City of Fresno prohibits the use of loudspeakers or sound-amplifying equipment without first obtaining approval from the City. For commercial and non-commercial use of sound amplifying equipment, operation is restricted to between the hours of 7 AM and 10 PM and prohibited within 300 feet of churches, schools, or hospitals. Furthermore, the City prohibits noise from such equipment from exceeding the ambient noise levels by 15 dBA as measured at the property.

Table 3.10-8
Exterior Noise Standards

District	Time Period	Municipal Code[1,2,3]	General Plan[4,5,6]	
		dBA L_{25}	dBA Leq	dBA Lmax
	10 PM to 7 AM	50	45	65
Residential	7 AM to 7 PM	60	50	70
	7 PM to 10 PM	55	50	70
Commercial	10 PM to 7 AM	60	NA	NA
	7 AM to 10 PM	65	NA	NA
Industrial	Anytime	70	NA	NA

Source: City of Fresno Municipal Code, Chapter 10, Article 1, Noise Regulations, Sections 10-102 and 10-106; Fresno 2002.

1 For the purpose of this ordinance, ambient noise level is the level obtained when the noise level is averaged over a period of fifteen minutes, without inclusion of the offending noise, at the location and time of day at which a comparison with the offending noise is to bemade.

2 Where the ambient noise level is less than that designated in this section, however, the noise level specified herein shall be deemed to be the ambient noise level for that location.

3 Any noise or sound exceeding the ambient noise level at the property line of any person offended thereby, or, if a condominium or apartment house, within any adjoining living unit, by more than five decibels shall be deemed to be prima facie evidence of a violation of

Section 8-305.

4 New noise-sensitive land uses impacted by stationary sources shall included mitigation measures so that resulting levels do not exceed the standards shown in Table 9 of the City of Fresno General Plan (H-1-K Policy).

5 Noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications that may increase noise levels shall be mitigated so as not to exceed the noise level standards of Table 9 in the City of Fresno General Plan at noise sensitive land uses (H-1-L Policy).

6 As determined at outdoor areas. Where the location of outdoor activity areas is unknown or not applicable, the noise exposure standard shall be applied at the property line of the receiving land use. When ambient noise levels exceed or equal the levels in this table, mitigation shall only be required to limit noise to the ambient plus five (5) dB.

City of Fresno Municipal Code, Construction Hours

The City of Fresno exempts noise generated by construction, site preparation, grading, repair, or remodeling work permitted by the City from the stationary noise limits of the Municipal Code (Section 10-102) provided such work occurs between the hours of 7 AM and 10 PM on weekdays and Saturdays.

Thresholds of Significance

In accordance with Appendix G to the State CEQA Guidelines, the project would have a significant impact on noise if it would cause any of the following conditions to occur:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- Generation of excessive groundborne vibration or groundborne noise levels?
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

CEQA does not define what constitutes a substantial increase in noise levels. Some guidance is provided by the 1992 findings of the Federal Interagency Committee on Noise (FICON), which assessed changes in ambient noise levels resulting from aircraft operations. The FICON recommendations are based upon studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. The rationale for the FICON recommendations is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of the DNL (or CNEL). Annoyance is a summary measure of the general adverse reaction of people to noise that results in speech interference, sleep disturbance, or interference with other daily activities.

The City of Fresno's criteria for establishing noise impacts is shown in Table 3.10-6.

<u>Construction Noise and Vibration</u>

There are no state or federal standards that specifically address construction noise or construction vibration. Additionally, the City of Fresno General Plan does not specifically provide vibration guidelines or standards. Some guidance is provided by the Caltrans Transportation and

Construction Vibration Guidance Manual. The Manual provides guidance for determining annoyance potential criteria and damage potential threshold criteria. These criteria are provided below in Tables 3.13-9 and 3.13-10, and are presented in terms of peak particle velocity (PPV) in inches per second (in/sec).

Table 3.13-9
Guideline Vibration Annoyance Potential Criteria

Human Response	***Maximum PPV (in/sec)***	
	Transient Sources	***Continuous/Frequent Intermittent Sources***
Barely Perceptible	0.04	*0.01*
Distinctly Perceptible	0.25	*0.04*
Strongly Perceptible	0.9	*0.1*
Severe	2.0	*0.4*
Source: WVJ Acoustics		

Table 3.13-10
Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	***Maximum PPV (in/sec)***	
	Transient Sources	***Continuous/Frequent Intermittent Sources***
Extremely fragile, historic buildings, ancient monuments	0.12	*0.08*
Fragile buildings	0.2	*0.1*
Historic and some old buildings	0.5	*0.25*
Older residential structures	0.5	*0.3*
New residential structures	1.0	*0.5*

Modern industrial/commercial buildings	2.0	*0.5*
Source: WVJ Acoustics		

Impacts and Mitigation Measures

Impact 3.13-1: *Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Construction Noise Impacts

Less Than Significant. Construction noise could occur at various locations within and near the Project site through the build-out period. The distance from the closest noise-sensitive receiver to the Project site is approximately 100 feet along the northern edge of the Project where there is an existing rural residential neighborhood.

The distinction between short-term construction noise impacts and long-term operational noise impacts is a typical one in both CEQA documents and local noise ordinances, which generally recognize the reality that short-term noise from construction is inevitable and cannot be mitigated beyond a certain level. Thus, local agencies frequently tolerate short-term noise at levels that they would not accept for permanent noise sources. A more severe approach would be impractical and might preclude the kind of construction activities that are to be expected from time to time. Most residents recognize this reality and expect to hear construction activities on occasion.

Table 3.13-11 provides typical construction-related noise levels at distances of 50 feet, 100 feet, and 300 feet. Construction activities would be temporary in nature and would most likely occur only during the daytime hours.

Table 3.13-11
Typical Construction Equipment

Type of Equipment	50 Ft.	100 Ft.	300 Ft.
Backhoe	78	72	62
Concrete Saw	90	84	74
Excavator	81	75	65
Front End Loader	79	73	63
Jackhammer	89	83	73
Paver	77	71	61
Pneumatic Tools	85	79	69
Dozer	82	76	66

Rollers	80	74	64
Scrapers	87	81	71
Portable Generators	80	74	64
Front Loader	86	80	70
Backhoe	86	80	70
Excavator	86	80	70
Grader	86	80	70
Source: FHWA Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek & Newman, 1987			

The City of Fresno exempts noise generated by construction, site preparation, grading, repair, or remodeling work permitted by the City from the stationary noise limits of the Municipal Code (Section 10-102) provided such work occurs between the hours of 7 AM and 10 PM on weekdays and Saturdays.

The Project developer and construction contractor will be required to adhere to the City's Municipal Code, which provides noise guidelines associated with construction. The ordinance limits building construction activities to between the hours of 7:00 AM and 10:00 PM on weekdays and Saturdays. Therefore, impacts from construction noise are ***less than significant.***

Long-Term Operational Noise Impacts

Less Than Significant With Mitigation. Existing noise levels in the Project vicinity are dominated by traffic noise along Grantland Avenue, nearby agricultural activities, distant train noise, school-related activities and aircraft overflights. Other localized noise sources include birds, barking dogs, and activities associated with residential housing (such as use of yard maintenance equipment, etc.).

On-site Stationary Noise

Noise from the proposed Project (excluding noise from vehicles – see vehicle noise discussion herein) will be similar to existing conditions and will generally include noise typical of single family residential neighborhoods including air conditioner units, yard maintenance equipment (e.g. lawn mowers, blowers, etc.), amplified sounds, and other similar equipment. It is not expected that the proposed Project will result in a significant increase in noise to surrounding land uses from on-site stationary sources.

Operational Traffic Noise

Traffic noise depends primarily on the speed of traffic and the percentage of truck traffic. Conversely, traffic volume does not have a major influence on traffic noise levels. The primary source of noise from automobiles is high frequency tire noise, which increases with speed. In addition, trucks and older automobiles produce engine and exhaust noise, and trucks also generate wind noise. There are no truck trips associated with the Project.

Project trip generation is shown in Table 3.17-3 - Project Trip Generation in Section 3.17 – Transportation / Traffic. The Project trip distribution assumptions were developed based on existing travel patterns, the Fresno COG Project (Buildout) Select Zone, the existing roadway network, engineering judgment, data provided by the developer, knowledge of the study area, existing residential and commercial densities, and the City of Fresno 2035 General Plan Circulation Element in the vicinity of the Project. Figure 8 of the Project Traffic Impact Analysis (Appendix D), illustrates the Project-Only Trips to the study intersections under full buildout. Based on this distribution, the majority of Project related trips to access the site will utilize Shaw Avenue, Ashlan Avenue, Grantland Avenue and to a lesser extent, Garfield Avenue.

The City of Fresno has established noise thresholds for sensitive receptors (i.e. schools, hospitals, residential areas, etc.). Based on this information, the following thresholds would apply to permanent increases in noise due to the operational characteristics of development permitted by the City's General Plan:

Existing Noise Exposure (dB Ldn)	**Project Increase in Ambient Noise Levels (dB Ldn)**
< 60	5
60 to 65	3
> 65	1.5

Indoor traffic noise exposure would be expected to comply with the city's 45 dB DNL noise standard for transportation noise sources provided outdoor noise exposure has been effectively mitigated, normal construction methods and materials are employed and air conditioning or mechanical ventilation is provided so that doors and windows may remain closed if desired for noise attenuation purposes.

As described previously in this Draft EIR, the subject site was part of the previously approved Westlake Development Project and was analyzed in the Westlake EIR (State Clearinghouse #2007121033). The Westlake Project analyzed approximately 2,600 residential units, 295,000 sq. ft. of commercial space, and a 55-acre man-made lake on 430 acres. Following certification of the Westlake EIR, the Project Applicant (Granville Homes) put the Project on hold. Since that time, the Applicant has scaled down the Project to include only 844 units on 160 acres.

The Noise Study prepared for the Westlake EIR (2012) included ambient noise level measurements at two locations: one at the northwest corner of the currently proposed Parc West Project, and one at the southeast corner of the former Westlake Project (located along Grantland less than ¼ mile from the southern border of the Parc West Project). That Noise Study showed that ambient noise levels at the noise measurement sites were in the range of 35-68 dBA, with energy average (Leq) values of about 40-48 dBA, during the noise measurement period. DNL values within the Project site are estimated to be in the range of 50-60 dB, depending upon proximity to existing traffic, commercial or institutional noise sources. For purposes of assessing the Parc West Project, it is assumed that ambient noise levels in the Project area are less than 60 dB.

According to the U.S. Department of Transportation, a doubling of sound energy results in a 3 dB(A) increase in sound, which means that a doubling of sound wave energy (e.g., doubling the volume of traffic on a roadway) would result in a barely perceptible change in sound level[4]. Because the Project does not result in a doubling of traffic on the surrounding roadways (See Table 3.17-12 in Section 3.17 – Transportation/Traffic, which shows peak hour Project trips at full buildout compared to existing and projected future traffic trips), it is not anticipated that the Project will result in an increase of 5 dB(A) or greater. The Project, therefore, is not expected to result in an increase in ambient noise levels greater than the thresholds established by the City of Fresno.

[4] U.S. Department of Transportation, Federal Highway Administration, *Highway Noise Fundamentals*, (Springfield, Virginia: U.S. Department of Transportation, Federal Highway Administration, September 1980), p. 81.

However, the City's General Plan has also established traffic noise contours for certain types of roadways that are applicable to the Project. The information shown below is based on buildout of the City's General Plan. For the major roadways impacted by the Project, they are as follows[5]:

Shaw Avenue (4-lane arterial in Project area):	69 dBA CNEL (50 ft. from centerline)
Ashlan Avenue (4-lane arterial in Project area):	69 dBA CNEL (50 ft. from centerline)
Grantland Avenue (4-lane super arterial in Project area):	68.7 dBA CNEL (50 ft. from centerline)

Under cumulative conditions (full buildout of the General Plan), these roadways would generate noise levels that would exceed the City's overall 65 dBA CNEL standard for sensitive land uses. General Plan Policy NS-1-g, requires the implementation of noise reduction performance standards for new noise sensitive uses and requires consideration of the following noise reduction measures:

- Façades with substantial weight and insulation;
- Installation of sound-rated windows for primary sleeping and activity areas;
- Installation of sound-rated doors for all exterior entries at primary sleeping and activity
- areas;
- Greater building setbacks and exterior barriers;
- Acoustic baffling of vents for chimneys, attic and gable ends; and
- Installation of mechanical ventilation systems that provide fresh air under closed window
- conditions.

Many of the noise reduction features provided in Policy NS-1-g are dependent on final project design. In addition, to reduce traffic noise at outdoor living areas, typical noise mitigation would include the construction of a standalone sound wall, which reduces noise levels by approximately 5 to 10 dBA. Mitigation of outdoor noise exposure could be achieved either by increasing building setbacks, by construction of sound walls or by a combination of setbacks and sound walls. Generally, a 6 foot-high sound wall will reduce traffic noise exposure at the first floor elevation by approximately 5 dB and an 8 foot-high wall will reduce traffic noise by approximately 7-8 dB. Outdoor activity areas located above the first floor elevation, such as decks or balconies, will not

[5] Fresno General Plan Draft EIR (2020), page 4.13-19.

be effectively shielded by a sound wall of practical height. Because there are no specific development elevations or full site plans available for the Project site, future development within the Project site will be required to submit an acoustical analysis to demonstrate compliance with City standards either through the use of setbacks or of noise attenuation features. See Mitigation Measures NOI-1 through NOI-3. Therefore, there is a ***less than significant impact with mitigation.***

Mitigation Measures:

NOI-1: Prior to issuance of building permits for development within the Parc West Development Project site, a detailed acoustical study shall be prepared by a certified professional to document potential impacts to onsite noise-sensitive land uses (as determined by the City of Fresno's General Plan, refer to Table 3.10-6). Potential impacts in exceedance of the City of Fresno's standards including: Maximum Allowable Noise Exposure-Stationary Noise Sources, Maximum Allowable Noise Exposure from Transportation Noise Sources, City of Fresno Incremental Noise Impact Criteria for Noise-Sensitive Uses, and Exterior Noise Standards shall require incorporation of mitigation such as increased setbacks, sound walls, equipment enclosures, site design, and enhanced building materials to reduce impacts to levels below the City of Fresno standards. Development that cannot incorporate mitigation to reduce impacts to acceptable City of Fresno standards shall not be approved.

NOI-2: Construction within the Project of two story homes along Grantland Avenue shall be prohibited unless a detailed acoustical analysis, prepared by a certified professional, can document compliance with the city's 45 dB DNL standard at the upper floor elevation.

NOI-3: Prior to issuance of building permits for noise-sensitive land uses adjacent to Grantland Avenue, a sound wall shall be constructed to reduce noise levels by 10 db or as determined necessary by the acoustical study required by Mitigation Measure NOI-1.

Impact 3.13-2: *Generation of excessive groundborne vibration or groundborne noise levels?*

Less Than Significant. The dominant sources of man-made vibration are sonic booms, blasting, pile driving, pavement breaking, demolition, diesel locomotives, and rail-car coupling. None of

these sources are anticipated from the Project site. It is unlikely that vibration from construction activities could be detected at the closest sensitive land uses. Typical vibration levels at distances of 25 feet and 100 feet are summarized by Table 3.13-12.

Table 3.13-12: Typical Vibration Levels During Construction

	PPV (in/sec)	
Equipment	@ 25´	@ 100´
Bulldozer (Large)	0.09	0.011
Bulldozer (Small)	0.003	0.0004
Loaded Truck	0.08	0.01
Jackhammer	0.04	0.005
Vibratory Roller	0.2	.03
Loaded Trucks	0.08	.01
Source: WJV Acoustics. July 2016.		

After full Project build out, it is not expected that ongoing operational activities will result in any vibration impacts at nearby sensitive uses. Any impacts would be less than significant.

Mitigation Measures: None are required.

Impact 3.13-3: *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

Less Than Significant Impact. There are no airports within the vicinity of the Project and the site is outside any airport land use plan boundaries. The nearest airport to the Project site is the Sierra Sky Park Airport located approximately 3 ¾ miles northeast of the Project site. Therefore, there is a ***less than significant impact.***

Mitigation Measures: None are required.

3.15 Public Services

This section of the DEIR identifies potential impacts associated with the City's police/fire protection services, school facilities, and other public facilities. No IS/NOP comment letters were received pertaining to this topic.

Environmental Setting

Fire Services

The City of Fresno Fire Department (Fire Department) provides fire suppression, fire prevention, hazardous material mitigation, rescue, and emergency medical services to 115 square miles through five divisions. The five divisions that comprise the City's Fire Department are the Emergency Operations Division; the Prevention and Support Services Division; the Training, Emergency Medical Services, and Safety Division; the Personnel and Investigations Division; and the Administration and Fiscal Services Division. In 2007, the Fire Department merged operational services with the Fig Garden Fire Protection District (FGFPD). As of July 2019, the Fire Department no longer provides contractual fire protection for the North Central Fire Protection District (NCFPD). However, there are new automatic aid contracts in place for the NCFPD areas within the Fresno's sphere of influence, and mutual aid contracts for the areas outside Fresno's sphere of influence.

The 2020 Fire Department staffing consists of 302 sworn firefighting personnel, 19 sworn non-safety personnel, and 25 civilian positions. Daily staffing for the Fire Department and FGFPD service area consists of a minimum of 80 on-duty firefighters. Other services provided by the Fire Department include hazardous material services, swift water rescue, and heavy rescue apparatus.

The Fire Department aims to provide response to the scene of an emergency within four minutes from the time the station receives notification. In 2019, depending on the specific service area, the Fire Department was able to respond to structure fires within four minutes 73 percent of the time, and to calls for medical aid within four minutes 65 percent of the time. Given the population of the served area in 2019 (532,000) and the number of sworn fire-fighting personnel, the Fire Department has a staffing level of 0.57 firefighters per 1,000 persons.[1]

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[1] Fresno General Plan Draft EIR (2020), page 4.15-2. Note: The information from the General Plan EIR was updated based on communication from City Fire Battalion Chief Brad Driscoll in June 2020.

According to Fire Department, the proposed Project would be served by the current Fire Station 18, which is located at 5938 N. La Ventana Avenue, Fresno, approximately one mile north of the Project site.

Police Services

The City of Fresno Police Department (Police Department) provides a full range of police services, including: uniformed patrol response to calls for service, crime prevention, tactical crime enforcement (such as gang/violent crime suppression), as well as traffic enforcement/accident prevention. Other services and special units include the Explosive Ordinance Disposal Unit (EOD), Internal Affairs, the K9 Unit, horse-mounted Mounted Patrol, Skywatch, Specialized Weapons and Tactics (SWAT), and the Records Bureau. The Department consists of four divisions: The Support Division, the Investigations Division, the Patrol Division, and the Administration Division. The Police Department has a target staffing ratio of 1.5 unrestricted officers per 1,000 residents. Given the 2018 staffing level of 825 sworn officers and the Planning Area population of 545,000, the staffing ratio is currently 1.5 officers per 1,000 residents. However, of the 825 sworn officers, 64 are restricted. As a result, the staffing ration is currently 1.4 unrestricted officers per 1,000 residents, and the Police Department's Standard is currently not being met.

The Police Department Patrol Division is divided into five policing districts. The Southwest Policing District is located south of McKinley Avenue and West of East Avenue and SR 99. The Northwest Policing District is located north of McKinley Avenue to the San Joaquin River to and west of Blackstone Avenue to the western city limits. The Southeast Policing District is located south of Ashlan Avenue (east of Clovis Avenue), south of McKinley Avenue between East Avenue and Clovis Avenue, and east of SR 99 south of Church Avenue to the southern city limits. The Northeast Policing District is located north of McKinley Avenue to the San Joaquin River and east of Blackstone Avenue to the city of Clovis. The Central Policing District encompasses the area south of Ashlan to Belmont and from SR99 to First Street.[2]

Protection services would be provided to the Project site from the existing Northwest Policing District, which is approximately four and a half miles (driving distance) from the Project site at 3074 West Shaw Avenue, Fresno.

[2] Fresno General Plan Draft EIR (2020), page 4.15-5.

Schools

Central Unified School District (Central USD) serves the northwestern and west area (i.e., west of SR 99) as well as a large rural area west of the City. Central USD currently serves 16,286 students at 21 schools, and has experienced significant growth necessitating the expansion of facilities over the past decade.[3]

Parks

As identified in the City's Parks Master Plan, the City of Fresno owns and operates a park system that includes more than 80 public parks, trails, regional parks, neighborhood parks, educational facilities, community pools, splash parks, and dual-use ponding basins. Many of the public parks include additional amenities. School facilities supplement the City's park system by adding acreage and facilities that are available for recreational use through Joint-Use agreements. Inspiration Park is the closest neighborhood park to the project site and is located approximately 2 miles east of the project site. The closest regional park is Woodward Park, which is located 12.5 miles northeast of the project site.

Libraries

Libraries in the Planning Area are provided by the Fresno County Public Library System. This library system consists of thirty nine libraries and one Community Bookmobile throughout Fresno County.

Regulatory Setting

State Regulations

California Occupational Safety and Health Administration

In accordance with California Code of Regulations Title 8 Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Equipment," the California Occupational Safety and Health Administration (Cal- OSHA) has established minimum standards for fire suppression and emergency medical services (EMS). The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance and use of all firefighting and emergency medical equipment.

[3] Fresno General Plan Draft EIR (2020), page 4.15-7.

City Emergency Response/Evacuation Plans

The State of California passed legislation authorizing the Office of Emergency Services (OES) to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

California Fire Code

The California Fire Code (CFC) contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The CFC also contains specialized technical regulations related to fire and life safety.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which includes regulations for building standards, fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, high-rise buildings, childcare facility standards, and fire suppression training.

Senate Bill 50

Senate Bill (SB) 50 (funded by Proposition 1A, approved in 1998) limits the power of cities and counties to require mitigation of school facilities impacts as a condition of approving new development and provides instead for a standardized developer fee. SB 50 generally provides for a 50/50 State and local school facilities funding match. SB 50 also provides for three levels of statutory impact fees. The application level depends on whether State funding is available, whether the school district is eligible for State funding, and whether the school district meets certain additional criteria involving bonding capacity, year-round school, and the percentage of moveable classrooms in use.

Local

City of Fresno General Plan

The most applicable City of Fresno General Plan establishes the following applicable goals, objectives, and policies with regard to public services:

Objective E24 — *Provide the level of law enforcement and crime prevention services necessary to maintain a safe, secure, and stable urban living environment through a police department that is dedicated to providing professional, ethical, efficient and innovative service with integrity, consistency and pride.*

Policy E-24-b — *Facilitate Police Department participation in the implementation of general plan policies, including citizen participation efforts, the application of crime prevention design measures to reduce the exposure of neighborhoods to nonresidents and to promote community surveillance of common areas.*

- *Facilitate police department communication with citizen advisory committees.*
- *Refer all land use and development proposals to the Police Department for review and comment.*
- *Include recommendations for crime prevention design and operational measures as conditions of project approval.*

Policy E-24-c. — *Continue to identify and apply appropriate safety design and operational measures as conditions of development entitlement approval including but not limited to access control measures, lighting and visibility of access points and common areas, functional and secure on-site recreational and open space improvements within residential developments, and utilization of private "certified" security services.*

Policy E-24-e — *Maximize coordination between the Police Department and the Sheriffs Department to address crime problems in neighborhoods divided by the city's incorporated boundary and continue to explore opportunities for combining and consolidating services when it provides a means to improve the level of law enforcement provided to the community.*

Policy E-24-f — *Identify and pursue measures and methods to improve law enforcement services.*

- *Implement a process which provides for Police Department review and approval of major events including concerts, sports contests, community*

celebrations, exhibitions and other events generating large attendances which will ensure that adequate event staffing is provided to maintain crowd control, traffic safety and to meet law enforcement needs on and off-site.

- *Establish at least one Problem Oriented Policing (POP)/TAC office in each policing area.*
- *Consider utilization of alternative means of patrol and apprehension such as air support (helicopter or other aircraft), foot patrol or bicycle and horse mounted patrol.*
- *Maintain a long-range law enforcement budget planning program to identify revenue and expenditure trends and establish funding mechanisms (including but not limited to the consideration of assessment districts) to address revenue deficiencies.*

Objective E25 — *Ensure that the Fire Department's staffing and equipment resources are sufficient to implement all requests for fire and emergency service from the citizens of Fresno.*

Policy E-25-b — *Pursue long-range transfer of fire protection service agreements with adjacent fire districts that, in concert with existing instant aid agreements, will lead to the eventual unification of fire protection services in the metropolitan area of Fresno.*

Policy E-25-c — *Continually evaluate the Fire Department's ability to provide staffing and equipment resources to effectively prevent and mitigate emergencies in existing and new high-rise buildings (defined by Health and Safety Code Section 13210 (b) as every building of any type of construction or occupancy having floors used for human occupancy located more than 75 feet above the lowest floor level having building access).*

Policy E-26-a — *Use adopted general and specific plans, the city's GIS database, and the fire station location program to achieve optimum siting of future fire stations. For those station sites identified by the 2025 General Plan Land Use and Circulation Map (Exhibit 4) but not yet acquired by the city, the underlying alternative land uses shown on Table 5 shall be applied.*

Policy E-26-b — *Provide for an average response time of not more than five minutes for all emergency requests for service within the metropolitan area.*

Objective E27 — *Enhance the level of fire protection to meet the increasing demand for services from an increasing population. Achieve a better fire insurance rating by augmenting human and equipment resources.*

Policy E-27-c *Continue Fire Department review of all development proposals in order to ensure the inclusion of adequate on-site and off-site fire protection provisions.*

Policy E-27-d *Adopt and enforce construction and fire codes that restrict the level of risk to life and property from fire, commensurate with the fire suppression capabilities available to the city.*

Policy E-27-e *Continue to ensure that adequate water supplies and hydrants are available for fire suppression within all existing urban areas as well as newly developing areas.*

Policy E-27-f *Investigate and implement methods to generate fees to off-set the ongoing personnel and maintenance costs of providing fire protection.*

Policy E-28-c *The implementation of strategies by school districts to provide and efficiently utilize facilities is to be considered an important factor by the City of Fresno when contributing its resources or utilizing its legislative authority to require school fees. The city cannot impose any school impact fee (other than those mandated by state law), unless the school districts clearly demonstrate an efficient utilization of facilities including, but not limited to, the following considerations:*

- *Construction of new or expanded permanent school site facilities;*
- *Interim measures such as year-round schedules; and*
- *Use of portable classroom structures, transporting students to campuses with available student capacity and double or evening sessions.*

Policy E-28-d *The acquisition of school sites and construction of school facilities that are equal to, or greater than, the state standards for school enrollment and school site size by all school districts serving the metropolitan area is a high priority of the City of Fresno.*

Policy E-28-e *Support measures to acquire planned school sites and construct school facilities, including the assessment of additional school fees on new development, consistent with applicable state and federal laws and the following:*

- *Development fees are determined necessary to ensure that new development contributes its equitable share of the full cost of constructing new schools;*
- *These development fees are uniformly applied within a school district's boundaries; and*

- *All reasonable and diligent efforts have been made to utilize other potentially available sources of funds.*

Policy E-29-a *Schools should be located and designed to facilitate safe and convenient access to circulation systems including pedestrian and bicycle routes whenever possible; maintain compatibility with surrounding land uses; contribute to a positive neighborhood identity; and, support the over-all community design objectives of the general plan, community plan or applicable specific plan.*

- *Work closely with representatives of public and private schools during the preparation and amendment of plans (particularly land use, circulation and public facilities elements), and the processing of development proposals to ensure that plan policies are well-conceived and effectively implemented.*
- *Require school districts to provide necessary street improvements, pedestrian facilities, public facilities and public services at each new school site.*
- *Continue to designate appropriate school sites on the general plan land use map (as well as applicable community and specific plans) compatible with the locational criteria of each school district.*
- *When school districts propose a new school site inconsistent with an adopted plan, or in zone districts where schools are not permitted, the city shall require a plan amendment and rezone application for the site. Pursuant to state law, districts shall also obtain the appropriate special permit.*

Policy E-29-b *Pursue the cooperative development and utilization of school sites with adjacent neighborhood parks for both school activities and non-school related recreational activities.*

Policy E-29-c *Encourage school districts to request the designation of needed new school sites on the appropriate plan land use map, at the earliest time possible, in order to facilitate planning for compatible land uses and better ensure that future school sites can be accommodated. For those public school sites designated by the 2025 General Plan Land Use and Circulation Map (Exhibit 4) not yet acquired by the appropriate district, the alternative land uses shown on Table 3 shall be applied.*

- *Alternative sites for new public school facilities within the Fresno Unified School District are identified by the Existing and Planned Public School Sites Map (Appendix F). Selection and acquisition of an alternative school site as depicted in Appendix F is deemed to be consistent with the land use provisions of the general plan.*
- *The City shall consult with the affected school districts to assure that adequate school sites are identified and planned for in preparing the*

appropriate community or specific plans for the North and Southeast Growth Areas.

Policy F-1-f *The City of Fresno will continue to pursue implementation of an open space standard of 3.0 acres of public park land for every 1,000 persons residing in the city's planning area and will ensure the development of sufficient park land in areas designated for higher density. This park acreage standard includes the following components:*

Neighborhood Parks	*0.75 acres/1,000*
Community Parks	*0.25 acres/1,000*
Regional Parks	*2.00 acres/1,000*
Total	*3.00 acres/1,000*

Policy F-1-g *The City will achieve its park space acreage standards by using the following matrix for allocating park space when land use plans are formulated:*

Park Type	*Size Range (Acreage)*	*Population Served*	*Service Area Radius*
School ground/playfield	*1 - 2.5*	*3,000 – 5,000*	*¼ to ½ mile*
Neighborhood	*39,578*	*10,000 – 15,000*	*½ to 1 mile*
Community	*15 – 20*	*50,000 – 80,000*	*2 to 4 miles*
Regional	*100+*	*100,000*	*30 minute*

Policy F-1-h *When land use plans are formulated and analyzed, recreational open space acreage will be inventoried separately from open space devoted to agricultural and aesthetic (e.g., landscape buffering) purposes.*

Policy F-2-a *Utilize the following priorities and guidelines in acquiring and developing parks and recreation facilities. These priorities and guidelines are intended to be used in the preparation of the city's annual capital improvement program. Scheduling*

of park projects may be influenced by changing financial conditions and limitations of particular funding sources. The priority list will be reevaluated at least every three years. Priorities may also be reorganized in consideration of community needs and the long-range financial ability of the city.

- *Acquire and develop neighborhood park space in existing developed neighborhoods that are deficient of such space.*
- *Complete recreation facilities in existing neighborhoods.*
- *Improve existing neighborhood parks throughout the urban area.*
- *Acquisition and development of neighborhood parks in new growth areas shall continue to be funded by development fees, such as Urban Growth Management (UGM) program fees. When 95 percent of the target funding has been collected in a UGM park service area, all designated parks in that service area shall be built within two years, unless precluded by development restrictions.*
- *Recognize community parks as a special need in areas that lack these facilities and explore all potential sources of revenue (including the addition of community park funding to the Urban Growth Management program) to secure appropriate sites and develop these recreational facilities.*
- *Pursue the development of regional parks (combining both passive and active recreation uses) in southwest Fresno.*
- *Cooperate with Fresno Metropolitan Flood Control District and Fresno County to develop a regional park to serve the southeastern portion of the city.*
- *Develop new special purpose recreation facilities as needed.*

City of Fresno West Area Community Plan

Objective W-2 *Provide comprehensive mechanisms for funding and timely construction of needed public facilities including, but not limited to, streets, sidewalks, drainage facilities (including curbs and gutters), sewer and water utilities, schools, fire stations, law enforcement substations, and parks.*

Policy W-2-a *The design of public services shall be based on planned development intensity. Appropriate sizing criteria shall be determined for public facilities, based on population and land use designations with sufficient additional reserve capacity*

to provide a reasonable margin of safety for potential variations in population growth and intensity of use.

Policy W-2-b *Public facilities shall be sited for greatest efficiency and economy. For instance, the geographic size of the West Area and the population of this area at buildout will require at least two police department substations to provide adequate response capability. Law enforcement substations (Police Department dressing stations) should be co-located with fire stations, parks, or other public facilities, as may be appropriate.*

City of Fresno Municipal Code

SEC. 12-4.501. - PURPOSE.

Pursuant to the policies, procedures, and requirements made applicable to the management of growth within the Urban Growth Management Area, established herein by reference to that document entitled "Urban Growth Management Process," dated December 5, 1975, adopted and modified from time to time by Council resolution, the purpose of this article is to achieve the orderly use and development of land within such Area by providing a process under the Subdivision Ordinance Article 10, Chapter 12, or this Zoning Ordinance for the construction or modification of buildings and structures in such Area or the change of occupancy of such buildings or structures.

An integral part of Urban Growth Management is a process referred to herein as the Urban Growth Management Process. The Urban Growth Management Process is intended neither to prevent any development or growth nor to permit free or disorganized development or growth in the Urban Growth Management Area. Such process is instead intended to identify the demands on municipal facilities, improvements, or services created by any proposed residential, commercial, industrial, or other type of development and to provide the means for satisfying such demands; to identify any deleterious effects of any such development and protect the city and its residents against such effects by minimizing the costs of municipal facilities, improvements, and services; and to maintain a high quality of such facilities, improvements, and services. (Added Ord. 76-6, § 1, eff. 2-22-76; Am. Ord. 98-54, § 2, 8-27-98).

Central Unified School District

Funding for schools and impacts for school facilities impacts is preempted by State law (Proposition 1A/SB 50, 1998, Government Code Section 65996) which governs the amount of

fees that can be levied against new development. These fees are used to construct new schools. Payment of fees authorized by the statute is deemed "full and complete mitigation."

Methodology

The analysis considered potential impacts to public services based on full buildout of the site as proposed. Various databases, planning documents, and maps were reviewed to assist in the environmental evaluation. Specific references are noted in the text.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item.

- Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

  Fire protection?

  Police protection?

  Schools?

  Parks?

  Other public facilities?

Impacts and Mitigation Measures

Impact 3.4-1: *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*

Fire protection?

Police protection?

Schools?

Parks?

Other public facilities?

Less Than Significant With Mitigation. The Project consists of construction and operation of up to 844 housing development on 160 acres in an area characterized by agricultural production or occupied by rural residential homes and ancillary structures.

As with other areas of the City, the Project will require fire and police protection services. The Project will also increase student enrollment in the Central Unified School District and will potentially increase the use of public parks. These topics are addressed individually below.

Police Protection: Protection services would be provided to the Project site from the existing Northwest Policing District, which is approximately four and a half miles (driving distance) from the Project site at 3074 West Shaw Avenue, Fresno. The Fresno Police Department provides a full range of police services including uniformed patrol response to calls for service, crime prevention, tactical crime and enforcement (including gang and violent crime suppression), and traffic enforcement/accident prevention. The Project site is located in an area currently served by the Police Department; the Department would not need to expand its existing service area or construct a new facility to serve the Project site. However, according to the City's stated goal of 1.5 police personnel per 1,000 people, the Project would require the equivalent of 3.89 police personnel. This is based on median household size according to the City's Housing Element, which is 3.07 persons per unit. Using this ratio, the Project could accommodate approximately 2,591 people (844 units X 3.07 per unit). Based on this, the Project will be subject to development impact fees as determined by the City. See Public Facilities Mitigation Measures herein.

Fire Protection: The City of Fresno Fire Department (Fire Department) offers a full range of services including fire prevention, suppression, emergency medical care, hazardous materials, urban search, and rescue response, as well as emergency preparedness planning and public education coordination within the Fresno City limit, in addition to having mutual aid agreements with the Fresno County Fire Protection District, and the City of Clovis Fire Departments.

The City of Fresno Fire Department operates its facilities under the guidance set by the National Fire Protection Association in NFPA 1710, the Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operation to the Public by Career Fire Departments. NFPA 1710 sets standards for turnout time, travel time, and total response time for fire and emergency medical incidents, as well as other

standards for operation and fire service. The Fire Department has established the objectives set forth in NFPA 1710 as department objectives to ensure the public health, safety, and welfare.

According to Fire Department, the proposed Project would be served by the current Fire Station 16, which is located at 2510 N. Polk Avenue, Fresno, approximately three miles southeast of the Project site.

The Fresno General Plan contains the following objectives and policies:

- E-25 Objective: Ensure that fire protection, emergency medical and all emergency services are provided in an adequate, efficient and cost-effective manner.
- E-26 Objective: Ensure that the Fire Department's staffing and equipment resources are sufficient to implement all requests for fire and emergency services from the citizens of Fresno.
- E-16-a. Policy: Use adopted general and specific plans, the city's GIS database, and the fire station location program to achieve optimum siting of future stations. For those station sites identified by the 2025 General Land Use and Circulation Map but not yet acquired by the city, the underlying alternative land uses shown on Table 5 shall be applied. The siting of any additional new station locations to serve future development such as the North and Southeast Growth Areas shall occur through the applicable community or specific plan adoption/amendment process.

The proposed Project, as a condition of approval, will be required to comply with provisions set forth by the Fire Department. Additionally, the Project would be required to comply with all applicable fire and building safety codes (California Building Code and Uniform Fire Code) to ensure fire safety elements are incorporated into final Project design, including the providing minimum turning radii for fire equipment. Proposed interior streets will be required to provide appropriate widths and turning radii to safely accommodate emergency response and the transport of emergency/public safety vehicles. The Project will also be designed to meet Fire Department requirements regarding water pressure flow (See Section 3.10 for information pertaining to water pressure requirements), water storage requirements, hydrant spacing, infrastructure sizing, and emergency access. As a result, appropriate fire safety considerations will be included as part of the final design of the Project. In addition, the Project will be subject to development impact fees as determined by the City. See Public Facilities Mitigation Measures herein.

Schools: Educational services for the proposed Project will be provided by the Central Unified School District (CUSD). Schools that serve the Project area include:

- Central High School
- Glacier Point Middle School
- Harvest Elementary School
- John Steinbeck Elementary School
- Roosevelt Elementary School

Funding for schools and school facilities impacts is outlined in Education Code Section 17620 and Government Code Section 65995 et. seq., which governs the amount of fees that can be levied against new development. These fees are used to construct new or expanded schools facilities. Payment of fees authorized by the statute is deemed "full and complete mitigation."

The proposed Project will be required to pay impact fees from new development based on the Developer Fee rates that are in place at the time payment is due. The payment amount is determined by the School District and the State Allocation Board (SAB) who sets the maximum per-square-foot Level 1 school impact fees every two (even) years at its January meeting. Payment of the applicable impact fees by the Project applicant would fund capital and labor costs associated with providing school services to the Project. The State Allocation Board - Office of Public School Construction provides some general guidelines that show an average of 0.7 students per household for a Unified School District in California[4]. For this project involving 844 housing units, that equates to approximately 590 students spread out through elementary, middle and high schools. It is not anticipated that this project would require construction of a new school. School impact fees will be determined by the Central Unified School District who will take into account current and projected enrollment, as well as potential impacts to facilities when determining the fees imposed on the project developer.

Parks: Policy F-1-f of the City's General Plan states that the City of Fresno will continue to pursue implementation of an open space standard of 3.0 acres of public park land for every 1,000 persons residing in the City's Planning Area. The proposed project could have a total population of 2,591 persons at build-out (based on the City's Housing Element estimate of 3.07 persons per household estimate, multiplied by 844 units). This would equate to a need for approximately 7.78 acres of parkland based on the City's standard. Per policy F-2-a, the proposed project will construct parkland and/or pay development impact fees for the

[4] https://www.dgsapps.dgs.ca.gov/OPSC/ab1014/sab50-01instructions.pdf (accessed June 2020).

acquisition and development of parks and recreation facilities to meet the project's needs. The proposed project would create a 1.819 acre park as well as additional land for connection to the City's trail system in the area. The acreage associated with the trail will also count toward the required 7.78 acres of parkland.

The City has established Park Facilities Fees. In order to implement the goals and objectives of the City's general plan, and to mitigate the impacts caused by future development in the City, park facilities must be constructed. The City Council has determined that a Park Facilities Fee is needed in order to finance these public facilities and to pay for each development's fair share of the construction and acquisition costs.

To reduce impacts to a less than significant level, Mitigation Measure REC-1 (See Section XVI – Recreation in the Initial Study) requires the Project Applicant to create onsite (or participate in the creation of offsite) equivalent of 3 acres of park space per 1,000 persons, totaling approximately 7.78 acres. This acreage will include the lands associated with the proposed trail on site.

Other Public Facilities: Development of the Project will increase the demand for other public services, such as libraries. However, the relatively small increase in demand will not in and of itself require construction of additional facilities. As such, implementation of MEIR mitigation measures (PS-1 through PS-5) and General Plan Objectives and Policies, as identified above would ensure adequate public services can be provided.

The City has determined that it can accommodate the Project with existing facilities and personnel. The Project Applicant will be required to pay development impact fees for fire protection, police protection, schools, parks or other public facilities as determined by the City to receive such services (Mitigation Measure PUB-1). Therefore, there is a ***less than significant impact with mitigation.***

Mitigation Measures: PUB-1 (Payment of public service impact fees). See attached MEIR and Project Specific Mitigation Measure Monitoring Checklist.

PUB-1: The Project Applicant shall pay development impact fees for police, fire, schools, recreation and other public services as determined by the City of Fresno.

3.17 Transportation/Traffic

This section of the DEIR identifies potential impacts of the proposed Project pertaining to transportation and traffic in and around the Project vicinity. No IS/NOP comment letters were received pertaining to this topic. The information and analysis presented in this Section are based on the Traffic Impact Study prepared for the Project which is included as Appendix D.

Environmental Setting

The Project site is located at the western edge of the City of Fresno. Most of the proposed site is designated by the City of Fresno General Plan as Medium Density Residential (5.0 – 12 D.U./acre). There is a 10-acre portion of the site at the southeast corner of the lot that is zoned and designated Community Commercial, however, the Applicant is proposing to change this land use from commercial to residential (RS-5) to match the land use designation of the remainder of the 160 acres.

Much of the land surrounding the Project site is in agricultural production or occupied by rural residential homes and ancillary structures. The CUSD Deran Koligian Education Center is located east of Grantland Avenue and south of Ashlan Avenue proximate to the proposed Project site. Large lot single family homes are located along West Rialto Avenue adjacent to, and north of, the Project site.

Major roads in the Project area include:

> ***Herndon Avenue*** is an existing east-west predominantly four-lane divided expressway in the vicinity of the proposed Project. Herndon Avenue extends through the City of Fresno westerly beyond its intersection with State Route 99 and easterly beyond the City of Clovis. The City of Fresno 2035 General Plan Circulation Element designates Herndon Avenue as a six-lane divided expressway between Golden State Boulevard and Willow Avenue. Herndon Avenue is continuous for just over 20 miles and is the most northerly, continuous east-west route on the Fresno County side of the San Joaquin River. The City of Fresno 2035 General Plan Circulation Element acknowledged that Herndon Avenue would exceed LOS D at various locations as a six-lane facility. Herndon Avenue was ultimately established at LOS E or F as a six lane facility within the City of Fresno between the segments of State Route 99 and Golden State Boulevard, Polk Avenue and Milburn Avenue, West Avenue and Palm Avenue, and First Street and Millbrook Avenue.

Parkway Drive is an existing two-lane undivided roadway in the vicinity of the proposed Project. In this area, Parkway Drive is a collector north of Herndon Avenue and a super arterial between Herndon Avenue and Grantland Avenue. The City of Fresno 2035 General Plan Circulation Element designates Parkway Drive as a four-lane super arterial between Herndon Avenue and Grantland Avenue.

Grantland Avenue is an existing north-south two-lane divided arterial in the vicinity of the proposed Project. In this area, Grantland Avenue extends south of Parkway Drive through the southern limits of the City of Fresno SOI. The City of Fresno 2035 General Plan Circulation Element designates Grantland Avenue as a two-lane arterial between Parkway Drive and Shaw Avenue, a four-lane collector between Shaw Avenue and Gettysburg Avenue, and a four-lane super arterial between Gettysburg Avenue and Belmont Avenue.

Polk Avenue is an existing north-south two- to four-lane divided arterial in the vicinity of the proposed Project. In this area, Polk Avenue extends south of Parkway Drive to Olive Avenue. The 2035 City of Fresno General Plan designates Polk Avene as a four-lane divided arterial south of Shaw Avenue.

Shaw Avenue is an existing east-west two-lane undivided arterial in the vicinity of the proposed Project. Shaw Avenue extends through the City of Fresno easterly beyond the City of Clovis and westerly beyond Garfield Avenue in the County of Fresno. The 2035 City of Fresno General Plan Circulation Element designates Shaw Avenue as a two-lane divided arterial west of Grantland Avenue, a four-lane divided arterial between Grantland Avenue and Cornelia Avenue, and a six-lane divided arterial east of Cornelia Avenue. Furthermore, the 2035 City of Fresno General Plan Circulation Element acknowledged that Shaw Avenue would exceed LOS D as a four-lane facility between State Route 99 and Jennifer Avenue. However, City Council made the appropriate findings to designate LOS F as the criteria of significance for Shaw Avenue as a four-lane facility between State Route 99 and Jennifer Avenue. Additionally, the 2035 City of Fresno General Plan Circulation Element acknowledged that Shaw Avenue would exceed LOS D as a six lane facility between Woodrow Avenue and Chestnut Avenue. However, City Council made appropriate findings to designate LOS E as the criteria of significance for Shaw Avenue as a six-lane facility between Woodrow Avenue and Chestnut Avenue.

Ashlan Avenue is an existing east-west two-lane undivided arterial in the vicinity of the proposed Project. In this area, Ashlan Avenue extends east of Grantland Avenue

through the eastern limits of the City of Fresno SOI. The 2035 City of Fresno General Plan Circulation Element designates Ashlan Avenue as a fourlane divided arterial between Grantland Avenue and Fruit Avenue and east of Maroa Avenue and a twolane collector between Fruit Avenue and Maroa Avenue. Furthermore, the 2035 City of Fresno General Plan Circulation Element acknowledged that Ashlan Avenue would exceed LOS D as a four-lane facility between Milburn Avenue and Blythe Avenue. However, City Council made the appropriate findings to designate LOS E as the criteria of significance for Ashlan Avenue as a four-lane facility between Milburn Avenue and Blythe Avenue. Additionally, the 2035 City of Fresno General Plan Circulation Element acknowledged that Ashlan Avenue would exceed LOS D as a four-lane facility between State Route 99 and Marty Avenue. However, City Council made appropriate findings to designate LOS F as the criteria of significance for Ashlan Avenue as a four-lane facility between State Route 99 and Marty Avenue.

State Route 99 is an existing four- to six-lane freeway near the vicinity of the proposed Project. State Route 99 traverses the City of Fresno in a northwest-southeast direction and serves as the principal connection to various metropolitan areas within the Central San Joaquin Valley.

Regulatory Setting

Federal

Federal Highway Administration. The Federal Highway Administration (FHWA) is a major agency of the United States Department of Transportation. In partnership with State and local agencies, the FHWA carries out federal highway programs to meet the nation's transportation needs. The FHWA administers and oversees federal highway programs to ensure that federal funds are used efficiently.

Americans with Disabilities Act of 1990. Titles I, II, III, IV, and V of the ADA have been codified in Title 42 of the United States Code, beginning at Section 12101. Title III prohibits discrimination on the basis of disability in "places of public accommodation" (businesses and nonprofit agencies that serve the public) and "commercial facilities" (other businesses). The regulation includes Standards for Accessible Design, which establish minimum standards for ensuring accessibility when designing and constructing a new facility or altering an existing facility.

Federal Transit Administration. The Federal Transit Administration (FTA) is an authority that provides financial and technical assistance to local public transit systems, including buses,

subways, light rail, commuter rail, trolleys, and ferries. The FTA is funded by Title 49 of the United States Code, which states the FTA's interest in fostering the development and revitalization of public transportation.

State

Assembly Bill 32 (Global Warming Act of 2006) and Senate Bill 375. Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (Act), requires California to reduce its greenhouse gas (GHG) emissions to levels presented in the year 1990 by 2020. In response, the California Air Resources Board (CARB) is responsible for creating guidelines for this Act. In 2008, CARB adopted its proposed Scoping Plan, which included the approval of Senate Bill (SB) 375 as a means of achieving regional transportation-related GHG targets. SB 375 provides guidance on how curbing emissions from cars and light trucks helps the State comply with AB 32.

Established through CARB, SB 375 lists four major components and requirements: (1) it requires regional GHG emissions targets; (2) it requires creating a Sustainable Communities Strategy (SCS) that provides a plan for meeting the regional targets; (3) it requires that regional housing elements and transportation plans be synchronized on 8-year schedules; and (4) it requires transportation and air pollutant emissions modeling techniques consistent with guidelines prepared by the California Transportation Commission (CTC).

California Air Resources Board. As previously described, as part of SB 375 compliance, CARB was required to set targets for GHG reductions for each Metropolitan Planning Organization (MPO) within California. CARB provides targets and thresholds for MPOs and assists with regional efforts to achieve the GHG emission reductions contained in each MPO's SCS. It should be noted that CARB does not provide a threshold for reducing VMT; however, reducing VMT is a strategy for achieving CARB GHG reduction targets.

The City has been committed to climate change and GHG/VMT reduction strategies; as such, both the Fresno Council of Governments (COG) and CARB authorities have teamed up to present thresholds with the goal of reducing GHG emissions. Fresno COG's current SCS, adopted in 2018, includes goals to achieve a 5 percent per capita GHG emissions reduction by 2020 and a 10 percent reduction by 2035, compared to 2005 levels. The SCS includes strategies for encouraging the achievement of these targets. Strategies include increasing transit and active transportation improvements, such as identifying future funding for additional BRT lines within Fresno and over 500 new lane miles of bicycle facilities. These improvements are intended to decrease distances between residents and bicycle/walking facilities and therefore

increase infill development. As stated in CARB's MPO Target Recommendations memo,[3] these improvements will result in an increase from 4.0 dwelling units per acre (du/ac) to 9.3 du/ac, caused by the projected increase in multifamily housing development from 22 percent to 47 percent by 2035.

The Fresno COG will be working on its third SCS, proposed for adoption in 2022, which will include goals and polices from the City of Fresno General Plan. In 2018, CARB adopted more aggressive SB 375 targets to support progress toward the 2017 Scoping Plan goals. As a result, the third SCS will include more ambitious SB 375 GHG emission reduction targets within Fresno consisting of 6 percent per capita reductions by 2020 and 13 percent reductions by 2035.

Assembly Bill 1358 (Complete Streets). The California Complete Streets Act (Act) requires general plans updated after January 30, 2011, to include Complete Streets policies so that roadways are designed to safely accommodate all users, including bicyclists, pedestrians, transit riders, children, the elderly, and persons with disabilities, as well as motorists. The goal of this Act is to encourage cities to rethink policies that emphasize automobile circulation and prioritize motor vehicle improvements, and come up with creative solutions that emphasize all modes of transportation. Complete Streets roadways allow for more transportation options, more non-single-occupancy vehicles, and less traffic congestion. Additionally, increased transit ridership, walking, and biking can reduce air pollution while improving the overall travel experience for road users.

While there is no standard for a Complete Streets design, it generally includes one or more of the following features: bicycle lanes, wide shoulders, well-designed and well-placed crosswalks, crossing islands in appropriate mid-block locations, bus pullouts or special bus lanes, audible and accessible pedestrian signals, sidewalk bulb-outs, center medians, street trees, planter strips, and groundcover. The City adopted a Complete Streets Policy on September 26, 2019.

Senate Bill (SB) 743. On September 27, 2013, Governor Jerry Brown signed SB 743 into law and codified a process that changed transportation impact analysis as part of CEQA compliance. SB 743 directs the California Office of Planning and Research (OPR) to administer new CEQA guidance for jurisdictions that removes automobile vehicle delay and LOS or other similar measures of vehicular capacity or traffic congestions from CEQA transportation analysis. Rather, it requires the analysis of VMT or other measures that "promote the reduction of greenhouse gas emissions, the development of multi-modal transportation networks, and a diversity of land uses," to be used as a basis for determining significant impacts to circulation in California. The goal of SB 743 is to appropriately balance the needs of congestion management

with statewide goals related to reducing GHG emissions, encourage infill development, and promote public health through active transportation.

Local

Regional Transportation Plan. The adopted Regional Transportation Plan (RTP) establishes regional transportation policy for the Fresno County region. The RTP focuses on achieving a coordinated and balanced multimodal transportation system, while maintaining the integrity of the existing system. The RTP includes projects located throughout Fresno County region for all forms or modes of transportation, including automobiles, transit, nonmotorized (including bicycle), passenger rail, freight and aviation facilities. The RTP reflects a fiscally constrained environment and identifies those projects (considered as Tier 1 projects) that have a secure or approved funding source.

Fresno County General Plan. In accordance with Government Code Sections 65302 (b) and 65303, the County of Fresno has a General Plan Element titled Transportation and Circulation. The General Plan outlines goals and policies that all development projects within the jurisdiction of County of Fresno must adhere to. The Fresno County General Plan has five goals that address streets and highways, transit, transportation systems management, bicycle facilities, rail transportation, and air transportation. The County's General Plan was adopted in October 2000.

City of Fresno Municipal Code. Chapter 13 of the City of Fresno Municipal Code addresses the general provisions for sidewalks, streets, parkways, and underground utilities. Chapter 14 addresses traffic and circulation.

City of Fresno General Plan. The most applicable policies of the City's General Plan with regard to the proposed Project and traffic/circulation are as follows:

<u>Public Facilities Element</u>

E-1-b. Policy *Review local and regional transportation plans and capital improvement plans to ensure that only projects consistent with this plan are being proposed and funded.*

E-1-c. Policy *Give the highest priority to street and highway improvements that will not jeopardize or negatively impact neighborhoods and other sensitive land uses (such as residences, hospitals, schools, natural habitats, and open space areas). Additional considerations are as follows:*

- *added safety;*
- *air quality;*

- *maintenance of capacity and pavement integrity;*
- *facilitation of multi-modal transportation system; and*
- *increased efficiency.*

E-1-f. Policy *Allow a Level of Service "D" (LOS "D") as the acceptable level of traffic congestion on major streets. LOS "D" according to the Caltrans and COFCG accepted LOS criteria, as developed by the Florida Department of Transportation, means moderate congestion at peak traffic periods; approaching unstable flow with reduced speeds, limited maneuverability, and loss of convenience; average speeds range from 9 to 17 miles per hour on arterials with stopped delays of 40 seconds or less.*

E-1-j. Policy *Provide areas for pedestrian and other non-motorized travel that enhance the safety, utilization, and efficiency of the street system. Pedestrian travel should be encouraged as a viable mode of movement throughout the metropolitan area by providing safe and convenient pedestrian facilities in new and existing urban areas and particularly within the Central Area and urban core community centers.*

E-1-l. Policy *All commercial and office development should be linked with pedestrian, bicycle, and transit facilities.*

E-1-m. Policy *Achieve greater pedestrian accessibility to commercial uses from nearby neighborhoods.*

E-1-o. Policy *For new single-family residential subdivisions, sidewalks are required on both sides of local residential streets.*

- *For new single-family residential subdivisions with private streets, sidewalks shall be located on both sides of all private streets. Design, placement and construction of sidewalks on private streets shall be in accordance with the Standard Specifications and Drawings of the City of Fresno Public Works Department and shall have adequate lighting. Sidewalks shall be separated horizontally and vertically from the adjacent street with continuous curbing, landscape strips or other barrier(s) approved by the Director of the Planning and Development Department for the City of Fresno.*

- *Pedestrian Access Plan alternative. As an alternative to constructing sidewalks on both sides of the private street, the applicant may submit a pedestrian access plan.*

  A pedestrian access plan may include methods other than sidewalks adjacent to the curb, but shall include an on-site pedestrian path (sidewalks and/or walks) throughout the subdivision and include connection(s) to the public right-of-way. The pedestrian access plan shall connect all residences to common buildings, facilities, amenities, and other residences, in a manner that minimizes out-of-

direction travel, and shall provide access to adjacent schools, parks and other public or private community amenities.

A pedestrian access plan shall be included as an element of a conditional use permit as required for a planned development, and approval shall be contained within the entitlement submitted. The pedestrian access plan shall demonstrate the safe and effective movement of pedestrians within the subdivision. Detailed drawings of the walk (i.e. surface material, thickness, etc.) shall be provided. Demonstration of safe and effective movement of pedestrians shall include adequate lighting.

Approval of the pedestrian access plan configuration shall be made by the City of Fresno Planning and Development Director. Comments shall be obtained from the City of Fresno Traffic Engineer and/or the City Engineer.

- *Exceptions to new single-family residential subdivision sidewalk requirements for private streets:*

  Single-street Subdivisions: Sidewalks are not required on a private street, which is not a through street, having a length of 200 feet or less and provides access to a maximum of 10 lots; all houses in the subdivision must face the single private street. This exception cannot be used as an element of a pedestrian access plan alternative, additionally, it does not apply to a private street intersecting with a private street within a planned development; or

  Single loaded streets may eliminate sidewalks on the side opposite the units when it is not needed to provide for logical pedestrian circulation.

- *Design guidelines for walks. All pedestrian walks shall be considered an accessible route, as defined by the California Building Code (CBC), and must be constructed in accordance with Chapter 11A of the CBC and the Americans with Disabilities Act (ADA). Considerations for accessibility include, but are not limited to, width, surface material, slope and detectable warnings.*

- *After the adoption of the 2025 Fresno General Plan, some planned development were approved by the City of Fresno that had either no sidewalk, sidewalk on one side of the private street or sidewalks on both sides of the private street. The City of Fresno recognizes that developers may prepare engineered infrastructure and other design improvement plans with the intent on developing projects as approved.*

  As such, in those cases where both a special permit and tentative (or vesting tentative) tract map which propose private street(s) have received final approval by the City of Fresno and all administrative appeal periods for those entitlements have expired, the developer shall be allowed to rely upon those prior approvals

with regard to sidewalk requirements subject to the conditions of approval and associated exhibits for purposes of filing a final map. For the purpose of this policy, lots being further subdivided, or shown as outlots to be re-subdivided, shall be considered approved only when both the special permit and the tentative (or vesting tentative) tract map that further subdivides those the lots or outlots are finally approved by the City of Fresno and all administrative appeal periods have expired.

E-2-b. Policy *Minimize vehicular and vehicle-pedestrian conflicts on major streets and adjacent land uses through use of traffic design and control measures that reduce congestion and increase safety.*

E-2-d. Policy *Require design measures to mitigate noise and safety concerns along major streets such as adequate building setbacks, frontage roads, landscaping and noise barriers, particularly for residential and other noise-sensitive uses.*

E-2-e. Policy *Require the design of local streets to provide efficient circulation and allow convenient access while protecting neighborhoods from the intrusion of through traffic.*

E-2-f. Policy *Require the completion of a comprehensive traffic impact study for all proposed plan amendments of five acres or more in size or in accordance with traffic impact study guidelines (including minimum project size) as may be established by the City of Fresno.*

E-2-h. Policy *Limit the number of driveway access points on all major streets to minimize traffic disruption and protect traffic flows. No development shall be approved if it will adversely affect the flow of traffic on a public street below an acceptable standard to be determined by the Public Works Director and based upon the policies noted herein.*

E-2-i. Policy *Multiple-family residential, commercial, institutional, industrial, and office projects shall be designed such that related traffic will not route through local residential streets.*

E-3-c. Policy *The cost of constructing the major street system should be applied to new development consistent with state and federal laws.*

E-8-b. Policy *Plan and develop the major street network to facilitate efficient direct transit routing that provides one-half mile coverage throughout the metropolitan area. Circuitous streets are more difficult for public transit to efficiently serve than consistently spaced linear or semi-grid patterns for arterial and collector streets.*

E-8-d. Policy *Retail and office buildings shall be located near arterial and major collector streets served by public transit.*

E-9-cc. Policy *Bus bay turnouts and site improvements (including improvements associated with bus stop accessibility for the physically impaired such as curb cuts for wheelchair access) should be required where development occurs along established or proposed transit routes. The costs associated with these improvements should be paid by the site developer. Bus bay development standards and stop accessibility standards are contained in the Fresno Area Express Transit Facilities Development Standards document.*

E-13-a. Policy *Provide bikeways in proximity to major traffic generators such as commercial centers, schools, recreational areas, and major public facilities.*

E-13-b. Policy *Require major traffic generating uses (major shopping centers, office complexes, public service facilities, et al.) to design on-site parking and circulation areas to facilitate bicycle travel.*

E-14-a. Policy *Require that development projects adjacent to a designated bikeway provide adequate right-of-way and construct necessary improvements to implement the planned bikeway system. Construction of new major streets or reconstruction of existing major streets shall also provide for the planned bikeway system to the extent feasible. Where inadequate right-of-way is available within established areas alternative bikeway alignments or routes shall be pursued consistent with Policy E-13-d.*

West Area Community Plan

W-2-c. Policy *Pursue the formation of a comprehensive city-managed funding program in the West Community Plan Area to provide needed public facilities (including, but not limited to streets, sidewalks, sewer and water infrastructure, law enforcement substations, and parks) in the incorporated and unincorporated portions of the plan area.*

W-3-a. Policy *Designate Grantland Avenue and the Grantland Diagonal between Shields Avenue and its intersection with the right-of-way of the Southern Pacific Railroad tracks as a boulevard area, with a 30-foot landscaped setback required. Planned elements of the city's master trail system may be located partially within this setback.*

W-3-b. Policy *Provide a 20-foot landscaped setback along all designated arterial streets. Planned elements of the city's master trail system may be located partially within this setback.*

W-3-c. Policy *Provide a 15-foot landscaped setback, or the setback required by the Fresno Municipal Code, whichever is greater, along all collector streets and along the Gettysburg alignment transportation corridor. Planned elements of the city's master trail system may be located partially within this setback.*

Thresholds of Significance

In accordance with the CEQA Guidelines, a project impact would be considered significant if the project would:

- Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?
- Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Result in inadequate emergency access?

Analysis Methodology

JLB Traffic Engineering, Inc. prepared a Traffic Impact Study (TIS) (see Appendix D and D1) analyzing potential impacts the proposed Project would have on the existing roadway and transportation system. This was prepared in general conformance with City of Fresno requirements and *Caltrans Guide for the Preparation of Traffic Impact Studies*. The TIS provides an analysis of the surrounding roadway system and the effects of the proposed Parc West Project on the existing and planned roadway infrastructure, including potential mitigation measures to reduce Project transportation impacts. Study results are summarized in the text below. For the full text, graphics, and traffic counts, please refer to Appendix D and D1.

Note: The TIS is provided in two parts as follows:

- Parc West Traffic Impact Analysis (Appendix D)
- Parc West Traffic Impact Analysis Addendum (Appendix D1) – the addendum was prepared at the request of the City of Fresno to include analysis for the intersection of Polk Avenue / Shaw Avenue; SR 99 / Herndon Avenue Interchange; SR 99 / Shaw Avenue Interchange; and the SR 99 / Ashlan Avenue Interchange.

The text of this EIR includes information from both of these documents and reference is made to either the original TIS or the Addendum as appropriate.

Intersection Analysis

Level of Service Analysis Methodology

Level of Service (LOS) is a qualitative index of the performance of an element of the transportation system. LOS is a rating scale running from "A" to "F", with "A" indicating no congestion of any kind and "F" indicating unacceptable congestion and delays. LOS in this study describes the operating conditions for signalized and unsignalized intersections.

The *2010 Highway Capacity Manual* (HCM) is the standard reference published by the Transportation Research Board and contains the specific criteria and methods to be used in assessing LOS. U-turn movements were analyzed using HCM 2000 methodologies and would yield more accurate results for the reason that HCM 2010 methodologies do not allow the analysis of U-turns. Synchro software was used to define LOS in this study. Details regarding these calculations are included in Appendix C of Appendix D.

Criteria of Significance

The City of Fresno 2035 General Plan has established various degrees of acceptable LOS on its major streets, which are dependent on four (4) Traffic Impact Zones (TIZ) within the City. The standard LOS threshold for TIZ I is LOS F, that for TIZ II is LOS E, that for TIZ III is LOS D, and that for TIZ IV is LOS E.

Additionally, the 2035 MEIR made findings of overriding consideration to allow a lower LOS threshold than that established by the underlying TIZ's. For those cases in which a LOS criterion for a roadway segment differs from that of the underlying TIZ, such criteria are identified in the roadway description. As all study facilities fall within TIZ III, LOS D is used to evaluate the potential significance of LOS impacts to intersections within this TIA pursuant to the City of Fresno 2035 General Plan.

The County of Fresno has established LOS C as the acceptable level of traffic congestion on county roads and streets that fall entirely outside the Sphere of Influence (SOI) of a City. For those areas that fall within the SOI of a City, the LOS criteria of the City are the criteria of significance used in this report. LOS C is used to evaluate the potential significance of LOS impacts to Fresno County intersections and segments that fall outside the City of Fresno SOI. In this case, all study facilities fall within the City of Fresno SOI, therefore, the City of Fresno LOS is utilized.

Caltrans endeavors to maintain a target LOS at the transition between LOS C and D on State highway facilities consistent with the *Caltrans Guide for the Preparation of Traffic Impact Studies*

dated December 2002. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. In the TIS, all study facilities within Caltrans jurisdiction utilize LOS D to evaluate the potential significance of LOS impacts to state facilities.

Refer to Page 6 of Appendix D under the section titled "Operational Analysis Assumptions and Default" for the Project operational analysis values, assumptions and defaults that were used in the study.

Analysis Locations

Study Facilities

The existing peak hour turning movement and segment volume counts were conducted for the study intersections between September 2018 and May 2019 while schools in the vicinity of the proposed Project were in session. The intersection turning movement counts included pedestrian volumes. The traffic counts for the existing study intersections are contained in Appendix A of Appendix D. The existing intersection turning movement volumes, intersection geometrics and traffic controls are illustrated in Figure 1 of Appendix D.

<u>Study Intersections (from original Traffic Impact Study – Appendix D):</u>

1. Grantland Avenue / Barstow Avenue
2. Garfield Avenue / Shaw Avenue
3. Grantland Avenue / Shaw Avenue
4. Veterans Boulevard / Shaw Avenue
5. Bryan Avenue / Shaw Avenue
6. Hayes Avenue / Shaw Avenue
7. Grantland Avenue / Gettysburg Avenue
8. Veterans Boulevard / Gettysburg Avenue
9. Bryan Avenue / Gettysburg Avenue
10. Parc West Drive / Ashlan Avenue
11. Grantland Avenue / Ashlan Avenue

12. Bryan Avenue / Ashlan Avenue

13. Hayes Avenue / Ashlan Avenue

14. Polk Avenue / Ashlan Avenue

15. Cornelia Avenue / Ashlan Avenue

16. Grantland Avenue / Dakota Avenue

17. Grantland Avenue / Shields Avenue

Study Intersections (from Traffic Impact Study Addendum – Appendix D1):

1. Herndon Avenue / State Route 99 Northbound Off-Ramp

2. Grantland Avenue / State Route 99 Southbound On-Ramp

3. Polk Avenue / Shaw Avenue

4. State Route 99 Southbound Ramps / Shaw Avenue

5. State Route 99 Northbound Ramps / Shaw Avenue

6. State Route 99 Southbound Off-Ramp / Ashlan Avenue

7. State Route 99 Northbound Off-Ramp / Ashlan Avenue

Study Segments (from original Traffic Impact Study – Appendix D):

1. Shaw Avenue between Grantland Avenue and Veterans Boulevard

2. Shaw Avenue between Veterans Boulevard and Bryan Avenue

3. Shaw Avenue between Bryan Avenue and Hayes Avenue

4. Garfield Avenue between Shaw Avenue and Gettysburg Avenue

5. Grantland Avenue between Shaw Avenue and Veterans Boulevard

6. Grantland Avenue between Veterans Boulevard and Gettysburg Avenue (West Leg)

7. Grantland Avenue between Gettysburg Avenue (West Leg) and Ashlan Avenue

8. Grantland Avenue between Ashlan Avenue and Dakota Avenue

9. Grantland Avenue between Dakota Avenue and Shields Avenue

10. Ashlan Avenue between Grantland Avenue and Bryan Avenue

11. Ashlan Avenue between Bryan Avenue and Hayes Avenue

12. Ashlan Avenue between Hayes Avenue and Polk Avenue

Note: There were no additional study segments deemed necessary to analyze in the TIS Addendum.

Analysis Time Periods and Scenarios

The study time periods include the peak hours determined within each of the following conditions:

- Existing Conditions;
- Existing-Plus-Project (Phase I) Conditions;
- Existing-Plus-Project (Phase I and Phase II) Conditions;
- Existing-Plus-Project (Buildout) Conditions;
- Near-Term Plus-Project (Buildout) Conditions
- Cumulative Year 2035 No-Project Conditions; and
- Cumulative Year 2035 Plus-Project Conditions.

Impacts and Mitigation Measures

Impact 3.17-1: *Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*

Less than Significant Impact With Mitigation. The proposed Project includes up to 844 single-family residential units, which could result in potentially significant increases in traffic in and around the Project area. The Traffic Impact Analysis prepared for the Project (Appendix D and D1) is summarized herein.

Existing Traffic

Tables 3.17-1 and 3.17-1a present pre-Project (existing) traffic conditions in the Project area. As of February 2020, the intersection of Bryan Avenue and Ashlan Avenue exceeds its LOS

threshold during the AM peak period. Table 3.17-2 presents existing roadway segment conditions.

Table 3.17-1
Existing Intersection LOS Results

ID	Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Grantland Avenue / Barstow Avenue	Two-Way Stop	18.2	C	17.0	C
2	Garfield Avenue / Shaw Avenue	Two-Way Stop	19.8	C	12.2	B
3	Grantland Avenue / Shaw Avenue	Signalized	52.6	D	20.2	C
4	Veterans Boulevard / Shaw Avenue	Does Not Exist	N/A	N/A	N/A	N/A
5	Bryan Avenue / Shaw Avenue	One-Way Stop	14.3	B	15.6	C
6	Hayes Avenue / Shaw Avenue	One-Way Stop	17.7	C	19.6	C
7	Grantland Avenue / Gettysburg Avenue	One-Way Stop	10.7	B	10.5	B
8	Veterans Boulevard / Gettysburg Avenue	Does Not Exist	N/A	N/A	N/A	N/A
9	Bryan Avenue / Gettysburg Avenue	One-Way Stop	13.1	B	9.8	A
10	Parc West Drive / Ashlan Avenue	Does Not Exist	N/A	N/A	N/A	N/A
11	Grantland Avenue / Ashlan Avenue	One-Way Stop	11.4	B	10.7	B
12	Bryan Avenue / Ashlan Avenue	All-Way Stop	**38.3**	**E**	8.5	A
		All-Way Stop (Improved)	24.0	C	8.6	A
13	Hayes Avenue / Ashlan Avenue	All-Way Stop	7.6	A	8.5	A
14	Polk Avenue / Ashlan Avenue	All-Way Stop	9.1	A	13.0	B
15	Cornelia Avenue / Ashlan Avenue	Signalized	52.1	D	23.3	C
16	Grantland Avenue / Dakota Avenue	Does Not Exist	N/A	N/A	N/A	N/A
17	Grantland Avenue / Shields Avenue	All-Way Stop	10.0	A	8.4	A

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table 3.17-1a
Existing Intersection LOS Results

ID	Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Herndon Avenue / SR 99 NB Off-Ramp	Signalized	16.7	B	17.0	B
2	Grantland Avenue / SR 99 SB On-Ramp	Signalized	0.3	A	0.3	A
3	Polk Avenue / Shaw Avenue	Signalized	41.7	D	31.8	C
4	SR 99 SB Ramps / Shaw Avenue	Signalized	14.1	B	14.2	B
5	SR 99 NB Ramps / Shaw Avenue	Signalized	8.6	A	30.3	C
6	SR 99 SB Off-Ramp / Ashlan Avenue	Signalized	19.4	B	24.4	C
7	SR 99 NB Off-Ramp / Ashlan Avenue	Signalized	27.3	C	41.2	D

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table 3.17-2
Existing Road Segment Results -

ID	Segment	Limits	Lanes	24-hour Volume	LOS
1	Shaw Avenue	Grantland Avenue and Veterans Boulevard	2	9,530	C
2	Shaw Avenue	Veterans Boulevard and Bryan Avenue	2	9,530	C
3	Shaw Avenue	Bryan Avenue and Hayes Avenue	2	9,884	C
4	Garfield Avenue	Shaw Avenue and Gettysburg Avenue	2	159	C
5	Grantland Avenue	Shaw Avenue and Veterans Boulevard	2	3,964	C
6	Grantland Avenue	Veterans Boulevard and Gettysburg Avenue (WL)	DNE	DNE	DNE
7	Grantland Avenue	Gettysburg Avenue (WL) and Ashlan Avenue	2	4,434	C
8	Grantland Avenue	Ashlan Avenue and Dakota Avenue	2	3,093	C
9	Grantland Avenue	Dakota Avenue and Shields Avenue	2	3,093	C
10	Ashlan Avenue	Grantland Avenue and Bryan Avenue	3	2,418	B
11	Ashlan Avenue	Bryan Avenue and Hayes Avenue	2	4,202	B
12	Ashlan Avenue	Hayes Avenue and Polk Avenue	2	3,861	B

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Project Traffic

Trip generation rates for the proposed Project under buildout were obtained from the 10th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Table 3.17-3 presents the trip generation for the proposed Project (Buildout) with trip generation rates for Single-Family Detached Housing. At buildout, the proposed Project is estimated to generate a maximum of 7,968 daily trips, 625 AM peak hour trips and 836 PM peak hour trips.

Table 3.17-3
Proposed Project Trip Generation

Land Use (ITE Code)	Size	Unit	Daily		AM Peak Hour						PM Peak Hour					
			Rate	Total	Trip Rate	In %	Out %	In	Out	Total	Trip Rate	In %	Out %	In	Out	Total
Single-Family Detached Housing (210)	844	d.u.	9.44	7,967	0.74	25	75	156	469	625	0.99	63	37	527	309	836
Public Park (411)	1.819	acre	0.78	1	0.02	59	41	0	0	0	0.11	55	45	0	0	0
Total Project Trips				**7,968**				**156**	**469**	**625**				**527**	**309**	**836**

Note: d.u. = Dwelling Units

Existing Plus Project Phase I

The Project (Phase I) will only construct 84 single-family residential units on 14.41 acres. The Project (Phase I) is anticipated to be constructed at what will be the southwest corner of Grantland Avenue and the west leg of Gettysburg Avenue. The proposed Project under Phase I

is estimated to generate a maximum of 793 daily trips, 62 AM peak hour trips and 83 PM peak hour trips.

The Existing plus Project (Phase I) Traffic Conditions scenario assumes that a portion of Gettysburg Avenue exists west of Grantland Avenue. Figure 5 of Appendix D illustrates the Existing plus Project (Phase I) turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing plus Project (Phase I) Traffic Conditions scenario are provided in Appendix G of Appendix D. Table 3.17-4 and 3.17-4a present a summary of the Existing plus Project (Phase I) peak hour LOS at the study intersections, while Table 3.17-5 presents a summary of the Existing plus Project (Phase I) LOS for the study segments.

Table 3.17-4
Existing Plus Project (Phase I) Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*AM Peak Hour*		*PM Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	Grantland Avenue / Barstow Avenue	Two-Way Stop	18.5	C	17.3	C
2	Garfield Avenue / Shaw Avenue	Two-Way Stop	19.8	C	12.2	B
3	Grantland Avenue / Shaw Avenue	Signalized	21.3	C	20.4	C
4	Veterans Boulevard / Shaw Avenue	Does Not Exist	N/A	N/A	N/A	N/A
5	Bryan Avenue / Shaw Avenue	One-Way Stop	14.4	B	15.6	C
6	Hayes Avenue / Shaw Avenue	One-Way Stop	17.9	C	19.8	C
7	Grantland Avenue / Gettysburg Avenue	Two-Way Stop	11.6	B	11.7	B
8	Veterans Boulevard / Gettysburg Avenue	Does Not Exist	N/A	N/A	N/A	N/A
9	Bryan Avenue / Gettysburg Avenue	One-Way Stop	13.1	B	9.8	A
10	Parc West Drive / Ashlan Avenue	Does Not Exist	N/A	N/A	N/A	N/A
11	Grantland Avenue / Ashlan Avenue	One-Way Stop	11.9	B	10.9	B
12	Bryan Avenue / Ashlan Avenue	All-Way Stop	**41.9**	**E**	8.7	A
		All-Way Stop (Mitigated)	28.0	D	8.8	A
13	Hayes Avenue / Ashlan Avenue	All-Way Stop	7.7	A	8.7	A
14	Polk Avenue / Ashlan Avenue	All-Way Stop	9.3	A	13.5	B
15	Cornelia Avenue / Ashlan Avenue	Signalized	43.0	D	23.4	C
16	Grantland Avenue / Dakota Avenue	Does Not Exist	N/A	N/A	N/A	N/A
17	Grantland Avenue / Shields Avenue	All-Way Stop	10.1	B	8.4	A

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table 3.17-4a
Existing Plus Project (Phase I) Intersection LOS Results

ID	Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Herndon Avenue / SR 99 NB Off-Ramp	Signalized	16.7	B	17.4	B
2	Grantland Avenue / SR 99 SB On-Ramp	Signalized	0.3	A	0.3	A
3	Polk Avenue / Shaw Avenue	Signalized	41.9	D	33.0	C
4	SR 99 SB Ramps / Shaw Avenue	Signalized	14.1	B	14.7	B
5	SR 99 NB Ramps / Shaw Avenue	Signalized	8.6	A	29.4	C
6	SR 99 SB Off-Ramp / Ashlan Avenue	Signalized	19.4	B	24.4	C
7	SR 99 NB Off-Ramp / Ashlan Avenue	Signalized	27.3	C	41.2	D

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table 3.17-5
Existing Plus Project (Phase I) Segment Results

ID	Segment	Limits	Lanes	24-hour Volume	LOS
1	Shaw Avenue	Grantland Avenue and Veterans Boulevard	2	9,620	C
2	Shaw Avenue	Veterans Boulevard and Bryan Avenue	2	9,603	C
3	Shaw Avenue	Bryan Avenue and Hayes Avenue	2	9,953	C
4	Garfield Avenue	Shaw Avenue and Gettysburg Avenue	2	159	C
5	Grantland Avenue	Shaw Avenue and Veterans Boulevard	2	4,200	C
6	Grantland Avenue	Veterans Boulevard and Gettysburg Avenue (WL)	DNE	DNE	DNE
7	Grantland Avenue	Gettysburg Avenue (WL) and Ashlan Avenue	2	4,984	C
8	Grantland Avenue	Ashlan Avenue and Dakota Avenue	2	3,199	C
9	Grantland Avenue	Dakota Avenue and Shields Avenue	2	3,193	C
10	Ashlan Avenue	Grantland Avenue and Bryan Avenue	3	2,862	B
11	Ashlan Avenue	Bryan Avenue and Hayes Avenue	2	4,557	B
12	Ashlan Avenue	Hayes Avenue and Polk Avenue	2	4,168	B

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Under this scenario, the intersection of Bryan Avenue and Ashlan Avenue is projected to exceed its LOS threshold during the AM peak period. To improve the LOS at this intersection, it is recommended that the following improvements be implemented.

- Bryan Avenue / Ashlan Avenue
    - Modify the westbound through-right lane to a through lane; and
    - Add a westbound right-turn lane.

Under this scenario, all study segments are projected to operate at an acceptable LOS.

Existing Plus Project Phase I Mitigation Measures: Refer to the section titled "Project Mitigation Measures and Fair Share Calculations" (starting on page 3.17-41) for the list of

traffic/transportation mitigation measures required by the Project. Tables 3.17-13 and 3.17-13a present the Project's fair share percentage impact of the study intersections at which the Project will either cause or contribute to a significant impact which corresponds to the recommended improvements listed under the Cumulative Year 2035 With Project Scenario. The Project Applicant will be required to mitigate their fair share percentage of these impacts as identified in Mitigation Measures TRA-1 and TRA-2.

Existing Plus Project Phase II

The Project (Phase II) will construct 381 single-family residential units. The Project (Phase II) is anticipated to be constructed at what will be the northwest quadrant of Grantland Avenue and Ashlan Avenue, adjacent to the Project Phase I.

The proposed Project under Phase II is estimated to generate a maximum of 3,597 daily trips, 282 AM peak hour trips and 377 PM peak hour trips. The Existing plus Project (Phase I & Phase II) Traffic Conditions scenario assumes the same roadway geometrics and traffic controls as those assumed in the Existing plus Project (Phase I) Traffic Conditions scenario with a few exceptions.

This scenario assumes that the intersection of Parc West Drive and Ashlan Avenue is controlled by a single-lane roundabout. Moreover, this scenario assumes that the Project (Phase II) will construct Ashlan Avenue as a two-lane undivided collector for approximately 600 feet west of Grantland Avenue and that the intersection of Grantland Avenue and Ashlan Avenue is controlled by a two-way stop on Ashlan Avenue. Figure 7 of Appendix D illustrates the assumed intersection geometrics and traffic controls for these intersections under this scenario.

Tables 3.17-6 and 3.17-6a present a summary of the Existing plus Project (Phase I & Phase II) peak hour LOS at the study intersections, while Table 3.17-7 presents a summary of the Existing plus Project (Phase I & Phase II) LOS for the study segments.

Table 3.17-6
Existing Plus Project (Phase II) Intersection LOS Results

ID	Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Grantland Avenue / Barstow Avenue	Two-Way Stop	20.4	C	19.5	C
2	Garfield Avenue / Shaw Avenue	Two-Way Stop	21.0	C	12.4	B
3	Grantland Avenue / Shaw Avenue	Signalized	25.2	C	23.3	C
4	Veterans Boulevard / Shaw Avenue	Does Not Exist	N/A	N/A	N/A	N/A
5	Bryan Avenue / Shaw Avenue	One-Way Stop	16.2	C	17.5	C
6	Hayes Avenue / Shaw Avenue	One-Way Stop	20.7	C	23.1	C
7	Grantland Avenue / Gettysburg Avenue	Two-Way Stop	15.3	C	17.1	C
8	Veterans Boulevard / Gettysburg Avenue	Does Not Exist	N/A	N/A	N/A	N/A
9	Bryan Avenue / Gettysburg Avenue	One-Way Stop	13.1	B	9.6	A
10	Parc West Drive / Ashlan Avenue	Roundabout	4.0	A	4.1	A
11	Grantland Avenue / Ashlan Avenue	One-Way Stop	14.2	B	16.4	C
12	Bryan Avenue / Ashlan Avenue	All-Way Stop	**49.3**	**E**	9.0	A
		All-Way Stop (Mitigated)	33.6	D	9.0	A
13	Hayes Avenue / Ashlan Avenue	All-Way Stop	7.8	A	8.8	A
14	Polk Avenue / Ashlan Avenue	All-Way Stop	9.4	A	14.0	B
15	Cornelia Avenue / Ashlan Avenue	Signalized	43.2	D	23.5	C
16	Grantland Avenue / Dakota Avenue	Does Not Exist	N/A	N/A	N/A	N/A
17	Grantland Avenue / Shields Avenue	All-Way Stop	10.9	B	9.0	A

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table 3.17-6a
Existing Plus Project (Phase II) Intersection LOS Results

ID	Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Herndon Avenue / SR 99 NB Off-Ramp	Signalized	16.8	B	17.9	B
2	Grantland Avenue / SR 99 SB On-Ramp	Signalized	0.3	A	0.3	A
3	Polk Avenue / Shaw Avenue	Signalized	44.6	D	30.8	C
4	SR 99 SB Ramps / Shaw Avenue	Signalized	14.0	B	14.3	B
5	SR 99 NB Ramps / Shaw Avenue	Signalized	9.3	A	38.2	D
6	SR 99 SB Off-Ramp / Ashlan Avenue	Signalized	19.4	B	24.4	C
7	SR 99 NB Off-Ramp / Ashlan Avenue	Signalized	27.3	C	41.3	D

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table 3.17-7
Existing Plus Project (Phase II) Segment Results

ID	Segment	Limits	Lanes	24-hour Volume	LOS
1	Shaw Avenue	Grantland Avenue and Veterans Boulevard	2	10,810	C
2	Shaw Avenue	Veterans Boulevard and Bryan Avenue	2	10,793	C
3	Shaw Avenue	Bryan Avenue and Hayes Avenue	2	11,043	C
4	Garfield Avenue	Shaw Avenue and Gettysburg Avenue	2	159	C
5	Grantland Avenue	Shaw Avenue and Veterans Boulevard	2	6,360	C
6	Grantland Avenue	Veterans Boulevard and Gettysburg Avenue (WL)	DNE	DNE	DNE
7	Grantland Avenue	Gettysburg Avenue (WL) and Ashlan Avenue	2	6,444	C
8	Grantland Avenue	Ashlan Avenue and Dakota Avenue	2	4,209	C
9	Grantland Avenue	Dakota Avenue and Shields Avenue	2	4,173	C
10	Ashlan Avenue	Grantland Avenue and Bryan Avenue	3	3,402	B
11	Ashlan Avenue	Bryan Avenue and Hayes Avenue	2	4,927	B
12	Ashlan Avenue	Hayes Avenue and Polk Avenue	2	4,408	B

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Under this scenario, the intersection of Bryan Avenue and Ashlan Avenue is projected to exceed its LOS threshold during the AM peak period. To improve the LOS at this intersection, it is recommended that the following improvements be implemented.

- Bryan Avenue / Ashlan Avenue
    - Modify the westbound through-right lane to a through lane; and
    - Add a westbound right-turn lane.

Under this scenario, all study segments are projected to operate at an acceptable LOS.

Existing Plus Project Mitigation Measures: Refer to the section titled "Project Mitigation Measures and Fair Share Calculations" (starting on page 3.17-41) for the list of traffic/transportation mitigation measures required by the Project. Tables 3.17-13 and 3.17-13a present the Project's fair share percentage impact of the study intersections at which the Project will either cause or contribute to a significant impact which corresponds to the recommended improvements listed under the Cumulative Year 2035 With Project Scenario. The Project Applicant will be required to mitigate their fair share percentage of these impacts as identified in Mitigation Measures TRA-1 and TRA-2.

Existing Plus Project Scenario

This scenario is required by CEQA and assumes the entire Project is built out on opening day, rather than being developed in phases over time. The Existing plus Project (Buildout) Traffic Conditions scenario assumes that Gettysburg Avenue exists between Garfield Avenue and

Grantland Avenue, that Ashlan Avenue exists between Garfield Avenue and Grantland Avenue, and that Garfield Avenue exists between Gettysburg Avenue and Ashlan Avenue.

Figure 9 of Appendix D illustrates the Existing plus Project (Buildout) turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing plus Project (Buildout) Traffic Conditions scenario are provided in Appendix I of Appendix D. Tables 3.17-8 and 3.17-8a present a summary of the Existing plus Project (Buildout) peak hour LOS at the study intersections, while Table 3.17-9 presents a summary of the Existing plus Project (Buildout) LOS for the study segments.

Table 3.17-8
Existing Plus Project (Full Build) Intersection LOS Results

ID	Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Grantland Avenue / Barstow Avenue	Two-Way Stop	23.2	C	22.7	C
2	Garfield Avenue / Shaw Avenue	Two-Way Stop	21.3	C	14.2	B
3	Grantland Avenue / Shaw Avenue	Signalized	35.9	D	31.8	C
4	Veterans Boulevard / Shaw Avenue	Does Not Exist	N/A	N/A	N/A	N/A
5	Bryan Avenue / Shaw Avenue	One-Way Stop	18.6	C	20.5	C
6	Hayes Avenue / Shaw Avenue	One-Way Stop	25.5	D	28.6	D
7	Grantland Avenue / Gettysburg Avenue	Two-Way Stop	28.4	D	**35.5**	**E**
		Two-Way Stop (Mitigated)	26.2	D	27.9	D
8	Veterans Boulevard / Gettysburg Avenue	Does Not Exist	N/A	N/A	N/A	N/A
9	Bryan Avenue / Gettysburg Avenue	One-Way Stop	13.0	B	9.5	A
10	Parc West Drive / Ashlan Avenue	Roundabout	4.9	A	5.2	A
11	Grantland Avenue / Ashlan Avenue	Two-Way Stop	16.4	C	24.6	C
12	Bryan Avenue / Ashlan Avenue	All-Way Stop	**51.2**	**F**	9.1	A
		All-Way Stop (Mitigated)	35.0	D	9.1	A
13	Hayes Avenue / Ashlan Avenue	All-Way Stop	7.8	A	8.9	A
14	Polk Avenue / Ashlan Avenue	All-Way Stop	9.3	A	14.1	B
15	Cornelia Avenue / Ashlan Avenue	Signalized	42.7	D	23.9	C
16	Grantland Avenue / Dakota Avenue	Does Not Exist	N/A	N/A	N/A	N/A
17	Grantland Avenue / Shields Avenue	All-Way Stop	11.9	B	9.5	A

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table 3.17-8a
Existing Plus Project (Full Build) Intersection LOS Results

ID	Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Herndon Avenue / SR 99 NB Off-Ramp	Signalized	16.8	B	18.5	B
2	Grantland Avenue / SR 99 SB On-Ramp	Signalized	0.3	A	0.3	A
3	Polk Avenue / Shaw Avenue	Signalized	48.3	D	31.4	C
4	SR 99 SB Ramps / Shaw Avenue	Signalized	14.1	B	13.0	B
5	SR 99 NB Ramps / Shaw Avenue	Signalized	10.7	B	50.5	D
6	SR 99 SB Off-Ramp / Ashlan Avenue	Signalized	19.4	B	24.4	C
7	SR 99 NB Off-Ramp / Ashlan Avenue	Signalized	27.3	C	41.3	D

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table 3.17-9
Existing Plus Project (Full Build) Segment Results

ID	Segment	Limits	Lanes	24-hour Volume	LOS
1	Shaw Avenue	Grantland Avenue and Veterans Boulevard	2	12,388	C
2	Shaw Avenue	Veterans Boulevard and Bryan Avenue	2	12,214	C
3	Shaw Avenue	Bryan Avenue and Hayes Avenue	2	12,554	C
4	Garfield Avenue	Shaw Avenue and Gettysburg Avenue	2	367	C
5	Grantland Avenue	Shaw Avenue and Veterans Boulevard	2	8,675	C
6	Grantland Avenue	Veterans Boulevard and Gettysburg Avenue (WL)	DNE	DNE	DNE
7	Grantland Avenue	Gettysburg Avenue (WL) and Ashlan Avenue	2	9,559	C
8	Grantland Avenue	Ashlan Avenue and Dakota Avenue	2	4,711	C
9	Grantland Avenue	Dakota Avenue and Shields Avenue	2	4,711	C
10	Ashlan Avenue	Grantland Avenue and Bryan Avenue	3	3,665	B
11	Ashlan Avenue	Bryan Avenue and Hayes Avenue	2	4,954	B
12	Ashlan Avenue	Hayes Avenue and Polk Avenue	2	4,395	B

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Under this scenario, the intersections of Grantland Avenue and Gettysburg Avenue and Bryan Avenue and Ashlan Avenue are projected to exceed their LOS threshold during one or both peak periods. To improve the LOS at these intersections, it is recommended that the following improvements be implemented.

- Grantland Avenue / Gettysburg Avenue
    - Modify the southbound left-through-right lane to a left-through lane; and
    - Add a southbound right-turn lane.
- Bryan Avenue / Ashlan Avenue

- Modify the westbound through-right lane to a through lane; and
- Add a westbound right-turn lane.

Under this scenario, all study segments are projected to operate at an acceptable LOS.

Existing Plus Project Mitigation Measures: Refer to the section titled "Project Mitigation Measures and Fair Share Calculations" (starting on page 3.17-41) for the list of traffic/transportation mitigation measures required by the Project. Tables 3.17-13 and 3.17-13a present the Project's fair share percentage impact of the study intersections at which the Project will either cause or contribute to a significant impact which corresponds to the recommended improvements listed under the Cumulative Year 2035 With Project Scenario. The Project Applicant will be required to mitigate their fair share percentage of these impacts as identified in Mitigation Measures TRA-1 and TRA-2.

Near Term Plus Project Scenario

Approved and Pipeline Projects

The Near Term Project scenario includes the anticipated traffic impacts of approved (but not built) and pipeline projects. These are projects that are either under construction, built but not fully occupied, are not built but have final site development review (SDR) approval, or for which the lead agency or responsible agencies have knowledge of. The City of Fresno, County of Fresno and Caltrans staff were consulted throughout the preparation of the Traffic Impact Assessment regarding approved and/or known projects that could potentially impact the study intersections. JLB staff conducted a reconnaissance of the surrounding area to confirm the Near Term Projects. Subsequently, it was agreed that the projects listed in Table XVI of Appendix D were approved, near approval, or in the pipeline within the proximity of the proposed Project.

The trip generation listed in Table XVI of Appendix D is that which is anticipated to be added to the streets and highways by these projects between the time of the preparation of this report and five years after buildout of the proposed Project. As shown in Table XVI of Appendix D, the total trip generation for the Near Term Projects is 49,295 daily trips, 4,317 AM peak hour trips and 4,846 PM peak hour trips. Figure 10 of Appendix D illustrates the location of the approved, near approval, or pipeline projects and their combined trip assignment to the study intersections and segments under the Near Term plus Project (Buildout) Traffic Conditions scenario.

Near Term Plus Project Scenario

The Near Term plus Project (Buildout) Traffic Conditions scenario assumes that Gettysburg Avenue exists between Garfield Avenue and Grantland Avenue, that Ashlan Avenue exists between Garfield Avenue and Grantland Avenue, that Garfield Avenue exists between Gettysburg Avenue and Ashlan Avenue, and that Gettysburg Avenue exists east of Bryan Avenue. Figure 11 of Appendix D illustrates the Near Term plus Project (Buildout) turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Near Term plus Project (Buildout) Traffic Conditions scenario are provided in Appendix J of Appendix D. Tables 3.17-10 and 3.17-10a present a summary of the Near Term plus Project (Buildout) peak hour LOS at the study intersections, while Table 3.17-11 presents a summary of the Near Term plus Project (Buildout) LOS for the study segments.

Table 3.17-10
Near Term Plus Project Intersection LOS Results

ID	Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Grantland Avenue / Barstow Avenue	Two-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	20.1	C	17.0	B
2	Garfield Avenue / Shaw Avenue	Two-Way Stop	23.0	C	13.6	B
3	Grantland Avenue / Shaw Avenue	Signalized	**99.6**	**F**	**74.9**	**E**
		Signalized (Mitigated)	41.8	D	48.5	D
4	Veterans Boulevard / Shaw Avenue	Does Not Exist	N/A	N/A	N/A	N/A
5	Bryan Avenue / Shaw Avenue	One-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	41.8	D	22.6	C
6	Hayes Avenue / Shaw Avenue	One-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	32.7	C	28.3	C
7	Grantland Avenue / Gettysburg Avenue	Two-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	46.5	D	40.9	D
8	Veterans Boulevard / Gettysburg Avenue	Does Not Exist	N/A	N/A	N/A	N/A
9	Bryan Avenue / Gettysburg Avenue	Two-Way Stop	24.9	C	13.8	B
10	Parc West Drive / Ashlan Avenue	Roundabout	4.9	A	5.3	A
11	Grantland Avenue / Ashlan Avenue	Two-Way Stop	**>120.0**	**F**	**112.9**	**F**
		Signalized (Mitigated)	53.2	D	27.1	C
12	Bryan Avenue / Ashlan Avenue	All-Way Stop	**>120.0**	**F**	13.3	B
		Signalized (Mitigated)	41.2	D	31.7	C
13	Hayes Avenue / Ashlan Avenue	All-Way Stop	10.1	B	14.2	B
14	Polk Avenue / Ashlan Avenue	All-Way Stop	11.4	B	28.7	D
15	Cornelia Avenue / Ashlan Avenue	Signalized	53.9	D	25.3	C
16	Grantland Avenue / Dakota Avenue	Does Not Exist	N/A	N/A	N/A	N/A
17	Grantland Avenue / Shields Avenue	All-Way Stop	20.8	C	12.1	B

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table 3.17-10a
Near Term Plus Project Intersection LOS Results

ID	Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Herndon Avenue / SR 99 NB Off-Ramp	Signalized	32.2	C	25.4	C
2	Grantland Avenue / SR 99 SB On-Ramp	Signalized	0.2	A	0.3	A
3	Polk Avenue / Shaw Avenue	Signalized	**78.0**	**E**	**73.2**	**E**
		Signalized (Mitigated)	48.8	D	54.4	D
4	SR 99 SB Ramps / Shaw Avenue	Signalized	17.7	B	21.6	C
5	SR 99 NB Ramps / Shaw Avenue	Signalized	28.7	C	31.2	C
6	SR 99 SB Off-Ramp / Ashlan Avenue	Signalized	25.4	C	22.1	C
7	SR 99 NB Off-Ramp / Ashlan Avenue	Signalized	44.5	D	27.2	C

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table 3.17-11
Near Term Plus Project Segment LOS Results

ID	Segment	Limits	Lanes	24-hour Volume	LOS
1	Shaw Avenue	Grantland Avenue and Veterans Boulevard	2	16,118	D
2	Shaw Avenue	Veterans Boulevard and Bryan Avenue	2	15,944	D
3	Shaw Avenue	Bryan Avenue and Hayes Avenue	2	16,804	D
4	Garfield Avenue	Shaw Avenue and Gettysburg Avenue	2	367	C
5	Grantland Avenue	Shaw Avenue and Veterans Boulevard	2	16,065	D
6	Grantland Avenue	Veterans Boulevard and Gettysburg Avenue (WL)	DNE	DNE	DNE
7	Grantland Avenue	Gettysburg Avenue (WL) and Ashlan Avenue	2	13,919	D
8	Grantland Avenue	Ashlan Avenue and Dakota Avenue	2	8,141	C
9	Grantland Avenue	Dakota Avenue and Shields Avenue	2	8,141	C
10	Ashlan Avenue	Grantland Avenue and Bryan Avenue	3	8,475	C
11	Ashlan Avenue	Bryan Avenue and Hayes Avenue	2	7,714	C
12	Ashlan Avenue	Hayes Avenue and Polk Avenue	2	6,595	B

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Under this scenario, the intersections of Grantland Avenue and Barstow Avenue, Grantland Avenue and Shaw Avenue, Bryan Avenue and Shaw Avenue, Hayes Avenue and Shaw Avenue, Grantland Avenue and Gettysburg Avenue, Grantland Avenue and Ashlan Avenue, Polk Avenue and Shaw Avenue and Bryan Avenue and Ashlan Avenue are projected to exceed their LOS threshold during one or both peak periods. To improve the LOS at these intersections, it is recommended that the following improvements be implemented.

- Grantland Avenue / Barstow Avenue
  - Add an eastbound left-turn lane;
  - Modify the eastbound left-through-right lane to a through-right lane;

- Add a westbound left-turn lane;
- Modify the westbound left-through-right lane to a through-right lane;
- Signalize the intersection with protective left-turn phasing on all approaches; and
- Modify the intersection to accommodate the added lanes.

• Grantland Avenue / Shaw Avenue

- Modify the westbound through-right lane to a through lane;
- Add a westbound right-turn lane;
- Modify the northbound through-right lane to a through lane;
- Add a northbound right-turn lane;
- Modify the traffic signal to implement overlap phasing of the westbound right-turn with the southbound left-turn phase; and
- Modify the traffic signal to accommodate the added lanes.

• Bryan Avenue / Shaw Avenue

- Signalize the intersection with protective left-turn phasing on all approaches.

• Hayes Avenue / Shaw Avenue

- Add a westbound left-turn lane;
- Modify the westbound left-through lane to a through lane;
- Modify the northbound left-right lane to a left-turn lane;
- Add a northbound right-turn lane;
- Signalize the intersection with protective left-turn phasing on all approaches; and
- Modify the intersection to accommodate the added lanes.

• Grantland Avenue / Gettysburg Avenue

- Add a westbound left-turn lane;
- Modify the westbound left-through-right lane to a through-right lane;
- Add a southbound left-turn lane;
- Modify the southbound left-through-right lane to a through lane;
- Add a second southbound through lane with a receiving lane south of Gettysburg Avenue;
- Add a southbound right-turn lane;
- Signalize the intersection with protective left-turn phasing on all approaches; and
- Modify the intersection to accommodate the added lanes.

• Grantland Avenue / Ashlan Avenue

- Modify the northbound through-right lane to a right-turn lane; and
- Signalize the intersection with protective left-turn phasing on all approaches.

• Bryan Avenue / Ashlan Avenue

- Modify the westbound through-right lane to a through lane;
- Add a westbound right turn lane; and
- Signalize the intersection with protective left-turn phasing on all approaches.

• Polk Avenue and Shaw Avenue

- Modify the northbound through-right lane to a through lane;
- Add a northbound right-turn lane;
- Prohibit westbound to eastbound U-turn movements; and
- Modify the traffic signals to implement overlap phasing of the northbound right-turn with the westbound left-turn phase and accommodate the added lanes.

It should be noted that between the Existing Traffic Conditions and the Near Term plus Project (Buildout) Traffic Conditions scenarios, the Project accounts for 13.9 percent of the daily trips, 12.6 percent of the AM peak hour trips and 14.7 percent of the PM peak hour trips of growth in traffic, while the rest can be attributable to the Near Term Projects. Therefore, one can deduce that the majority of the mitigation measures presented under this scenario may not be necessary immediately upon completion of the proposed Project (Buildout). However, if all of the Near Term Projects are completed close to the completion date of the proposed Project (Buildout), the detailed recommended improvements presented under this scenario may be necessary in order to improve the LOS to the City's target LOS threshold.

Under this scenario, all study segments are projected to operate at an acceptable LOS.

Near Term Plus Project Mitigation Measures: Refer to the section titled "Project Mitigation Measures and Fair Share Calculations" (starting on page 3.17-41) for the list of traffic/transportation mitigation measures required by the Project. Tables 3.17-13 and 3.17-13a present the Project's fair share percentage impact of the study intersections at which the Project will either cause or contribute to a significant impact which corresponds to the recommended improvements listed under the Cumulative Year 2035 With Project Scenario. The Project Applicant will be required to mitigate their fair share percentage of these impacts as identified in Mitigation Measures TRA-1 and TRA-2.

Cumulative Year 2035 Plus Project Scenario

The Cumulative Year 2035 plus Project (Buildout) Traffic Conditions scenario assumes that Gettysburg Avenue exists between Garfield Avenue and Grantland Avenue, that Ashlan Avenue exists between Garfield Avenue and Grantland Avenue, that Garfield Avenue exists between Gettysburg Avenue and Ashlan Avenue, that Gettysburg Avenue exists between Bryan Avenue and Hayes Avenue, that Gettysburg Avenue exists between Bryan Avenue and Hayes Avenue, that Veterans Boulevard exists north of Grantland Avenue and that Dakota Avenue exists east of Grantland Avenue. Figure 14 of Appendix D illustrates the Cumulative Year 2035 plus Project (Buildout) turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Cumulative Year 2035 plus Project (Buildout) Traffic Conditions scenario are provided in Appendix L of Appendix D. Tables 3.17-11 and 3.17-11a present a summary of the Cumulative Year 2035 plus Project (Buildout) peak hour LOS at the study intersections, while Table 3.17-12 presents a summary of the Cumulative year 2035 plus Project (Buildout) LOS for the study segments.

Table 3.17-11
Cumulative Year 2035 Plus Project Intersection LOS Results

ID	Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Grantland Avenue / Barstow Avenue	Two-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	36.1	D	20.8	C
2	Garfield Avenue / Shaw Avenue	Two-Way Stop	30.6	D	29.3	D
3	Grantland Avenue / Shaw Avenue	Signalized	54.4	D	**62.5**	**E**
		Signalized (Mitigated)	47.8	D	46.3	D
4	Veterans Boulevard / Shaw Avenue	Signalized	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	39.1	D	53.2	D
5	Bryan Avenue / Shaw Avenue	Two-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	18.6	B	20.2	C
6	Hayes Avenue / Shaw Avenue	One-Way Stop	**>120.0**	**F**	**61.3**	**F**
		Signalized (Mitigated)	21.6	C	32.7	C
7	Grantland Avenue / Gettysburg Avenue	Two-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	50.3	D	35.3	D
8	Veterans Boulevard / Gettysburg Avenue	Signalized	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	43.6	D	32.7	C
9	Bryan Avenue / Gettysburg Avenue	Two-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	41.6	D	21.5	C
10	Parc West Drive / Ashlan Avenue	Roundabout	4.7	A	5.2	A
11	Grantland Avenue / Ashlan Avenue	Two-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	38.5	D	33.1	C
12	Bryan Avenue / Ashlan Avenue	All-Way Stop	**>120.0**	**F**	**53.9**	**F**
		Signalized (Mitigated)	30.3	C	28.9	C
13	Hayes Avenue / Ashlan Avenue	All-Way Stop	24.9	C	22.0	C
14	Polk Avenue / Ashlan Avenue	All-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	36.6	D	31.0	C
15	Cornelia Avenue / Ashlan Avenue	Signalized	39.8	D	30.6	C
16	Grantland Avenue / Dakota Avenue	One-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	19.0	B	16.4	B
17	Grantland Avenue / Shields Avenue	All-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	55.0	D	44.2	D

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls.
LOS for two-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table 3.17-11a
Cumulative Year 2035 Plus Project Intersection LOS Results

ID	Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Herndon Avenue / SR 99 NB Off-Ramp	Signalized	27.9	C	35.9	D
2	Grantland Avenue / SR 99 SB On-Ramp	Signalized	0.2	A	0.2	A
3	Polk Avenue / Shaw Avenue	Signalized	**118.4**	**F**	**>120.0**	**F**
		Signalized (Improved)	54.8	D	46.6	D
4	SR 99 SB Ramps / Shaw Avenue	Signalized	**74.0**	**E**	**95.8**	**F**
		Signalized (Improved)	17.7	B	46.9	C
5	SR 99 NB Ramps / Shaw Avenue	Signalized	34.3	C	**106.3**	**F**
		Signalized (Improved)	23.8	C	41.4	D
6	SR 99 SB Off-Ramp / Ashlan Avenue	Signalized	28.6	C	35.6	D
7	SR 99 NB Off-Ramp / Ashlan Avenue	Signalized	32.1	C	**101.9**	**F**
		Signalized (Improved)	31.7	C	46.4	D

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls.
LOS for two-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table 3.17-12
Cumulative Year 2035 Plus Project Segment LOS Results

ID	Segment	Limits	Lanes	24-hour Volume	LOS
1	Shaw Avenue	Grantland Avenue and Veterans Boulevard	2	14,924	D
2	Shaw Avenue	Veterans Boulevard and Bryan Avenue	2	25,384	**F**
			4 (Mitigated)		C
3	Shaw Avenue	Bryan Avenue and Hayes Avenue	2	21,960	**F**
			4 (Mitigated)		C
4	Garfield Avenue	Shaw Avenue and Gettysburg Avenue	2	958	C
5	Grantland Avenue	Shaw Avenue and Veterans Boulevard	2	11,834	C
6	Grantland Avenue	Veterans Boulevard and Gettysburg Avenue (WL)	2	31,535	**F**
			4 (Mitigated)		D
7	Grantland Avenue	Gettysburg Avenue (WL) and Ashlan Avenue	2	28,165	**F**
			4 (Mitigated)		C
8	Grantland Avenue	Ashlan Avenue and Dakota Avenue	2	23,828	**F**
			4 (Mitigated)		C
9	Grantland Avenue	Dakota Avenue and Shields Avenue	2	25,698	**F**
			4 (Mitigated)		C
10	Ashlan Avenue	Grantland Avenue and Bryan Avenue	3	12,143	C
11	Ashlan Avenue	Bryan Avenue and Hayes Avenue	2	10,762	C
12	Ashlan Avenue	Hayes Avenue and Polk Avenue	2	8,394	C

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Under this scenario, the intersections of Grantland Avenue and Barstow Avenue, Grantland Avenue and Shaw Avenue, Veterans Boulevard and Shaw Avenue, Bryan Avenue and Shaw Avenue, Hayes Avenue and Shaw Avenue, Grantland Avenue and Gettysburg Avenue, Veterans Boulevard and Gettysburg Avenue, Bryan Avenue and Gettysburg Avenue, Grantland Avenue and Ashlan Avenue, Bryan Avenue and Ashlan Avenue, Polk Avenue and Ashlan

Avenue, Grantland Avenue and Dakota Avenue, Grantland Avenue and Shields Avenue, Polk Avenue and Shaw Avenue, State Route 99 Southbound Ramps and Shaw Avenue, State Route 99 Northbound Ramps and Shaw Avenue, and State Route 99 Northbound Off-Ramp and Ashlan Avenue are projected to exceed their LOS threshold during one or both peak periods. To improve the LOS at these intersections, it is recommended that the following improvements be implemented.

- Grantland Avenue / Barstow Avenue
    - Add an eastbound left-turn lane;
    - Modify the eastbound left-through-right lane to a through-right lane;
    - Add a westbound left-turn lane;
    - Modify the westbound left-through-right lane to a through-right lane;
    - Signalize the intersection with protective left-turn phasing on all approaches; and
    - Modify the intersection to accommodate the added lanes.
- Grantland Avenue / Shaw Avenue
    - Modify the westbound through-right lane to a through lane;
    - Add a westbound trap right-turn lane;
    - Add a second southbound left-turn lane with a receiving lane east of Grantland Avenue;
    - Modify the traffic signal to implement overlap phasing of the westbound right-turn with the southbound left-turn phase;
    - Prohibit southbound to northbound U-turn movements; and
    - Modify the traffic signal to accommodate the added lanes.
- Veterans Boulevard / Shaw Avenue
    - Modify the eastbound through-right lane to a through lane;
    - Add a second eastbound through lane with a receiving lane east of Veterans Boulevard;

- Add an eastbound right-turn lane;
- Modify the westbound through-right lane to a through lane;
- Add a second westbound through lane with a receiving lane west of Veterans Boulevard;
- Add a westbound right-turn lane;
- Modify the northbound through-right lane to a through lane;
- Add a third northbound through lane with a receiving lane north of Shaw Avenue;
- Add a northbound right-turn lane;
- Add a second southbound left-turn lane;
- Add a third southbound through lane with a receiving lane south of Shaw Avenue;
- Modify the traffic signal to implement overlap phasing of the westbound right-turn with the southbound left-turn phase;
- Prohibit southbound to northbound U-turn movements; and
- Modify the traffic signal to accommodate the added lanes.

- Bryan Avenue / Shaw Avenue
  - Modify the eastbound through-right lane to a through lane;
  - Add a second eastbound through lane with a receiving lane east of Bryan Avenue;
  - Add an eastbound right-turn lane;
  - Add a second westbound through lane with a receiving lane west of Bryan Avenue;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.

- Hayes Avenue / Shaw Avenue
    - Add a westbound left-turn lane;
    - Modify the westbound left-through lane to a through lane;
    - Modify the northbound left-right lane to a left-turn lane;
    - Add a northbound right-turn lane;
    - Signalize the intersection with protective left-turn phasing on all approaches; and
    - Modify the intersection to accommodate the added lanes.
- Grantland Avenue / Gettysburg Avenue
    - Add a westbound left-turn lane;
    - Modify the westbound left-through-right lane to a through-right lane;
    - Add second and third northbound through lanes with receiving lanes north of Gettysburg Avenue;
    - Add a southbound left-turn lane;
    - Modify the southbound left-through-right lane to a through lane;
    - Add a second southbound through lane with a receiving lane south of Gettysburg Avenue;
    - Add a southbound right-turn lane;
    - Signalize the intersection with protective left-turn phasing on all approaches; and
    - Modify the intersection to accommodate the added lanes.
- Veterans Boulevard / Gettysburg Avenue
    - Modify the eastbound through-right lane to a through lane;
    - Add an eastbound right-turn lane;
    - Modify the westbound through-right lane to a through lane;

- Add a westbound right-turn lane;
- Add second and third northbound through lanes with receiving lanes north of Gettysburg Avenue;
- Add a second southbound through lane with a receiving lane south of Gettysburg Avenue;
- Implement overlap phasing of the westbound right-turn with the southbound left-turn phase; and
- Modify the traffic signal to accommodate the added lanes.

- Bryan Avenue and Gettysburg Avenue
  - Modify the westbound through-right lane to a through lane;
  - Add a westbound right-turn lane;
  - Modify the northbound through-right lane to a through lane;
  - Add a northbound right-turn lane;
  - Modify the southbound through-right lane to a through lane;
  - Add a southbound right-turn lane;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.
- Grantland Avenue / Ashlan Avenue
  - Modify the northbound through-right lane to a right-turn lane;
  - Modify the southbound right-turn lane to a through-right lane with a receiving lane south of Ashlan Avenue;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.

- Bryan Avenue / Ashlan Avenue
    - Modify the westbound through-right lane to a through lane;
    - Add a westbound right-turn lane;
    - Signalize the intersection with protective left-turn phasing on all approaches; and
    - Modify the intersection to accommodate the added lane.
- Polk Avenue / Ashlan Avenue
    - Modify the westbound through-right lane to a through lane;
    - Add a westbound right-turn lane;
    - Modify the northbound through-right lane to a through lane;
    - Add a northbound right-turn lane;
    - Modify the southbound through-right lane to a through lane;
    - Add a southbound right-turn lane;
    - Signalize the intersection with protective left-turn phasing on all approaches; and
    - Modify the intersection to accommodate the added lanes.
- Grantland Avenue / Dakota Avenue
    - Modify the northbound right-turn lane to a through-right lane with a receiving lane north of Dakota Avenue;
    - Add a second southbound through lane with a receiving lane south of Dakota Avenue;
    - Signalize the intersection with protective left-turn phasing on all approaches; and
    - Modify the intersection to accommodate the added lanes.
- Grantland Avenue / Shields Avenue

- Add an eastbound left-turn lane;
- Modify the eastbound left-through-right lane to a through-right lane;
- Add a westbound left-turn lane;
- Modify the westbound left-through-right lane to a through lane;
- Add a westbound right-turn lane;
- Add a northbound left-turn lane;
- Modify the northbound left-through-right lane to a through lane;
- Add a northbound through-right lane with a receiving lane north of Shields Avenue;
- Add a southbound left-turn lane;
- Modify the southbound left-through-right lane to a through lane;
- Add a second southbound through lane with a receiving lane south of Shields Avenue;
- Add a southbound right-turn lane;
- Signalize the intersection with protective left-turn phasing on all approaches; and
- Modify the intersection to accommodate the added lanes.

• Polk Avenue and Shaw Avenue

- Add a second westbound through lane with a receiving lane west of Polk Avenue;
- Modify the westbound trap right-turn lane to a standard right-turn lane (see Queuing Analysis for recommended storage capacity);
- Modify the northbound through-right lane to a through lane;
- Add a northbound right-turn lane;
- Prohibit westbound to eastbound U-turn movements; and

- Modify the traffic signal to implement overlap phasing of the northbound right-turn with the westbound left-turn phase and accommodate the added lanes.

- State Route 99 Southbound Ramps and Shaw Avenue
  - Add a second eastbound through lane with a receiving lane east of State Route 99 Southbound Ramps;
  - Modify the eastbound trap right-turn lane to a standard right-turn lane (see Queuing Analysis for recommended storage capacity);
  - Add a second westbound left-turn lane with a receiving lane south of Shaw Avenue; and
  - Modify the traffic signal to accommodate the added lanes.
- State Route 99 Northbound Ramps and Shaw Avenue
  - Add a second eastbound through lane with a receiving lane east of State Route 99 Northbound Ramps; and
  - Modify the traffic signal to accommodate the added lanes.
- State Route 99 Northbound Ramps and Ashlan Avenue
  - Add a second northbound left-turn lane;
  - Modify the northbound left-through-right lane to a through-right lane; and
  - Modify the traffic signal to implement protective left-turn phasing in all directions and overlap phasing of the southbound right-turn with the eastbound left-turn phase and accommodate the added lanes.
  - It is worth noting that improvements to the State Route 99 Northbound Off-Ramp and Ashlan Avenue may not be necessary if the State Route 99 and Shaw Avenue Interchange is upgraded. However, if improvements to the State Route 99 and Shaw Avenue Interchange are not implemented, the detailed recommended improvements presented under this scenario may be necessary in order to improve the LOS. Therefore, it is recommended that the City and Caltrans monitor the State Route 99 Northbound Off-Ramp to Ashlan Avenue.

Under this scenario, the segments of Shaw Avenue between Veterans Boulevard and Hayes Avenue and the segments of Grantland Avenue between Veterans Boulevard and Shields Avenue are projected to operate at an unacceptable LOS. To improve the LOS of these segments, it is recommended that the following improvements be implemented.

- Shaw Avenue between Veterans Boulevard and Bryan Avenue
  - Modify Shaw Avenue to accommodate two lanes in each direction
- Shaw Avenue between Bryan Avenue and Hayes Avenue
  - Modify Shaw Avenue to accommodate two lanes in each direction
- Grantland Avenue between Veterans Boulevard and Gettysburg Avenue (WL)
  - Modify Grantland Avenue to accommodate two lanes in each direction
- Grantland Avenue between Gettysburg Avenue (WL) and Ashlan Avenue
  - Modify Grantland Avenue to accommodate two lanes in each direction
- Grantland Avenue between Ashlan Avenue and Dakota Avenue
  - Modify Grantland Avenue to accommodate two lanes in each direction
- Grantland Avenue between Dakota Avenue and Shields Avenue
  - Modify Grantland Avenue to accommodate two lanes in each direction

Cumulative Year 2035 Plus Project Mitigation Measures: Refer to the section titled "Project Mitigation Measures and Fair Share Calculations" (starting on page 3.17-41) for the list of traffic/transportation mitigation measures required by the Project. Tables 3.17-13 and 3.17-13a present the Project's fair share percentage impact of the study intersections at which the Project will either cause or contribute to a significant impact which corresponds to the recommended improvements listed under the Cumulative Year 2035 With Project Scenario. The Project Applicant will be required to mitigate their fair share percentage of these impacts as identified in Mitigation Measures TRA-1 and TRA-2.

Project Mitigation Measures and Fair Share Calculations

The Project's fair share percentage impact to study intersections projected to fall below their LOS threshold and which are not covered by an existing impact fee program is provided in Tables 3.17-13 and 3.17-13a. The Project's fair share percentage impacts were calculated pursuant to the Caltrans Guide for the Preparation of Traffic Impact Studies. The Project's pro-rata fair shares were calculated utilizing the Existing volumes, 2035 Project Only Trips and Cumulative Year 2035 plus Project volumes. Since the critical peak period for the study facilities was determined to be during the AM peak, the AM peak volumes are utilized to determine the Project's pro-rata fair share. The recommended improvements are as follows:

- Grantland Avenue / Barstow Avenue
    - Add an eastbound left-turn lane;
    - Modify the eastbound left-through-right lane to a through-right lane;
    - Add a westbound left-turn lane;
    - Modify the westbound left-through-right lane to a through-right lane;
    - Signalize the intersection with protective left-turn phasing on all approaches; and
    - Modify the intersection to accommodate the added lanes.
- Grantland Avenue / Shaw Avenue
    - Modify the westbound through-right lane to a through lane;
    - Add a westbound trap right-turn lane;
    - Add a second southbound left-turn lane with a receiving lane east of Grantland Avenue;
    - Modify the traffic signal to implement overlap phasing of the westbound right-turn with the southbound left-turn phase;
    - Prohibit southbound to northbound U-turn movements; and
    - Modify the traffic signal to accommodate the added lanes.
- Veterans Boulevard / Shaw Avenue

- Modify the eastbound through-right lane to a through lane;
- Add a second eastbound through lane with a receiving lane east of Veterans Boulevard;
- Add an eastbound right-turn lane;
- Modify the westbound through-right lane to a through lane;
- Add a second westbound through lane with a receiving lane west of Veterans Boulevard;
- Add a westbound right-turn lane;
- Modify the northbound through-right lane to a through lane;
- Add a third northbound through lane with a receiving lane north of Shaw Avenue;
- Add a northbound right-turn lane;
- Add a second southbound left-turn lane;
- Add a third southbound through lane with a receiving lane south of Shaw Avenue;
- Modify the traffic signal to implement overlap phasing of the westbound right-turn with the southbound left-turn phase;
- Prohibit southbound to northbound U-turn movements; and
- Modify the traffic signal to accommodate the added lanes.

- Bryan Avenue / Shaw Avenue
  - Modify the eastbound through-right lane to a through lane;
  - Add a second eastbound through lane with a receiving lane east of Bryan Avenue;
  - Add an eastbound right-turn lane;
  - Add a second westbound through lane with a receiving lane west of Bryan Avenue;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.

- Hayes Avenue / Shaw Avenue
    - Add a westbound left-turn lane;
    - Modify the westbound left-through lane to a through lane;
    - Modify the northbound left-right lane to a left-turn lane;
    - Add a northbound right-turn lane;
    - Signalize the intersection with protective left-turn phasing on all approaches; and
    - Modify the intersection to accommodate the added lanes.
- Grantland Avenue / Gettysburg Avenue
    - Add a westbound left-turn lane;
    - Modify the westbound left-through-right lane to a through-right lane;
    - Add second and third northbound through lanes with receiving lanes north of Gettysburg Avenue;
    - Add a southbound left-turn lane;
    - Modify the southbound left-through-right lane to a through lane;
    - Add a second southbound through lane with a receiving lane south of Gettysburg Avenue;
    - Add a southbound right-turn lane;
    - Signalize the intersection with protective left-turn phasing on all approaches; and
    - Modify the intersection to accommodate the added lanes.
- Veterans Boulevard / Gettysburg Avenue
    - Modify the eastbound through-right lane to a through lane;
    - Add an eastbound right-turn lane;
    - Modify the westbound through-right lane to a through lane;
    - Add a westbound right-turn lane;

  - Add second and third northbound through lanes with receiving lanes north of Gettysburg Avenue;
  - Add a second southbound through lane with a receiving lane south of Gettysburg Avenue;
  - Implement overlap phasing of the westbound right-turn with the southbound left-turn phase; and
  - Modify the traffic signal to accommodate the added lanes.
- Bryan Avenue and Gettysburg Avenue
  - Modify the westbound through-right lane to a through lane;
  - Add a westbound right-turn lane;
  - Modify the northbound through-right lane to a through lane;
  - Add a northbound right-turn lane;
  - Modify the southbound through-right lane to a through lane;
  - Add a southbound right-turn lane;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.
- Grantland Avenue / Ashlan Avenue
  - Modify the northbound through-right lane to a right-turn lane;
  - Modify the southbound right-turn lane to a through-right lane with a receiving lane south of Ashlan Avenue;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.
- Bryan Avenue / Ashlan Avenue
  - Modify the westbound through-right lane to a through lane;
  - Add a westbound right-turn lane;

  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lane.
- Polk Avenue / Ashlan Avenue
  - Modify the westbound through-right lane to a through lane;
  - Add a westbound right-turn lane;
  - Modify the northbound through-right lane to a through lane;
  - Add a northbound right-turn lane;
  - Modify the southbound through-right lane to a through lane;
  - Add a southbound right-turn lane;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.
- Grantland Avenue / Dakota Avenue
  - Modify the northbound right-turn lane to a through-right lane with a receiving lane north of Dakota Avenue;
  - Add a second southbound through lane with a receiving lane south of Dakota Avenue;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.
- Grantland Avenue / Shields Avenue
  - Add an eastbound left-turn lane;
  - Modify the eastbound left-through-right lane to a through-right lane;
  - Add a westbound left-turn lane;
  - Modify the westbound left-through-right lane to a through lane;
  - Add a westbound right-turn lane;

  - Add a northbound left-turn lane;
  - Modify the northbound left-through-right lane to a through lane;
  - Add a northbound through-right lane with a receiving lane north of Shields Avenue;
  - Add a southbound left-turn lane;
  - Modify the southbound left-through-right lane to a through lane;
  - Add a second southbound through lane with a receiving lane south of Shields Avenue;
  - Add a southbound right-turn lane;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.
- Polk Avenue and Shaw Avenue
  - Add a second westbound through lane with a receiving lane west of Polk Avenue;
  - Modify the westbound trap right-turn lane to a standard right-turn lane (see Queuing Analysis for recommended storage capacity);
  - Modify the northbound through-right lane to a through lane;
  - Add a northbound right-turn lane;
  - Prohibit westbound to eastbound U-turn movements; and
  - Modify the traffic signal to implement overlap phasing of the northbound right-turn with the westbound left-turn phase and accommodate the added lanes.
- State Route 99 Southbound Ramps and Shaw Avenue
  - Add a second eastbound through lane with a receiving lane east of State Route 99 Southbound Ramps;
  - Modify the eastbound trap right-turn lane to a standard right-turn lane (see Queuing Analysis for recommended storage capacity);

  - Add a second westbound left-turn lane with a receiving lane south of Shaw Avenue; and
  - Modify the traffic signal to accommodate the added lanes.
- State Route 99 Northbound Ramps and Shaw Avenue
  - Add a second eastbound through lane with a receiving lane east of State Route 99 Northbound Ramps; and
  - Modify the traffic signal to accommodate the added lanes.
- State Route 99 Northbound Ramps and Ashlan Avenue
  - Add a second northbound left-turn lane;
  - Modify the northbound left-through-right lane to a through-right lane; and
  - Modify the traffic signal to implement protective left-turn phasing in all directions and overlap phasing of the southbound right-turn with the eastbound left-turn phase and accommodate the added lanes.
  - It is worth noting that improvements to the State Route 99 Northbound Off-Ramp and Ashlan Avenue may not be necessary if the State Route 99 and Shaw Avenue Interchange is upgraded. However, if improvements to the State Route 99 and Shaw Avenue Interchange are not implemented, the detailed recommended improvements presented under this scenario may be necessary in order to improve the LOS. Therefore, it is recommended that the City and Caltrans monitor the State Route 99 Northbound Off-Ramp to Ashlan Avenue.

Under this scenario, the segments of Shaw Avenue between Veterans Boulevard and Hayes Avenue and the segments of Grantland Avenue between Veterans Boulevard and Shields Avenue are projected to operate at an unacceptable LOS. To improve the LOS of these segments, it is recommended that the following improvements be implemented.

- Shaw Avenue between Veterans Boulevard and Bryan Avenue
  - Modify Shaw Avenue to accommodate two lanes in each direction
- Shaw Avenue between Bryan Avenue and Hayes Avenue
  - Modify Shaw Avenue to accommodate two lanes in each direction

- Grantland Avenue between Veterans Boulevard and Gettysburg Avenue (WL)
    - Modify Grantland Avenue to accommodate two lanes in each direction
- Grantland Avenue between Gettysburg Avenue (WL) and Ashlan Avenue
    - Modify Grantland Avenue to accommodate two lanes in each direction
- Grantland Avenue between Ashlan Avenue and Dakota Avenue
    - Modify Grantland Avenue to accommodate two lanes in each direction
- Grantland Avenue between Dakota Avenue and Shields Avenue
    - Modify Grantland Avenue to accommodate two lanes in each direction

It is recommended that the Project contribute its equitable fair share as listed in Tables 3.17-13 and 3.17-13a for the future improvements necessary to maintain an acceptable LOS. However, fair share contributions should only be made for those facilities, or portion thereof, currently not funded by the responsible agencies roadway impact fee program(s) or grant funded projects, as appropriate. For those improvements not presently covered by local and regional roadway impact fee programs or grant funding, it is recommended that the Project contribute its equitable fair share. Payment of the Project's equitable fair share in addition to the local and regional impact fee programs would satisfy the Project's traffic mitigation measures.

Table 3.17-13
Project Fair Share of Future Roadway Improvements

ID	Intersection	Existing Traffic Volumes (PM Peak)	Cumulative Year 2035 plus Project (Buildout) Traffic Volumes (PM Peak)	2035 Project Only Trips (Buildout) (PM Peak)	Project's Fair Share (%)
1	Grantland Avenue / Barstow Avenue	759	1,644	13	1.47%
3	Grantland Avenue / Shaw Avenue	1,155	2,298	33	2.89%
4	Veterans Boulevard / Shaw Avenue	0	5,383	423	7.86%
5	Bryan Avenue / Shaw Avenue	888	2,754	242	12.97%
6	Hayes Avenue / Shaw Avenue	1,050	2,539	234	15.72%
7	Grantland Avenue / Gettysburg Avenue	382	3,055	635	23.76%
8	Veterans Boulevard / Gettysburg Avenue	0	3,784	501	13.24%
9	Bryan Avenue / Gettysburg Avenue	193	1,948	37	2.11%
11	Grantland Avenue / Ashlan Avenue	514	2,836	478	20.59%
12	Bryan Avenue / Ashlan Avenue	354	1,675	78	5.90%
14	Polk Avenue / Ashlan Avenue	923	2,212	49	3.80%
16	Grantland Avenue / Dakota Avenue	0	2,537	217	8.55%
17	Grantland Avenue / Shields Avenue	428	2,601	207	9.53%

Note: Project Fair Share = ((2035 Project Only Trips (Buildout)) / (Cumulative Year 2035 + Project (Buildout) Traffic Volumes - Existing Traffic Volumes)) x 100

Table 3.17-13a
Project Fair Share of Future Roadway Improvements

ID	Intersection	Existing Traffic Volumes (PM Peak)	Cumulative Year 2035 plus Project (Buildout) Traffic Volumes (PM Peak)	2035 Project Only Trips (Buildout) (PM Peak)	Project's Fair Share (%)
3	Polk Avenue / Shaw Avenue	2,113	4,231	230	10.86
4	SR 99 SB Ramps / Shaw Avenue	2,493	4,831	230	9.84
5	SR 99 NB Ramps / Shaw Avenue	2,670	4,780	176	8.34
7	SR 99 NB Off-Ramp / Ashlan Avenue	3,725	4,362	33	5.18

Note: Project Fair Share = ((2035 Project Only Trips (Buildout)) / (Cumulative Year 2035 + Project (Buildout) Traffic Volumes - Existing Traffic Volumes)) x 100

Mitigation Measures: The Project will be required to construct public road frontage as well as all on-site roadways to City of Fresno standards. Tables 3.17-13 and 3.17-13a present the Project's fair share percentage impact of the study intersections at which the Project will either cause or contribute to a significant impact which corresponds to the recommended improvements listed under the Cumulative Year 2035 With Project Scenario. The Project

Applicant will be required to mitigate their fair share percentage of these impacts as identified in Mitigation Measures TRA-1 and TRA-2.

TRA-1 The Project shall pay into applicable transportation fee programs. These include a Fresno Major Street Impact Fee (FMSI), a Traffic Signal Mitigation Impact Fee (TSMI) and a Regional Transportation Mitigation Fee (RTMF). The FMSI Fee will be calculated and assessed during the building permit process. The RTMF will be calculated and assessed by Fresno COG.

TRA-2 The Project will be responsible for paying its fair share cost percentages and/or constructing the recommended improvements identified in Tables 3.17-13 and 3.17-13a (based on the Cumulative Year 2035 With Project AM Peak-hour impacts at Project-impacted intersections) subject to reimbursement for the costs that are in excess of the Project's equitable responsibility as determined by the City. This will be itemized and enforced through conditions of approval or a development agreement, at the discretion of the City.

Impact 3.17-2: *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?*

Less Than Significant Impact. The Project CEQA document(s) and traffic analysis were sent out for public review prior to July 1, 2020, which is the implementation date to analyze Vehicle Miles Travelled (VMT) within the context of CEQA. Pursuant to CEQA Guidelines Section 15007, amendments to the CEQA Guidelines (such as those associated with 15064.3 (b)) apply prospectively only. Section 15007 (c) includes the provision: "If a document meets the content requirements in effect when the document is set out for public review, the document shall not need to be revised to conform to any content requirements in guideline amendments taking effect before the document is finally approved." Therefore, since the Parc West CEQA documents and traffic impact study were sent out for public review prior to implementation of CEQA Guidelines Section 15064.3 (b), there is a ***less than significant impact.***

Mitigation Measures: None are required.

Impact 3.17-3: *Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?AND/OR*

Impact 3.17-4: *Result in inadequate emergency access?*

Less Than Significant Impact. Based on information provided by the developer, access to and from the Project site under buildout will be from three (3) points. In addition to the proposed full access points described under Phase I and Phase II, the Project proposes to have access to Garfield Avenue. Access to Garfield Avenue will be off the future Gettysburg Avenue extension between Garfield Avenue and Grantland Avenue and is proposed to be full access. The location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity was analyzed. A review of the Project driveway to be constructed under buildout indicates that it is located at a point that minimizes traffic operational impacts to the existing roadway network.

The Project will be responsible for construction of internal roadways to City standards as well as for potential improvements to surrounding roadways to accommodate the Project.

No roadway design features associated with this proposed Project would result in an increase in hazards due to a design feature or be an incompatible use. The internal road system has been designed with traffic calming features such as curved roadways, cul-de-sacs and relatively short blocks of housing. There are no non-residential uses (such as farm equipment) associated with the Project. The City has reviewed the site layout and determined that the Project provides adequate emergency access. There is a ***less than significant impact.***

Mitigation Measures: None are required.

3.19 Utilities

This section of the DEIR identifies potential impacts of the proposed Project pertaining to water supply and infrastructure, wastewater service, solid waste and other utility services. An SB 610 Water Supply Assessment was prepared and is included as Appendix C.

Environmental Setting

Water System and Supply

The City of Fresno Department of Public Utilities (DPU) provides potable water to the majority of the City, and some users within the portion of its Planning Area outside of the City limits. Fresno's primary source of potable water is groundwater stored in an aquifer. However, in 2004 the City's first surface water treatment facility (Northeast Surface Water Treatment Facility [NESWTF]) came online and began delivering approximately 4,060 acre-feet (AF) in 2004 to residents in northeast Fresno. By 2015, the NESWTF in combination with the T-3 Surface Water Treatment Facility (T-3 SWTF) delivered approximately 28,347 AF of treated surface water to the residents of Fresno (2015 Urban Water Management Plan, 2016).

The 2015 UWMP was adopted by the City Council in June 2016. It describes the current and planned water conservation programs, provides a water shortage contingency plan should it need to be implemented in the event of a severe water shortage or water supply emergency and a future water supply plan for a variety of water sources including treated surface water, groundwater and recycled water. Also included in this 2015 UWMP is an aggressive water conservation plan to reduce demand throughout the City's service area. The 2015 UWMP is in accordance with the Urban Water Management Planning Act that stipulates that every urban water supplier in California supplying water directly or indirectly to 3,000 or more customers or supplying more than 3,000 AF of water annually shall adopt and submit an Urban Water Management Plan to the California Department of Water Resources. Failure to submit a plan, as required, could result in ineligibility to receive certain grants or receive drought assistance from the State[1].

The City currently has approximately 260 active pump stations, which pump an average of 74 millions of gallons per day (mgd). Groundwater pumping data provided by the City indicates that approximately 83,360 AF was pumped in 2015. Between 2011 and 2015, the City pumped an

[1] Fresno General Plan Draft EIR (2020), page 4.17-2.

average of approximately 111,522 AF/year. This average groundwater pumping has exceeded the current estimated groundwater safe yield of approximately 72,500 AF/year.

In 2004, the NESWTF located at Chestnut and Behymer Avenues began operation. The NESWTF has reduced the dependence on groundwater pumping by the City that was needed to meet water demand. Prior to NESWTF operation, 100 percent of the City's water demand was met through groundwater pumping.

In the near future, groundwater will continue to be an important part of the City's supply but is not planned to be relied upon as heavily as has historically been the case. The 2015 UWMP projects that groundwater pumped by the City will decrease from approximately 83,360 AF/year (with a total production of 111,706 AF/year) in 2015 to approximately 82,400 AF/year (with a total production of 148,900 AF/year in 2040. This would represent a decrease in the groundwater percentage of total water supply from 75 percent to 55 percent. In order to meet the projected decrease, the City is planning to rely on expanding their delivery and treatment of surface water supplies and groundwater recharge activities[2].

Wastewater (Sewer)

The City of Fresno owns and maintains the majority of the wastewater collection systems that convey wastewater to the Fresno/Clovis Regional Wastewater Reclamation Facility (RWRF), and all of the wastewater collection system that conveys wastewater to the North Fresno Water Reclamation Facility (NFWRF). The City's wastewater collection system consists of more than 1,500 miles of gravity flow pipelines, ranging in size from 4 inches to 84 inches in diameter, and ranging in age from new to more than 100 years old. The system also includes some pressure flow pipelines, by which pumped wastewater is conveyed to a point of discharge usually tributary to a gravity flow pipeline. Wastewater collection system pipelines consist of a number of different pipe materials, but the majority of the gravity flow pipelines consist of polyvinyl chloride (PVC) pipe, vitrified clay pipe (VCP) or concrete pipe, which includes both reinforced concrete pipe (RCP) and standard or non-reinforced concrete pipe (SCP). Together, these pipe materials account for approximately 98.4 percent of the wastewater collection system pipelines[3].

Fresno/Clovis Regional Wastewater Reclamation Facility. The Fresno/Clovis Regional Wastewater Reclamation Facility (RWRF) is located southwest of the City in the area generally

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[2] Fresno General Plan Draft EIR (2020), page 4.17-3.

[3] Ibid.

bounded by Jensen, Cornelia, Central and Chateau Fresno Avenues. It provides wastewater treatment for a service area that includes most of the Cities of Fresno and Clovis, and some unincorporated areas of Fresno County. The permitted wastewater treatment capacity of the RWRF is currently 91.5 mgd as an annual monthly average flow, and 101 mgd as a maximum monthly average flow. In 2017, Phase I of a tertiary treatment system was completed at the RWRF. The current design flow for the tertiary treatment system is 5.0 mgd but can be expanded in two subsequent phases to 15 mgd (Phase II) and ultimately 30 mgd (Phase III). The City of Clovis maintains the rights and capacity to discharge 9.3 mgd to the facility. The City of Fresno maintains the rights to the remaining capacity.

The RWRF employs an activated sludge wastewater treatment process, which produces undisinfected secondary effluent. Most of the effluent is discharged to an array of percolation basins, where it percolates through the underlying soil strata and into the groundwater beneath the basin. However, some of the effluent is recycled by direct delivery to nearby farmland where it is used for restricted irrigation for feed/fodder and fiber crops. In addition, some of the percolated effluent is extracted from the groundwater beneath the basins by pumping and is recycled for irrigation by delivery to the Fresno Irrigation District (FID) canal system.

The use of the RWRF percolation basins for effluent disposal has resulted in a groundwater mound beneath and adjacent to the RWRF site, and the local groundwater level in that area is higher than it would otherwise be without the addition of the RWRF effluent. The depth of groundwater at the RWRF ranges from approximately 80 to 90 feet below ground surface (bgs), and it extends well beyond the perimeter of the RWRF site. The diversion and/or extraction of RWRF effluent for beneficial recycled water uses such as irrigation, rather than effluent disposal via the percolation basins, reduces related groundwater mounding and effluent-related effects on background groundwater quality.

In 2010, the City adopted the Recycled Water Master Plan that includes an evaluation of potential recycled water use areas throughout the City, and evaluates a number of alternatives for the production and delivery of recycled water. The Recycled Water Master Plan recommended the construction of a tertiary treatment system at the RWRF with the ultimate capacity of 30 mgd (approximately 33,600 AF/year). Phase I of the tertiary treatment system with a design flow of 5.0 mgd has been completed. A recycled water distribution system has been developed in the southwest area of the city due to its proximity to the RWRF[4].

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[4] Fresno General Plan Draft EIR (2020), pages 4.17-5 and 6.

Solid Waste

Fresno diverts a majority of its solid waste away from landfills and into recycling and composting programs. Diversion conserves limited landfill space, keeps toxic chemicals and materials from contaminating landfills, and enhances the reuse of materials. A Council resolution commits the City to the goal of Zero Waste by the year 2025. Recycling of construction & demolition is required for any City-issued building, relocation or demolition permitted project that generates at least 8 cubic yards of material by volume and all waste must be hauled to a City-approved facility.

The Solid Waste Division of the City of Fresno provides curbside collection of residential bulky goods through operation cleanup. The solid waste division also collects through a three-cart system solid waste, recycling, green waste, as well as waste oil and waste oil filters weekly[5].

Garbage disposed of in the City of Fresno is taken to Cedar Avenue Recycling and Transfer Station (CARTS). Once trash has been off-loaded at the transfer station, it is sorted and non-recyclable solid waste is loaded onto large trucks and taken to the American Avenue Landfill (i.e. American Avenue Disposal Site, Site Solid Waste Information System [SWIS] Number 10-AA-0009) located approximately six miles southwest of Kerman. American Avenue Landfill is owned and operated by Fresno County and began operations in 1992 for both public and commercial solid waste haulers. The American Avenue Landfill is a sanitary landfill, meaning that it is a disposal site for non-hazardous solid waste spread in layers, compacted to the smallest practical volume, and covered by material applied at the end of each operating day. The American Avenue Landfill has a maximum permitted capacity of 32,700,000 cubic yards and a remaining capacity of 29,358,535 cubic yards, with an estimated closure date of August 31, 2031. The maximum permitted throughput is 2,200 tons per day (CalRecycle, 2019)[6].

Electricity

Fresno receives its electricity from Pacific Gas and Electric (PG&E). PG&E provides electrical service to business and residents throughout the City via underground and above-ground service lines. PG&E owns and maintains all service and transmission lines in the City and operates several electrical substations throughout the region[7].

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[5] Fresno General Plan Draft EIR (2020), page 4.17-9.

[6] Ibid, page 4.17-10.

[7] Ibid, page 4.17-11.

Natural Gas

PG&E is the natural gas service provider in the greater Fresno area. PG&E owns and maintain several natural gas transmission lines in the region that feed local distribution lines that connect to individual service lines[8].

Telecommunications

Several providers provide telecommunication services to the greater Fresno area. AT&T is the largest provider of cellular and fixed telephone services. Telephone lines are located throughout the greater Fresno area[9].

Regulatory Setting

Federal Agencies and Regulations

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and groundwater wells. The SDWA applies to every public water system in the United States but does not regulate private wells which serve fewer than 25 individuals.

The SDWA authorizes the United States Environmental Protection Agency (EPA) to set national health- based standards for drinking water to protect against both naturally-occurring and manmade contaminants that may be found in drinking water. Originally, the SDWA focused primarily on treatment as the means of providing safe drinking water at the tap. The 1996 amendments changed the existing law by recognizing source water protection, operator training, funding for water system improvements, and public information as important components of safe drinking water. This approach is intended to ensure the quality of drinking water by protecting it from source to tap.

Clean Water Act

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[8] Fresno General Plan Draft EIR (2020), page 4.17-11.

[9] Ibid.

The Clean Water Act (CWA) is the primary federal legislation governing surface water quality protection. The statute employs a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water." Pollutants regulated under the CWA include "priority" pollutants, including various toxic pollutants; "conventional" pollutants, such as biochemical oxygen demand (BOD), total suspended solids (TSS), fecal coliform, oil and grease, and pH; and "non-conventional" pollutants, including any pollutant not identified as either conventional or priority. The CWA regulates both direct and indirect discharges.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) program, Section 402 of the CWA, controls direct discharges into navigable waters. Direct discharges or "point source" discharges are from sources such as pipes and sewers. NPDES permits, issued by either EPA or an authorized state/tribe, contain industry-specific, technology-based and/or water-quality-based limits, and establish pollutant monitoring and reporting requirements. (EPA has authorized 40 states to administer the NPDES program.) A facility that intends to discharge into the nation's waters must obtain a permit before initiating a discharge. A permit applicant must provide quantitative analytical data identifying the types of pollutants present in the facility's effluent and the permit will then set forth the conditions and effluent limitations under which a facility may make a discharge.

General Pretreatment Regulations

Another type of discharge that is regulated by the CWA is discharge that goes to a publicly owned treatment works (POTW). POTWs collect wastewater from homes, commercial buildings, and industrial facilities and transport it via a collection system to the treatment plant. Here, the POTW removes harmful organisms and other contaminants from the sewage so it can be discharged safely into the receiving stream. Generally, POTWs are designed to treat domestic sewage only. However, POTWs also receive wastewater from industrial (non-domestic) users. The General Pretreatment Regulations establish responsibilities of federal, state, and local government, industry, and the public to implement pretreatment standards to protect municipal wastewater treatment plants from damage that may occur when hazardous, toxic, or other wastes are discharged into a sewer system and to protect the quality of sludge generated by these plants.

Discharges to a POTW are regulated primarily by the POTW itself, rather than the state/tribe or EPA.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) was enacted in 1976 to address the huge volumes of municipal and industrial solid waste generated nationwide. After several amendments, the Act as it stands today governs the management of solid and hazardous waste and underground storage tanks (USTs). RCRA is an amendment to the Solid Waste Disposal Act of 1965. RCRA has been amended several times, most significantly by the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA is a combination of the first solid waste statutes and all subsequent amendments. RCRA authorizes the EPA to regulate waste management activities. RCRA authorizes states to develop and enforce their own waste management programs, in lieu of the federal program, if a state's waste management program is substantially equivalent to, consistent with, and no less stringent than the federal program.

State Agencies and Regulations

Sustainable Groundwater Management Act of 2014 (SGMA)

On September 16, 2014, a three-bill legislative package was signed into law, composed of AB 1739, SB 1168, and SB 1319, collectively known as the Sustainable Groundwater Management Act (SGMA). The Governor's signing message states "a central feature of these bills is the recognition that groundwater management in California is best accomplished locally".

The SGMA provides a framework for sustainable management of groundwater supplies by local authorities, with the potential for state intervention if necessary to protect the resource. The act requires the formation of local groundwater sustainability agencies (GSAs) that must assess conditions in their local water basins and adopt locally-based management plans. The groundwater basin that serves Fresno has been designated by the Department of Water Resources as high priority and subject to a condition of critical overdraft.

Porter-Cologne Water Quality Act

In 1969, the California Legislature enacted the Porter-Cologne Water Quality Control Act to preserve, enhance, and restore the quality of the state's water resources. The act established the State Water Resources Control Board and nine Regional Water Quality Control Boards as the principal state agencies with the responsibility for controlling water quality in California. Under the act, water quality policy is established, water quality standards are enforced for both surface water and groundwater, and the discharges of pollutants from point and nonpoint sources are

regulated. The act authorizes the State Water Resources Control Board to establish water quality principles and guidelines for long-range resource planning including groundwater and surface water management programs and control and use of recycled water.

State Water Resources Control Board

Created by the State Legislature in 1967, the five-member State Water Resources Control Board (SWRCB) allocates water rights, adjudicates water right disputes, develops statewide water protection plans, establishes water quality standards, and guides the nine Regional Water Quality Control Boards located in the major watersheds of the state. The joint authority of water allocation and water quality protection enables SWRCB to provide comprehensive protection for California's waters. SWRCB is responsible for implementing the CWA and issues NPDES permits to cities and counties through Regional Water Quality Control Boards (RWQCBs). The City of Fresno is located within a portion of the state that is regulated by the Central Valley RWQCB.

Urban Water Management Planning Act

In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code Sections 10610–10656). The act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet of water annually, should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The act describes the contents of the Urban Water Management Plans as well as how urban water suppliers should adopt and implement the plans. It is the intention of the act to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

Senate Bill (SB) 610

SB 610 makes changes to the Urban Water Management Planning Act to require additional information in Urban Water Management Plans if groundwater is identified as a source available to the supplier. Required information includes a copy of any groundwater management plan adopted by the supplier, a copy of the adjudication order or decree for adjudicated basins, and if non-adjudicated, whether the basin has been identified as being overdrafted or projected to be overdrafted in the most current California Department of Water Resources publication on that basin. If the basin is in overdraft, that plan must include current efforts to eliminate any long-term overdraft. A key provision in SB 610 requires that any project subject to the California Environmental Quality Act supplied with water from a public water system be provided a specified water supply assessment, except as specified in the law.

Assembly Bill (AB) 901

AB 901 requires Urban Water Management Plans to include information relating to the quality of existing sources of water available to an urban water supplier over given time periods and the manner in which water quality affects water management strategies and supply.

Senate Bill (SB) 221

SB 221 prohibits approval of subdivisions consisting of more than 500 dwelling units unless there is verification of sufficient water supplies for the project from the applicable water supplier(s). This requirement also applies to increases of 10 percent or more of service connections for public water systems with less than 500 service connections. The law defines criteria for determining "sufficient water supply" such as using normal, single-dry, and multiple-dry year hydrology and identifying the amount of water that the supplier can reasonably rely on to meet existing and future planned uses. Rights to extract additional groundwater, if groundwater is to be used for the project, must be substantiated.

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties are required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000, and beyond. Solid waste plans are required to explain how each city's AB 939 plan will be integrated with the respective county plan. They must promote (in order of priority) source reduction, recycling and composting, and environmentally safe transformation and land disposal.

<u>Regional</u>

Regional Water Quality Control Board, Central Valley Region

The Central Valley RWQCB provides planning, monitoring, and enforcement techniques for surface and ground water quality in the Central Valley region, including the City of Tehachapi. The primary duty of the RWQCB is to protect the quality of the waters within the region for all beneficial uses. This duty is implemented by formulating and adopting water quality plans for specific ground or surface water basins and by prescribing and enforcing requirements on all agricultural, domestic and industrial waste discharges.

Water Reuse Requirements (Permits)

The Central Valley RWQCB issues water reuse requirements (permits) for projects that reuse treated wastewater. These permits include water quality protections as well as public health protections by incorporating criteria established by DPH in Title 22. The Central Valley RWQCB may also incorporate requirements into the permit in addition to those specified in Title 22. These typically include periodic inspection of recycled water systems, periodic cross-connection testing, periodic training of personnel that operate recycled water systems, maintaining a database and/or permitting individual use sites, periodic monitoring of recycled water and groundwater quality, and periodic reporting.

Waste Discharge Requirements

The Central Valley RWQCB typically requires a Waste Discharge Requirement (WDR) permit for any facility or person discharging or proposing to discharge waste that could affect the quality of the waters of the state, other than into a community sewer system. Those discharging pollutants (or proposing to discharge pollutants) into surface waters must obtain an NPDES permit from the Central Valley RWQCB.

The NPDES serves as the WDR. For other types of discharges, such as those affecting groundwater or in a diffused manner (e.g., erosion from soil disturbance or waste discharges to land), a Report of Waste Discharge (WDR) must be filed with the Central Valley RWQCB in order to obtain WDRs. For specific situations, the Central Valley RWQCB may waive the requirement to obtain a WDR for discharges to land or may determine that a proposed discharge can be permitted more effectively through enrollment in a general NPDES permit or general WDR.

<u>Local</u>

City of Fresno General Plan

The City of Fresno establishes the following applicable goals, objectives, and policies related to utilities that are relevant to the project:

E-18-b Policy: *Pursue enlargement or extension of the sewage collection system where necessary to serve planned urban development including the designated North and Southeast Growth Areas, with the capital costs and benefits allocated equitably and fairly between the existing users and new users while facilitating economic diversification. New users shall, to the extent not inconsistent with economic diversification strategies, pay for the cost of being attached to the collection system through connection fees, including the cost of any incremental burden that they*

may place on the entire system and pay for their share of operational and maintenance costs in addition to any costs for extraordinary facilities such as lift stations or capacity enhancement measures.

E-18-d. Policy: *Determine that adequate trunk sewer capacity exists or can be provided to serve proposed development prior to the approval of rezoning, special permits, tract maps, and parcel maps so that the capacities of existing facilities are not exceeded.*

E20 Objective: *Ensure the provision of adequate sewage treatment and disposal by utilizing the Fresno-Clovis Regional Wastewater Treatment and Reclamation Facility as the primary facility, when economically feasible, for all existing and new development within the metropolitan area.*

E-20-a Policy: *Provide increased wastewater treatment plant capacity in a timely manner to facilitate planned urban development within the facility's planned service area, and accommodate experienced increase in flows and loading from the existing community with the capital costs and benefits allocated equitably and fairly between existing users and new users while facilitating economic diversification. New users shall, to the extent not inconsistent with economic diversification strategies, pay for the cost of being attached to the treatment facility through connection fees, including the cost of any incremental burden that they may place on the entire system and pay for their share of operational and maintenance costs in addition to any costs for extraordinary facilities such as satellite or "package" treatment plants.*

E-20-d. Policy *Monitor wastewater treatment plant flows and loadings to the extent feasible and consider the wastewater treatment impacts of land use changes when evaluating general plan amendment proposals.*

E22 Objective: *Manage and develop the City of Fresno's water facilities to ensure a safe, economical, and reliable water supply for existing and planned urban development and economic diversification.*

E-22-b. Policy: *Set adequate and appropriate conditions of approval for each new development proposal to ensure that the necessary potable water production and supply facilities are in place prior to occupancy.*

E-22-e Policy: *Capital improvement costs and benefits of new or upgraded water production and distribution facilities shall be allocated equitably and fairly between existing users and new users, consistent with economic diversification strategies.*

E-22-f Policy: *New development and connections to the City's water supply and distribution system shall pay for the cost of being attached to the water system through connection fees and for the cost that they place on the entire water system including treatment, production, distribution, recharge and conservation and/or provide for the installation of public facilities and participate in capital improvement financing programs necessary to accommodate new development, consistent with economic diversification strategies.*

E-22-l Policy: *Evaluate new development proposals and entitlement activities in light of the conclusions and recommendations of the Fresno Metropolitan Water Resource Management Plan.*

E-30-a. Policy: *Support programs and new techniques of solid waste disposal such as recycling, composting, and waste separation, to reduce the volume and toxicity of solid wastes that must be sent to landfill facilities.*

E-30-b. Policy: *Pursue programs to maintain conformance with AB 939, the Solid Waste Management Act of 1989, in order to comply with mandated diversion goals.*

E-30-c. Policy: *Expand community sanitation programs to provide neighborhood cleanup and nuisance abatement services throughout the metropolitan area including both incorporated and unincorporated areas.*

G-1B-c Policy. *Prioritize energy and water conservation through the following implementation measures, while maintaining public health and safety standards, utilizing the most current versions of the City's Urban Water Management Plan and Metropolitan Water Resources Management Plan as source documents for data and for prioritizing actions:*

(1) Within a reasonable period of time from adoption of General Plan Resource Element / Air Quality Objective G-1B, the City shall initiate a process to revise land use policies, ordinances, development standards and landscape/shading standards to incorporate appropriate water conservation, water recycling, and recharge measures into private and public project analysis and design (e.g.,

requiring installation of dual color-identified plumbing that would accommodate future use of recycled water for landscaping).

G-1B-d Policy: *Maintain current levels of achievement for recycling and reuse of all types of waste material in the City, and further enhance waste and wastewater management practices to further achieve reductions in greenhouse gas emissions through implementation measures such as the following:*

(1) The City shall continue to require provisions for recyclable material collection and storage areas to be incorporated into all residential development designs, and within one year from adoption of General Plan Resource Element / Air Quality Objective G-1B shall consider expanding this requirement to all industrial facilities, sizing the recycling area for industrial development according to the anticipated types and amounts of recyclable material generated.

G-1B-f Policy: *The City shall continue to enhance landscaping, consistent with energy and water conservation principles.*

(1) As additional technical information becomes available, the City shall evaluate and apply, as appropriate, augmented xeriscape, "water-wise," and "green gardening" practices to be implemented in public and private landscaping design and maintenance.

West Area Community Plan

The proposed project is located within the area subject to the West Area Community Plan which contains policies that address utilities and service systems as follows:

W-2-a. Policy *The design of public services shall be based on planned development intensity. Appropriate sizing criteria shall be determined for public facilities, based on population and land use designations with sufficient additional reserve capacity to provide a reasonable margin of safety for potential variations in population variations in population growth and intensity of use.*

W-2-c. Policy *Pursue the formation of a comprehensive city-managed funding program in the West Community Plan Area to provide needed public facilities (including, but not limited to streets sidewalks, sewer and water infrastructure, law enforcement*

substations, and parks) in the incorporated an unincorporated portions of the plan area.

This funding program may include one or more of the following:

- *Capital improvement assessment district(s), preferably comprehensive and multi-purpose;*
- *A modified Urban Growth Management (UGM) Ordinance;*
- *One or more Mello-Roos Districts, which could include funding for ongoing operation of services such as fire protection and law enforcement;*
- *Construction of self-limiting toll roads and/or bridges (where collection of tolls shall cease when construction debt is satisfied); and*
- *Pursuit of gas tax revenues, grants, and other funding sources for use in both incorporated and unincorporated areas where urban development is planned by the city.*

Elements of the above funding program would be applied, as appropriate, to areas with existing and planned urban development and densities as shown in city plans.

The funding program would not include areas shown on city plans for rural residential development, until such time as city plan amendments and/or entitlements are approved for more intensive development, or until such time as council approves a request by rural residential property owners to be fully or partially included in the funding program.

Owners of agricultural or rural residential property—incorporated or unincorporated—who are interested in participating in an assessment district shall be afforded this opportunity on an equitable pro rata basis.

Owners of agricultural or rural residential property who are not presently interested in pursuing more intensive development may opt out of an assessment district by deferring their assessments until such time as they opt in pursuant to obtaining approval of a subsequent plan amendment, rezoning, subdivision, or special permit. Any revenues received as a result of these later opt-in actions shall reduce the term of the obligation for assessed properties with regard to repayment of debt for capital improvements. If no change in use or subdivision is sought by owners of the subject rural residential or

agricultural property during the repayment period for capital improvement debt that would have been applicable has been subsequently fully retired, that portion of the non-participating rural residential or agricultural property's obligation shall have expired and no repayment shall be due.

W-2-d. Policy *Consider modifying Urban Growth Management policies to increase obligations for off-site improvements and to establish fees for additional needed public improvements. The following are additions to UGM requirements and fees:*

- *Provision of law enforcement substations;*
- *Funding to purchase and improve community level parks;*
- *Provision of pedestrian walkways to allow access along major streets between new subdivisions and neighborhood schools;*
- *Provision of additional major street travel lanes (beyond the currently required two center lanes) when projected traffic volumes or safety conditions warrant; and*
- *Establishment of a service area and UGM fee for design and construction of planned overcrossings of Freeway 99 and for north-south traffic flow improvements within the West Area, including the Grantland Diagonal.*

City of Fresno-Clovis Storm Water Quality Management Program

The City's Storm Water Quality Management Program (SWQMP), adopted in 2005, is intended to implement and enforce a series of BMPs designed to reduce the discharge of pollutants from the municipal separate storm drain systems to the maximum extent practicable, to protect water quality and to satisfy the appropriate water quality requirements of the Clean Water Act. These BMPs include public participation/involvement, construction site runoff control, illicit discharge detection and elimination, pollution prevention/good housekeeping, and post-construction runoff control. The SWQMP also provides a series of measurable goals that are used to gauge the objectives of the program.

City of Fresno – Sewer System Management Plan

On May 2, 2006, the State Water Resources Control Board (Board) issued Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (WDR). The WDR is applicable to any entity (e.g., the City of Fresno) that owns or operates a collection system greater than one mile in length and consists of a number of components and reporting

requirements. The purpose of the WDR is to establish system-wide operation, maintenance and management plans to reduce sanitary sewer overflows. A sanitary sewer overflow (SSO) is a release of untreated or partially treated wastewater resulting in public exposure, regardless of whether the wastewater reaches waters of the United States or not. It also refers to wastewater backups into buildings and onto private property that are caused by blockages in the City's portion of the sanitary sewer system. The City of Fresno adopted the Sewer System Management Plan (SSMP) in 2009 to address regulatory requirements established by the State Water Resources Control Board through its Order No. 2006-0003-DWQ. The SSMP provides a mechanism to properly manage, operate, and maintain all parts of the sanitary sewer system, with the ultimate goal being to reduce and prevent SSOs, as well as mitigate any SSOs that do occur.

City of Fresno Urban Water Management Plan

In accordance with the Urban Water Management Planning Act, as included in the California Water Code, Division 6, Part 2.6, every urban water supplier in California providing water for municipal purposes either directly or indirectly to more than 3,000 customers, or supplying more than 3,000 acre-feet of water annually, is required to prepare and adopt an Urban Water Management Plan (UWMP). The City of Fresno's UWMP was adopted in 2015 provides information on the City's water supply planning.

City of Fresno Municipal Code

The City of Fresno has adopted Urban Growth Management (UGM) ordinances and impact fee programs for providing water and wastewater utility services to UGM area development.

Fresno Metropolitan Flood Control District (FMFCD)

The FMFCD builds and operates the stormwater drainage and flood control system within its 398-square-mile service area, which includes the Cities of Fresno and Clovis, as well as some area east and northeast of those Cities. The FMFCD enforces the requirements of the MS4 NPDES permit for protecting stormwater quality and recharges local groundwater basins through its stormwater drainage retention basins. The FMFCD's Service Plan describes the District's plans and policies, including those regarding flood control, and Best Management Practices (BMPs) for the protection of stormwater quality.

Methodology

The analysis considered current conditions of the Project site and applicable laws, regulations and guidelines pertaining to utilities. Various databases, planning documents (including the Project SB 610 Water Supply Assessment – Appendix C and the City's adopted Urban Water

Management Plan), technical studies and maps were reviewed to assist in the environmental evaluation. Specific references are noted in the text.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item.

- Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?
- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Impacts and Mitigation Measures

Impact 3.19-1: *Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*

Less Than Significant Impact With Mitigation. Implementation of the proposed Project would include up to 844 residential units on the site. The Project will require that utilities be extended to serve the proposed development, including water, wastewater, stormwater, electric power, natural gas and telecommunications facilities. Extension of utilities will be the responsibility of the Project Developer. The Project will be subject to water and sewer modeling to determine any needed improvements to or additions to the City's existing infrastructure. The improvements required to tie into existing utilities are included in the Project Description, the environmental impacts of extending these utilities are analyzed within this EIR under the various CEQA Appendix G topics. Numerous mitigation measures have been included throughout this

document which are applicable to these activities. In addition, the Project will be subject to various development impact fees as determined by the City in order to construct any necessary on- or off-site improvements required in order to provide adequate utilities.

Wastewater / Sewer

The Project site is located within the service territory of the Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF). Since the RWRF is considered a publicly owned treatment facility, operational discharge flows treated at the RWRF would be required to comply with applicable water discharge requirements issued by the Regional Water Quality Control Board (RWQCB). Compliance with conditions or permit requirements established by the City as well as water discharge requirements outlined by the RWQCB would ensure that wastewater discharges coming from the proposed Project site and treated by the RWRF system would not exceed applicable Central RWQCB wastewater treatment requirements. See also Response 3.19-3 which describes the Project's wastewater demands and the City's capacity to handle those demands.

Stormwater

As discussed in Section 3.10 - Hydrology and Water Quality, the proposed Project would result in new impervious areas associated with site improvements and would therefore require new storm water drainage facilities. The proposed Project would install storm water drainage facilities (e.g. storm drainage mechanisms and storm water pipes) that would be in compliance with the City of Fresno and Fresno Metropolitan Flood Control District Development Standards. See Section 3.10-3 for more information pertaining to stormwater management.

Water Supply

As discussed in Response 3.19-2 below and Section 3.10 - Hydrology and Water Quality, the Project will add demand for water to the City of Fresno water system. Refer to those sections for more information.

Other Utilities

The Project will be required to access public utilities for electric power, natural gas and solid waste disposal. Based on the analysis herein, it is not anticipated that off-site improvements would be required for these facilities.

Thus, with incorporation of mitigation measures, the proposed Project's impacts associated with acquisition of utilities would be ***less than significant.***

Mitigation Measures: The mitigation measures throughout this document are also applicable to the on-site improvements associated with installation of adequate utilities. Please refer to the mitigation monitoring and reporting program for the full list of applicable mitigation.

Impact 3.19-2: *Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*

Less Than Significant With Mitigation. The proposed Project would add demand for water to the City of Fresno water system, which is reliant on a combination of surface water and groundwater to serve its customers. The information herein is based on the SB 610 Water Supply Assessment that was prepared for the Project and approved by the City of Fresno (Appendix C).

Project Site WSA History

The WSA for the Parc West Project is an update to the previously-approved Westlake Development Project WSA that was adopted by the City of Fresno in 2011. The WSA Update provides information for use in the CEQA analysis for the proposed Parc West Project.

Purpose of Updating the Westlake WSA

The Project Applicant (Granville Homes) for the Westlake project has determined that the Westlake project is no longer viable and is pursuing a "scaled-down" Project, known as "Parc West" on a portion of the same site as the Westlake project. Therefore, the "Project" for this WSA Update is the abandonment of the Westlake Development project and the construction and operation of the Parc West Project. The WSA Update analyzed the scaled-down Parc West Project and utilized the information in the previous Westlake WSA to the extent practical, but also provided updated information where necessary and applicable. The entire previously-approved Westlake WSA is included as Appendix A to the updated Parc West WSA (Appendix C).

Disposition of the Adopted Westlake WSA

The Updated WSA is intended to supersede the previously adopted Westlake WSA. Since the adopted conditions of approval and maps for Westlake Development project are being formally abandoned and replaced by the Parc West Project, so will the Westlake WSA. The Updated WSA will serve as a stand-alone document supporting only the Parc West Project. Any future development of the remaining acreage of the Westlake Project (which is approximately 300 acres) will be subject to additional CEQA analysis and a subsequent WSA if the requirements for implementation of SB 610 are met if or when remaining acreage is to be developed.

Assumptions

Project water demand is determined using the City's adopted 2015 Urban Water Management Plan (UWMP) methodologies and will be calculated on the basis of the following assumptions:

- Residential: 844 single-family units; historic water usages per capita adjusted for City Urban Water Management Plan assumptions regarding water conservation usage effects.
- Park/Trail: 1.819 acres of potentially irrigated public spaces. To be conservative, it is assumed that the entire public space acreage will be irrigated lawn. The previous Westlake WSA assumed irrigated lawn/open space would require 3.0 acre/feet/year of water.
- No units will be occupied until after 2020, therefore this analysis will use the UWMP 2020 target of 247 gallons per capita per day (GPCD), which is 80% of the City's 10-year baseline period (1999-2008) target of 309 GPCD and the confirmed 2020 target.[10]
- Average single-family household size according to the City's most recent Housing Element is 3.07 persons per unit. However, the previous Westlake WSA used 3.2 persons per dwelling unit, therefore, this analysis will use 3.2 persons per unit. With 844 units, this equates to approximately 2,700 persons (rounded).

Project Water Demand

Residential: 844 dwelling units X 3.2 persons per dwelling unit = 2,700 persons X 247 GPCD = 666,900 total gallons per day X 365 days per year = 243,418,500 gallons per year (or ~747 acre/feet/year)

Park/Trail: 1.819 acres X 3.0 acre/feet/year = ~5.5 acre/feet/year

Total Water Demand: 747 acre/feet/year for Residential
5.5 acre/feet/year for Park/Trail
752.5 acre/feet/year

Based on the calculations above, the Project would require 752.5 acre/feet/year of water. Comparison to the previous Westlake Project, as well as comparisons to the No Project / Agricultural Production and No Project / Buildout Under Existing Land Use Designations is

[10] City of Fresno 2015 UWMP, page 5-9.

provided below. However, it should be noted that the "baseline" from which the Project is analyzed is existing conditions on the site.

Comparison to Westlake Water Demands

Projected water demand from the previous Westlake Project is shown in Table 3.10-1.

Table 3.19-1 – Previous Westlake Project Water Demand in acre/feet/year

	2013	2020
Residential, Single-Family	1,708	1,626
Residential, Multiple Family	241	229
Commercial	81	81
Lake	168	168
Open Space	39	39
Total	2,237	2,143

Source: Adopted Westlake WSA, page 3-3 (See Appendix A of Appendix D).

As shown in Table 3.19-1, the Westlake project was projected to use 2,143 acre/feet/year of water by year 2020. That total included single-family and multi-family residential units, commercial establishments, public open spaces and a 55-acre lake (taking into account lake fill, evaporation and other factors). The Parc West Project only includes single-family residential units and parks/open space. Comparing the Westlake project to the proposed Parc West Project (752.5 acre/feet/year), the Parc West Project will use approximately 1,390.5 acre/feet/year less water than what was approved for the Westlake project.

Comparison to "No-Project" / Agricultural Use Water Demands

The proposed 160-acre Parc West Project was most recently planted in almond trees, but has historically been used for other crops as well. When farmed, the site uses agricultural water wells. Water use requirements for almond trees can vary depending on location, amount of rainfall, irrigation methods, soil permeability and other factors. Some studies estimate that each acre of almonds uses 3 to 4 acre/feet/year[11] at full maturity. The Western Farm Press, which uses data collected from growers, estimates that the average water applied is 35.58 acre/inches or 2.97 acre/feet/acre.[12] A 2016 UC Davis study that analyzed costs associated with almond trees in the

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11 http://www.slate.com/articles/technology/future_tense/2014/05/_10_percent_of_california_s_water_goes_to_almond_farming.html Accessed Sept. 2018.

12 https://www.westernfarmpress.com/tree-nuts/8-facts-about-almonds-agriculture-and-drought. Accessed Sept. 2018.

Central Valley estimated that within 5 years of being planted, almond orchards require approximately 52 acre/inches per year of water (this includes in-season rainfall) or 4.33 acre/feet/acre.[13]

For purposes of this analysis, it is assumed that once full maturity is achieved, almonds on the site will require approximately 4 acre/feet/acre/year.

160 acres of almonds X 4 acre/feet/acre/year = 640 acre/feet/year

Comparing the 160 acres of almonds (640 acre/feet/year) to the 160 acres of the Parc West Project (752.5 acre/feet/year), the Parc West Project will use approximately 112.5 acre/feet/year more water than what would be used by almond orchards on the site.

Comparison to "No Project" / Buildout Under Existing Land Use Designations

According to the City's General Plan, most of the Project site (approximately 150 acres) is designated as Medium Density Residential (5.0 – 12 dwelling units per acre), and the remaining 10 acres is designated as Community Commercial. For purposes of this analysis, it is assumed that the residential portion of the site could potentially be developed with between 750 – 1,800 residential units based on the existing Medium Density Residential Land Use designation. For purposes of calculating potential water use, a minimum development density of 5 dwelling units per acre may occur, which equates to 750 units. It is also assumed that the entire 10 acre portion designated as Community Commercial would be developed. Based on these assumptions, the site would result in the following water demands:

Residential: 750 dwelling units X 3.2 persons per dwelling unit = 2,400 persons X 247 GPCD = 592,800 total gallons per day X 365 days per year = 216,372,000 gallons per year (or ~664 acre/feet/year)

Commercial: Using the calculations from the previous Westlake WSA, it is assumed that the commercial component would require approximately 3 acre/feet per acre per year. 10 acres of commercial X 3 acre/feet/year = 30 acre/feet/year

Based on the minimum density of 5 dwelling units per acre for 150 acres and 10 acres of Community Commercial, this scenario would require approximately 694 acre/feet/year of water

[13] https://coststudyfiles.ucdavis.edu/uploads/cs_public/87/3c/873c1216-f21e-4e3e-8961-8ece2d647329/2016_almondsjv_south_final_10142016.pdf Accessed Sept. 2018.

(664 acre/feet/year for the residential portion and 30 acre/feet/year for the commercial portion). However, if a slightly higher buildout density is assumed (7 units per acre), the site would require approximately 959 acre/feet/year (929 acre/feet/year for the residential portion and 30 acre/feet/year for the commercial portion).

Comparison Summary

- Previously approved 430-acre Westlake WSA: 2,143 acre/feet/year
- 160-acre almond orchard water demand: 640 acre/feet/year
- Buildout under existing Land Use designations: 694 – 959 acre/feet/year
- Estimated 160-acre Parc West water demand: 752.5 acre/feet/year

It should be noted that the "baseline" water use for the Parc West Project is not the water demands from the previous Westlake Project. The baseline is calculated from existing site conditions, which based on its most recent use was a 160-acre almond orchard using private agricultural wells. Although the WSA Update is intended to only address water use demands from the proposed Parc West Project, a useful comparison may be to include the balance of the acreage currently planted in almonds (300 acres). Utilizing the estimation of 4 acre/feet/acre/year of water for almonds, if Parc West is built out on 160 acres, and the remaining 300 acres is planted in almonds, the entire site would use approximately 1,953 acre/feet/year (160 acre Parc West = 752.5 acre/feet/year + 300 acres of almonds @ 4 acre/feet/acre/year = 1,200 acre/fee/year). This is approximately 190 acre/feet/year less than the Westlake project when taking into account the entire acreage.

The City has reviewed the Project and determined that it can accommodate the water needs from the Project subject to development impact fees. In addition to demonstrating adequate water supply, the Project is also subject to minimum water pressure requirements. The City of Fresno Municipal Code Section 6-501 states that estimated peak hour water demands shall be based on 2.12 gallons per minute for single-family residential units. The Fire Protection Water Demand shall be added to the overall Project water demands at 1,500 gallons per minute. The sum of the Peak Hour Water Demands and Fire Protection Demands (in gpm) shall establish the total instantaneous water supply flow required for the Project, inclusive of fire protection. The Project applicant will be required to adhere to these standards and maintain them in perpetuity.

The City's UWMP contains a detailed evaluation of existing sources of water supply, anticipated future water demand, extensive conservation measures, and the development of new water supplies (recycled water, increased recharge, surface water treatment, etc.). Measures contained in the UWMP as well as the City's General Plan are intended to reduce demands on groundwater

resources by augmenting supply and introducing conservation measures and other mitigation strategies. In addition to payment of development fee impacts for water, the proposed Project will implement Mitigation Measure HYD – 2 which includes water use reduction measures. This will ensure that impacts from water use remain less than significant.

Water Availability

The proposed Project site is included in the land use / population area covered by the City's 2015 Urban Water Management Plan, which estimated future water demands based on land-use demand factors. The forecast period was based on a review of land-based unit demands factors for 2013 through 2015 and holding the City's General Plan land use acreages at buildout.[14] Projected water demands are shown in Table 3.19-2. As shown in the table, overall water demands are projected to increase from 214,500 af/year in 2020 to 262,500 af/year in 2040, an approximately 22% increase. However, the increase in water use from single-family housing is projected to increase at a slower rate of approximately 13% over the same period from 81,200 af/year in 2020 to 92,100 af/year in 2040.

The proposed Project is anticipated to utilize City groundwater to support the residential development. The Urban Water Management Plan (UWMP) indicates that future demand can be met with continued groundwater pumping, surface water purchases and conservation measures.

Table 3.19-2 – City-Wide Demands for Potable and Raw Water

Use Type	Additional Description *(as needed)*	Projected Water Use (af)				
		2020	2025	2030	2035	2040
Single Family		81,200	85,700	87,000	91,200	92,100
Multi-Family		23,000	25,100	26,800	28,900	30,400
Commercial	See Note 1	24,800	28,800	32,800	36,800	38,800
Industrial		6,600	6,900	6,400	6,600	6,900
Institutional/Governmental	See Note 1					
Landscape		11,200	11,700	12,200	12,700	13,100
Groundwater recharge/storage/banking	GW recharge	55,800	58,500	61,100	63,800	66,500
Saline water intrusion barrier						
Agricultural irrigation						
Wetlands or wildlife habitat						
Wholesale demand						
Other (define)	Travel Meters	200	200	200	200	200
Losses		11,700	12,700	13,200	14,100	14,500
	Total	214,500	229,600	239,700	254,300	262,500

Notes:1. Institutional and Governmental water usage is included in Commercial.

Source: Fresno 2015 UWMP Table 4-4, page 4-6

[14] City of Fresno 2015 UWMP, page 4-5.

Comparing 160 acres of almonds (640 acre/feet/year) to the 160 acres of the Parc West Project (752.5 acre/feet/year), the Parc West Project will use approximately 112.5 acre/feet/year more water than what would be used by almond orchards on the site. If approved, the Project would tie into the City's existing water system and would abandon the agricultural water wells. The Project site was included in the both the UWMP and the City's General Plan land use / water use projections. As indicated previously on pages 3.10-18 and 3.10-19, the site is currently designated for Medium Density Residential (5.0 – 12 dwelling units per acre) on 150 acres and Community Commercial on the remaining 10 acres. Assuming the site could be built out on the lower end of the range (5 to 7 dwelling units/acre), the site could require between 694 - 959 acre/feet/year of water. The proposed Parc West Project water demand is approximately 752.5 acre/feet/year and thus falls within the range of assumed water demand associated with the site. Since the site has been contemplated for urban development by the City of Fresno, the Project will not result in additional use of groundwater that was not already accounted for in the City's infrastructure planning documents (and subsequently analyzed in their respective CEQA documents). As such, there is ***a less than significant impact*** to this impact area. Mitigation Measure HYD – 2 will help ensure that impacts remain less than significant.

Mitigation Measures: HYD-2 (Water Conservation). See attached Project-specific Mitigation Measure Monitoring Checklist and MEIR Mitigation Measure Monitoring Checklist.

HYD – 2: The Project will implement the City of Fresno Water Conservation Program, including implementation of the State's Water Efficient Landscape Ordinance. The California Water Conservation Act mandates a 20 percent reduction in water usage by 2020. The City will meet the reduction target with measures applicable to new and existing development. Reductions beyond the state mandated 20 percent are possible with the use of building and landscaping water conservation features. The reductions from buildings can be achieved with high efficiency toilets, low-flow faucets, and water-efficient appliances such as dishwashers. Water savings from landscaping would be achieved primarily through the use of drought-tolerant landscaping or xeriscaping.

Impact 3.19-3: *Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

Less Than Significant With Mitigation. The Project will result in wastewater from residential units that will be discharged into the City's existing wastewater treatment system. The wastewater will be typical of other urban/residential developments consisting of bathrooms, kitchen drains and other similar features. The Project will not discharge any unusual or atypical wastewater that would violate the City's waste discharge requirements.

The Fresno-Clovis Regional Wastewater Reclamation Facility has been expanded and rehabilitated several times over the past 40 years to meet discharge requirements and accommodate growth in the metropolitan area. The treatment plant's design capacity is 80 MGD annual average, 160 MGD peak hour. The facility treats approximately 68 million gallons of wastewater per day.[15]

Table 3.19-3 summarizes the proposed Project's estimated wastewater generation. The estimate is based on a most conservative assumption that wastewater generation represents 90 percent of water consumption. This assumption is conservative because outdoor irrigation represents a significant percentage of water consumption. As shown in the table, the proposed Project would generate an estimated 602,824 gallons of wastewater on a daily basis.

Table 3.19-3
Project Wastewater Generation

Annual Water Demand	Daily Water Demand	Daily Wastewater Generation (90 percent of Daily Water Demand)
752.5 acre-feet	2.06 acre-feet (671,252 gallons)	1.85 acre-feet (602,824 gallons)

At 602,824 gallons of wastewater per day, the Project would represent only 0.008% of the daily average contribution to the permitted capacity of 80,000,000 gallons per day at the Reclamation Facility. The existing sewer mains near the Project site are sized to accommodate land uses planned in the City of Fresno's General Plan. The Project area is served by the City's Grantland trunk sewer line and the Project will be responsible for construction of smaller sewer lines to connect to the Project site and for its fair-share of payments for trunk fees; these fees will be collected pursuant to the City's UGM policies. The Project is not anticipated to cause any

[15] https://www.fresno.gov/publicutilities/facilities-infrastructure/ (accessed Feb. 2020).

violation of any existing permit because of the "typical" content - B.O.D. and suspended solids - of the waste discharge associated with the Project. The proposed Project will be required to pay its fair share of wastewater fees. The City of Fresno Public Works Department has reviewed the Project and determined that it can accommodate the wastewater generated from the Project. Therefore, the impact is ***less than significant.***

Impact 3.19-4: *Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

Less Than Significant. The City of Fresno's solid waste is primarily landfilled at the American Avenue Landfill in Tranquility. The landfill is permitted to accept 2,300 tons per day and has a permitted capacity of 29.3 million cubic yards. The original closure date was 2031; however, due to enhanced recycling efforts, particularly on the part of the City of Fresno, the closure date has been extended to 2050.

Solid waste generation by the Project is estimated to be:[16]

Residential: 844 units @ 12.23 #/day = 10,322 #/day or ~5.16 tons/day

The total Project solid waste generated by the Project will thus be 5.16 tons per day. If the City's reported historic diversion rate of 56% is maintained, the Project contribution to the landfill will be (.44 x 5.16), 2.27 tons per day.

The landfill has a maximum permitted disposal rate of 2,300 ton per day and a current disposal rate of 1,300 tons per day. Since the proposed Project's impact on solid waste would represent approximately 0.0005% of the daily intake, the impact is considered ***less than significant.***

Mitigation Measures: None are required.

Impact 3.19-5: *Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

Less Than Significant. See Response to Impact 3.19-4. The Project will comply with all federal, state and local statutes and regulations related to solid waste. Therefore, there is a ***less than significant impact***.

Mitigation Measures: None are required.

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[16] Source: CIWMB 2004

Chapter 4

CUMULATIVE IMPACTS

CUMULATIVE IMPACTS

4.1 Introduction

Section 15130 of the CEQA Guidelines requires an EIR to discuss cumulative impacts of a proposed Project when the Project's incremental effect is cumulatively considerable. Cumulative impacts refer to two or more individual effects that, when combined, are considerable or that compound or increase other environmental impacts. The purpose of the cumulative impact analysis is to identify and summarize the environmental impacts of the proposed Project in conjunction with existing, approved, and anticipated development in the Project area. Since impacts associated with aesthetics, biological resources, cultural resources, geology/soils, hazards/hazardous materials, land use/planning, population/housing, mineral resources, recreation, tribal cultural resources and wildfire were determined to be less than significant in the Project's Initial Study / Notice of Preparation (See Appendix A), cumulative impact analysis is not included for those impact areas.

The CEQA Guidelines allow for the use of two alternative methods to determine the scope of projects for the cumulative impact analysis:

- List Method – a list of past, present and probable future projects producing related or cumulative impacts, including, if necessary those projects outside the control of the agency.
- General Plan Projection Method – A summary of projections contained in an adopted General Plan, or related planning document, which described or evaluated regional or area wide conditions contributing to the cumulative impact.

The cumulative impacts analyses in this document is based in part on the list of approved or "pipeline" projects as identified in Table XVI of the Traffic Impact Analysis (Appendix D). These are projects that are anticipated to be developed in the Project area and consist primarly of housing developments and commercial developments. However, some cumulative analysis for certain topics is based on regional impacts (such as air quality, water supply, etc.). Under each impact section, the analysis method is noted.

The proposed Project's contribution to environmental impacts under cumulative conditions is based on full buildout of the Parc West Development Project. See Section 2 – Project Description for a complete description of the Project.

Some cumulative impacts for issue areas are not quantifiable and are therefore discussed in general terms as they pertain to development patterns in the surrounding region. In consideration of the cumulative scenario described above, the proposed Project may result in the following cumulative impacts:

4.1 Air Quality (Section 3.3)

Less Than Cumulatively Considerable. In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. The Air District attainment plans are based on a summary of projections that accounts for projected growth throughout the Air Basin, and the controls needed to achieve ambient air quality standards. This analysis considers the current CEQA Guidelines, which includes the amendments approved by the Natural Resources Agency, effective on December 28, 2018. The Air Basin is in nonattainment or maintenance status for ozone and particulate matter (PM_{10} and $PM_{2.5}$), which means that concentrations of those pollutants currently exceed the ambient air quality standards for those pollutants, or that the standards have recently been attained in the case of pollutants with maintenance status. When concentrations of ozone, PM_{10}, or $PM_{2.5}$ exceed the ambient air quality standard, then those sensitive to air pollution (such as children, the elderly, and the infirm) could experience health effects such as: decrease of pulmonary function and localized lung edema in humans and animals; increased mortality risk; and risk to public health, implied by altered connective tissue metabolism, altered pulmonary morphology in animals after long-term exposures, and pulmonary function decrements in chronically exposed humans.

Under the CEQA Guidelines, cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The geographic scope for cumulative criteria pollution from air quality impacts is the Air Basin, because that is the area in which the air pollutants generated by the sources within the Air Basin circulate and are often trapped. The SJVAPCD is required to prepare and maintain air quality attainment plans and a State Implementation Plan to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. While the SJVAPCD does not have authority over land use decisions, it is recognized that changes in land use and circulation planning would help the Air Basin achieve clean air mandates. The District evaluated emissions from land uses and transportation in the entire Air Basin when it developed its attainment plans. Emission inventories used to predict attainment of NAAQS must be based on the latest planning assumptions for mobile sources.

In accordance with CEQA Guidelines Section 15064, subdivision (h)(3), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively

considerable if the project complies with the requirements in a previously approved plan or mitigation program.

The history and development of the SJVAPCD's current Ozone Attainment Plan is described in Section 2.4, Air Quality Plans. The 2007 8-Hour Ozone Plan contains measures to achieve reductions in emissions of ozone precursors, and sets plans towards attainment of ambient ozone standards by 2023. The 2012 $PM_{2.5}$ Plan and the 2015 $PM_{2.5}$ Plan for the 1997 $PM_{2.5}$ Standard require fewer NO_X reductions to attain the $PM_{2.5}$ standard than the Ozone Plan, so the Ozone Plan is considered the applicable plan for reductions of the ozone precursors NO_X and ROG. The 2012 $PM_{2.5}$ Plan requires reductions in directly emitted $PM_{2.5}$ from combustion sources, such as diesel engines and fireplaces, and from fugitive dust to attain the ambient standard and is the applicable plan for $PM_{2.5}$ emissions. $PM_{2.5}$ is also formed in secondary reactions in the atmosphere involving NO_X and ammonia to form nitrate particles. Reductions in NO_X required for ozone attainment are also sufficient for $PM_{2.5}$ attainment. As discussed in Section 3.3, the Project is consistent with all applicable control measures in the air quality attainment plans. The Project would comply with any District rules and regulations that may pertain to implementation of the AQPs. Therefore, impacts would be less than significant with regard to compliance with applicable rules and regulations.

This Project does not exceed SJVAPCD thresholds and will reduce its cumulative impact through compliance with Rule 9510; therefore, the Project is considered less than cumulatively considerable for this criterion.

Cumulative Health Impacts

The Air Basin is in nonattainment for ozone, PM_{10} (State only), and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as children, the elderly, and the infirm). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects. However, the health effects are a factor of the dose-response curve. Concentration of the pollutant in the air (dose), the length of time exposed, and the response of the individual are factors involved in the severity and nature of health impacts. If a significant health impact results from Project emissions, it does not mean that 100 percent of the population would experience health effects. **Error! Reference source not found.**, **Error! Reference source not found.**, and **Error! Reference source not found.** relate the pollutant concentration experienced by residents using air quality data for the nearest air monitoring station to the health

impacts ascribed to those concentrations by the EPA Air Quality Index. This provides a more detailed look at the actual impacts currently experienced by area residents.

Since the Basin is nonattainment for ozone, PM_{10}, and $PM_{2.5}$, it is considered to have an existing significant cumulative health impact without the Project. When this occurs, the analysis considers whether the Project's contribution to the existing violation of air quality standards is cumulatively considerable. The SJVAPCD regional thresholds for NO_X, VOC, PM_{10}, or $PM_{2.5}$ are applied as cumulative contribution thresholds. Projects that exceed the regional thresholds would have a cumulatively considerable health impact. As shown in **Error! Reference source not found.** and **Error! Reference source not found.**, of Appendix B, the regional analysis of construction and operational emissions indicates that the Project would not exceed the District's significance thresholds and the Project is consistent with the applicable Air Quality Plan.

The SJVAPCD Air Quality Attainment Plans predict that nonattainment pollutant emissions will continue to decline each year as regulations adopted to reduce these emissions are implemented, accounting for growth projected for the region. Therefore, the cumulative health impact will also decline even with the Project's emission contribution.

Therefore, evaluation of the cumulative air emissions and cumulative health impacts supports a finding that the Project's contribution ***would not be cumulatively considerable*** because the proposed Project's incremental emissions would be less than significant.

4.2 Energy (Section 3.6)

Less Than Cumulatively Considerable. Development associated with buildout of the proposed Project would require the consumption of electricity, natural gas, and vehicle fuel resources to accommodate growth. As discussed in Section 3.6, new development and land use turnover would be required to comply with statewide mandatory energy requirements outlined in Title 24, Part 6, of the California Code of Regulations (the CALGreen Code), which could decrease estimated electricity and natural gas consumption in new and retrofitted structures. Furthermore, energy consumed by development in the Project area would continue to be subject to the regulations described in the Regulatory Setting of this Section. For these reasons, the electrical and natural gas energy that would be consumed by the Project is not considered unnecessary, inefficient, or wasteful. Impacts are ***less than cumulatively considerable.***

4.3 Greenhouse Gases (Section 3.8)

Less Than Cumulatively Considerable. Greenhouse gases and global climate change impacts are essentially considered cumulative impacts rather than Project-specific impacts. As identified in

Section 3.8 Greenhouse Gases, the Project will have a less than significant impact associated with this impact. CEQA Guidelines Section 15130 notes that sometimes the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis. Global climate change is this type of issue. The causes and effects may not be just regional or statewide, they may also be worldwide. Given the uncertainties in identifying, let alone quantifying the impact of any single project on global warming and climate change, and the efforts made to reduce emissions of GHGs from the Project through design, in accordance with CEQA Section 15130, any further feasible emissions reductions would be accomplished through CARB regulations adopted pursuant to AB32. As demonstrated in Section 3.8, the Project would achieve reductions of 17.6 percent beyond the ARB 2020 21.7 percent target and 9.6 percent beyond the SJVAPCD 29 percent reduction from BAU requirements from adopted regulations and on-site design features. No new threshold has been adopted by the City for the SB 32 2030 target; however, the reductions from BAU by 2030 are 26.6 percent beyond the 21.7 percent required for the 2020 target. Based on this progress and the strong likelihood that the measures included in the 2017 Scoping Plan Update will be implemented, it is reasonable to conclude that the Project is consistent with the 2017 Scoping Plan and will contribute a reasonable fair-share contribution to achieving the 2030 target. The fair share may very well be achieved through compliance with increasingly stringent State regulations that apply to new development, such as Title 24 and CALGreen; regulations on energy production, fuels, and motor vehicles that apply to both new and existing development; and voluntary actions to improve energy efficiency in existing development. In addition, compliance with the VMT targets adopted to comply with SB 375 and implemented through the RTP/SCS may be considered to adequately address GHG emissions from passenger cars and light-duty trucks. As shown in **Error! Reference source not found.** of Appendix B, the State strategy relies on the Cap-and-Trade Program to make up any shortfalls that may occur from the other regulatory strategies. The costs of Cap-and-Trade emission reductions will ultimately be passed on to the consumers of fuels, electricity, and products produced by regulated industries, which include future residents of development projects and other purchasers of products and services.

In addition, as identified in Section 3.8, the Project does not confliect with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of greenhouse gases.

Therefore, the cumulative impacts to global climate change / greenhouse gases would be ***less than cumulatively considerable.***

4.4 Hydrology and Water Quality (Section 3.10)

Less Than Cumulatively Considerable. The geographic area for cumulative hydrology analysis is the land area included in the Kings River Sub-basin (Basin), which underlies the Project site as well as the surrounding region.

Buildout of the City's General Plan and other pending projects in the Basin area will contribute to changes to stormwater collection systems and groundwater quality as well as an increase in water supply (groundwater) depletion. As discussed in Section 3.10 Hydrology and Water Quality, as well as the SB 610 Water Supply Assessment that was prepared, the Project will not result in significant impacts related to this impact area.

Stormwater / Drainage / Water Quality

Development of the Project in combination with future projects associated with buildout of the General Plan would increase the amount of impervious surfaces in the area. Stormwater runoff is typically directed into adjacent streets where it flows to the nearest drainage system. As with the Project, each new development would be required to design and develop a stormwater collection system that ensures appropriate water quality protection measures and sufficient capacity. All projects would be required to implement Best Management Practices and to conform to the existing NPDES water quality regulations. Therefore, cumulative impacts associated with stormwater collection and water quality is ***less than cumulatively considerable.***

Water Supply

The City of Fresno is part of the North Kings Groundwater Sustainability Agency (GSA) which is one of the seven GSA's within the Kings Groundwater Subbasin. The North Kings GSA submitted the Groundwater Sustainability Plan to the CA Department of Water Resources in January 2020 to begin a public comment period ending in April 20201. As the City of Fresno will provide water to the proposed Project (upon approval), and the City will be subject to the requirements of the GSA, the proposed Project does not conflict with any adopted water quality or sustainable groundwater management plan. The City's compliance with the GSA will ensure that impacts are ***less than cumulatively considerable.***

[1] https://www.northkingsgsa.org/groundwater-sustainability-plan/ (accessed Feb. 2020)

4.5 Noise (Section 3.13)

Less Than Cumulatively Considerable. The cumulative setting for Noise impacts consists of the existing and future noise sources that could affect the proposed Project or surrounding areas. Noise is generally localized because it reduces in magnitude as distance away from the source increases. Only projects within close proximity or those that produce ambient growth could potentially result in cumulative noise impacts. As shown in Section 3.13 - Noise, the Project will have a less than significant impact on noise.

Construction noise generated by the Project and future projects in the area would be temporary and would not add to the permanent noise environment or be considered as part of the cumulative context. Construction noise for future projects would be evaluated by the City on a project-by-project basis and each new development would be required to adhere to existing noise regulations and ordinances.

Operational (traffic) noise would occur as a result of increased traffic on local roadways due to the proposed Project. As identified in Section 3.13, the Project itself will have a less than significant impact on noise. Future projects were considered as part of the cumulative analysis, with particular regard to cumulative traffic/vehicle noise. However, as new projects are proposed, the City will evaluate noise impacts on a project-by-project basis. Any future projects would be required to mitigate their noise impacts.

The project's cumulative impacts on noise are thus considered ***less than cumulatively considerable.***

4.8 Public Services (Section 3.15)

Less Than Cumulatively Considerable. The geographic area for cumulative Public Services analysis is the land area covered by the City's General Plan (including areas outside the City limits but within the Sphere of Influence) as well as the list of approved or "pipeline" projects previously identified.

As discussed in Section 3.15 Public Services, the Project will have a less than significant impact on public services (police, fire, schools, public facilities). The Project is required to mitigate its impacts to these services by payment of fees or equivalent in-lieu as determined by the City. As future development occurs in within the General Plan area, the City will review projects on a case-by-case basis to determine potential future impacts on public services. Compliance with the

City's General Plan policies and procedures, as well as payment of public service mitigation fees (or in-lieu equivalent) will ensure that future developments do not exceed the City's ability to provide services. As such, cumulative impacts to public services would be ***less than cumulatively considerable.***

4.9 Transportation/Traffic Impacts (Section 3.17)

Less Than Cumulatively Considerable. The cumulative setting for transportation impacts is the roadway system on and around the Project site, including any roadways or intersections that may be impacted by the Project. A cumulative conditions analysis was performed in the Project Traffic Impact Analysis (Appendix D and D1) to identify potential cumulative impacts in year 2035. It was determined that the proposed Project would create new impacts on circulation conditions on the local and regional traffic and transportation network. The cumulative impacts analyses in this document is based in part on the list of approved or "pipeline" projects as identified in Table XVI of the Traffic Impact Analysis.

The Cumulative Year 2035 plus Project (Buildout) Traffic Conditions scenario assumes that Gettysburg Avenue exists between Garfield Avenue and Grantland Avenue, that Ashlan Avenue exists between Garfield Avenue and Grantland Avenue, that Garfield Avenue exists between Gettysburg Avenue and Ashlan Avenue, that Gettysburg Avenue exists between Bryan Avenue and Hayes Avenue, that Gettysburg Avenue exists between Bryan Avenue and Hayes Avenue, that Veterans Boulevard exists north of Grantland Avenue and that Dakota Avenue exists east of Grantland Avenue. Figure 14 of Appendix D illustrates the Cumulative Year 2035 plus Project (Buildout) turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Cumulative Year 2035 plus Project (Buildout) Traffic Conditions scenario are provided in Appendix L of Appendix D. Tables 3.17-11 and 3.17-11a present a summary of the Cumulative Year 2035 plus Project (Buildout) peak hour LOS at the study intersections, while Table 3.17-12 presents a summary of the Cumulative year 2035 plus Project (Buildout) LOS for the study segments.

Table 3.17-11
Cumulative Year 2035 Plus Project Intersection LOS Results

ID	Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Grantland Avenue / Barstow Avenue	Two-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	36.1	D	20.8	C
2	Garfield Avenue / Shaw Avenue	Two-Way Stop	30.6	D	29.3	D
3	Grantland Avenue / Shaw Avenue	Signalized	54.4	D	**62.5**	**E**
		Signalized (Mitigated)	47.8	D	46.3	D
4	Veterans Boulevard / Shaw Avenue	Signalized	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	39.1	D	53.2	D
5	Bryan Avenue / Shaw Avenue	Two-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	18.6	B	20.2	C
6	Hayes Avenue / Shaw Avenue	One-Way Stop	**>120.0**	**F**	**61.3**	**F**
		Signalized (Mitigated)	21.6	C	32.7	C
7	Grantland Avenue / Gettysburg Avenue	Two-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	50.3	D	35.3	D
8	Veterans Boulevard / Gettysburg Avenue	Signalized	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	43.6	D	32.7	C
9	Bryan Avenue / Gettysburg Avenue	Two-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	41.6	D	21.5	C
10	Parc West Drive / Ashlan Avenue	Roundabout	4.7	A	5.2	A
11	Grantland Avenue / Ashlan Avenue	Two-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	38.5	D	33.1	C
12	Bryan Avenue / Ashlan Avenue	All-Way Stop	**>120.0**	**F**	**53.9**	**F**
		Signalized (Mitigated)	30.3	C	28.9	C
13	Hayes Avenue / Ashlan Avenue	All-Way Stop	24.9	C	22.0	C
14	Polk Avenue / Ashlan Avenue	All-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	36.6	D	31.0	C
15	Cornelia Avenue / Ashlan Avenue	Signalized	39.8	D	30.6	C
16	Grantland Avenue / Dakota Avenue	One-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	19.0	B	16.4	B
17	Grantland Avenue / Shields Avenue	All-Way Stop	**>120.0**	**F**	**>120.0**	**F**
		Signalized (Mitigated)	55.0	D	44.2	D

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls.
LOS for two-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table 3.17-11a
Cumulative Year 2035 Plus Project Intersection LOS Results

ID	Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	Herndon Avenue / SR 99 NB Off-Ramp	Signalized	27.9	C	35.9	D
2	Grantland Avenue / SR 99 SB On-Ramp	Signalized	0.2	A	0.2	A
3	Polk Avenue / Shaw Avenue	Signalized	**118.4**	**F**	**>120.0**	**F**
		Signalized (Improved)	54.8	D	46.6	D
4	SR 99 SB Ramps / Shaw Avenue	Signalized	**74.0**	**E**	**95.8**	**F**
		Signalized (Improved)	17.7	B	46.9	C
5	SR 99 NB Ramps / Shaw Avenue	Signalized	34.3	C	**106.3**	**F**
		Signalized (Improved)	23.8	C	41.4	D
6	SR 99 SB Off-Ramp / Ashlan Avenue	Signalized	28.6	C	35.6	D
7	SR 99 NB Off-Ramp / Ashlan Avenue	Signalized	32.1	C	**101.9**	**F**
		Signalized (Improved)	31.7	C	46.4	D

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls.
LOS for two-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table 3.17-12
Cumulative Year 2035 Plus Project Segment LOS Results

ID	Segment	Limits	Lanes	24-hour Volume	LOS
1	Shaw Avenue	Grantland Avenue and Veterans Boulevard	2	14,924	D
2	Shaw Avenue	Veterans Boulevard and Bryan Avenue	2	25,384	F
			4 (Mitigated)		C
3	Shaw Avenue	Bryan Avenue and Hayes Avenue	2	21,960	F
			4 (Mitigated)		C
4	Garfield Avenue	Shaw Avenue and Gettysburg Avenue	2	958	C
5	Grantland Avenue	Shaw Avenue and Veterans Boulevard	2	11,834	C
6	Grantland Avenue	Veterans Boulevard and Gettysburg Avenue (WL)	2	31,535	F
			4 (Mitigated)		D
7	Grantland Avenue	Gettysburg Avenue (WL) and Ashlan Avenue	2	28,165	F
			4 (Mitigated)		C
8	Grantland Avenue	Ashlan Avenue and Dakota Avenue	2	23,828	F
			4 (Mitigated)		C
9	Grantland Avenue	Dakota Avenue and Shields Avenue	2	25,698	F
			4 (Mitigated)		C
10	Ashlan Avenue	Grantland Avenue and Bryan Avenue	3	12,143	C
11	Ashlan Avenue	Bryan Avenue and Hayes Avenue	2	10,762	C
12	Ashlan Avenue	Hayes Avenue and Polk Avenue	2	8,394	C

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Under this scenario, the intersections of Grantland Avenue and Barstow Avenue, Grantland Avenue and Shaw Avenue, Veterans Boulevard and Shaw Avenue, Bryan Avenue and Shaw Avenue, Hayes Avenue and Shaw Avenue, Grantland Avenue and Gettysburg Avenue, Veterans Boulevard and Gettysburg Avenue, Bryan Avenue and Gettysburg Avenue, Grantland Avenue and Ashlan Avenue, Bryan Avenue and Ashlan Avenue, Polk Avenue and Ashlan Avenue, Grantland Avenue and Dakota Avenue, Grantland Avenue and Shields Avenue, Polk Avenue and Shaw Avenue, State Route 99 Southbound Ramps and Shaw Avenue, State Route 99 Northbound Ramps and Shaw Avenue, and State Route 99 Northbound Off-Ramp and Ashlan Avenue are projected to exceed their LOS threshold during one or both peak periods. To improve the LOS at these intersections, it is recommended that the following improvements be implemented.

- Grantland Avenue / Barstow Avenue
  - Add an eastbound left-turn lane;
  - Modify the eastbound left-through-right lane to a through-right lane;
  - Add a westbound left-turn lane;
  - Modify the westbound left-through-right lane to a through-right lane;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.
- Grantland Avenue / Shaw Avenue

- Modify the westbound through-right lane to a through lane;
- Add a westbound trap right-turn lane;
- Add a second southbound left-turn lane with a receiving lane east of Grantland Avenue;
- Modify the traffic signal to implement overlap phasing of the westbound right-turn with the southbound left-turn phase;
- Prohibit southbound to northbound U-turn movements; and
- Modify the traffic signal to accommodate the added lanes.

- Veterans Boulevard / Shaw Avenue
  - Modify the eastbound through-right lane to a through lane;
  - Add a second eastbound through lane with a receiving lane east of Veterans Boulevard;
  - Add an eastbound right-turn lane;
  - Modify the westbound through-right lane to a through lane;
  - Add a second westbound through lane with a receiving lane west of Veterans Boulevard;
  - Add a westbound right-turn lane;
  - Modify the northbound through-right lane to a through lane;
  - Add a third northbound through lane with a receiving lane north of Shaw Avenue;
  - Add a northbound right-turn lane;
  - Add a second southbound left-turn lane;
  - Add a third southbound through lane with a receiving lane south of Shaw Avenue;
  - Modify the traffic signal to implement overlap phasing of the westbound right-turn with the southbound left-turn phase;
  - Prohibit southbound to northbound U-turn movements; and

- Modify the traffic signal to accommodate the added lanes.

- Bryan Avenue / Shaw Avenue
  - Modify the eastbound through-right lane to a through lane;
  - Add a second eastbound through lane with a receiving lane east of Bryan Avenue;
  - Add an eastbound right-turn lane;
  - Add a second westbound through lane with a receiving lane west of Bryan Avenue;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.

- Hayes Avenue / Shaw Avenue
  - Add a westbound left-turn lane;
  - Modify the westbound left-through lane to a through lane;
  - Modify the northbound left-right lane to a left-turn lane;
  - Add a northbound right-turn lane;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.

- Grantland Avenue / Gettysburg Avenue
  - Add a westbound left-turn lane;
  - Modify the westbound left-through-right lane to a through-right lane;
  - Add second and third northbound through lanes with receiving lanes north of Gettysburg Avenue;
  - Add a southbound left-turn lane;
  - Modify the southbound left-through-right lane to a through lane;
  - Add a second southbound through lane with a receiving lane south of Gettysburg Avenue;
  - Add a southbound right-turn lane;

  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.

- Veterans Boulevard / Gettysburg Avenue
  - Modify the eastbound through-right lane to a through lane;
  - Add an eastbound right-turn lane;
  - Modify the westbound through-right lane to a through lane;
  - Add a westbound right-turn lane;
  - Add second and third northbound through lanes with receiving lanes north of Gettysburg Avenue;
  - Add a second southbound through lane with a receiving lane south of Gettysburg Avenue;
  - Implement overlap phasing of the westbound right-turn with the southbound left-turn phase; and
  - Modify the traffic signal to accommodate the added lanes.

- Bryan Avenue and Gettysburg Avenue
  - Modify the westbound through-right lane to a through lane;
  - Add a westbound right-turn lane;
  - Modify the northbound through-right lane to a through lane;
  - Add a northbound right-turn lane;
  - Modify the southbound through-right lane to a through lane;
  - Add a southbound right-turn lane;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.

- Grantland Avenue / Ashlan Avenue
  - Modify the northbound through-right lane to a right-turn lane;

  - Modify the southbound right-turn lane to a through-right lane with a receiving lane south of Ashlan Avenue;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.
- Bryan Avenue / Ashlan Avenue
  - Modify the westbound through-right lane to a through lane;
  - Add a westbound right-turn lane;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lane.
- Polk Avenue / Ashlan Avenue
  - Modify the westbound through-right lane to a through lane;
  - Add a westbound right-turn lane;
  - Modify the northbound through-right lane to a through lane;
  - Add a northbound right-turn lane;
  - Modify the southbound through-right lane to a through lane;
  - Add a southbound right-turn lane;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.
- Grantland Avenue / Dakota Avenue
  - Modify the northbound right-turn lane to a through-right lane with a receiving lane north of Dakota Avenue;
  - Add a second southbound through lane with a receiving lane south of Dakota Avenue;
  - Signalize the intersection with protective left-turn phasing on all approaches; and
  - Modify the intersection to accommodate the added lanes.
- Grantland Avenue / Shields Avenue

- Add an eastbound left-turn lane;
- Modify the eastbound left-through-right lane to a through-right lane;
- Add a westbound left-turn lane;
- Modify the westbound left-through-right lane to a through lane;
- Add a westbound right-turn lane;
- Add a northbound left-turn lane;
- Modify the northbound left-through-right lane to a through lane;
- Add a northbound through-right lane with a receiving lane north of Shields Avenue;
- Add a southbound left-turn lane;
- Modify the southbound left-through-right lane to a through lane;
- Add a second southbound through lane with a receiving lane south of Shields Avenue;
- Add a southbound right-turn lane;
- Signalize the intersection with protective left-turn phasing on all approaches; and
- Modify the intersection to accommodate the added lanes.

- Polk Avenue and Shaw Avenue
  - Add a second westbound through lane with a receiving lane west of Polk Avenue;
  - Modify the westbound trap right-turn lane to a standard right-turn lane (see Queuing Analysis for recommended storage capacity);
  - Modify the northbound through-right lane to a through lane;
  - Add a northbound right-turn lane;
  - Prohibit westbound to eastbound U-turn movements; and
  - Modify the traffic signal to implement overlap phasing of the northbound right-turn with the westbound left-turn phase and accommodate the added lanes.

- State Route 99 Southbound Ramps and Shaw Avenue
  - Add a second eastbound through lane with a receiving lane east of State Route 99 Southbound Ramps;
  - Modify the eastbound trap right-turn lane to a standard right-turn lane (see Queuing Analysis for recommended storage capacity);
  - Add a second westbound left-turn lane with a receiving lane south of Shaw Avenue; and
  - Modify the traffic signal to accommodate the added lanes.
- State Route 99 Northbound Ramps and Shaw Avenue
  - Add a second eastbound through lane with a receiving lane east of State Route 99 Northbound Ramps; and
  - Modify the traffic signal to accommodate the added lanes.
- State Route 99 Northbound Ramps and Ashlan Avenue
  - Add a second northbound left-turn lane;
  - Modify the northbound left-through-right lane to a through-right lane; and
  - Modify the traffic signal to implement protective left-turn phasing in all directions and overlap phasing of the southbound right-turn with the eastbound left-turn phase and accommodate the added lanes.
  - It is worth noting that improvements to the State Route 99 Northbound Off-Ramp and Ashlan Avenue may not be necessary if the State Route 99 and Shaw Avenue Interchange is upgraded. However, if improvements to the State Route 99 and Shaw Avenue Interchange are not implemented, the detailed recommended improvements presented under this scenario may be necessary in order to improve the LOS. Therefore, it is recommended that the City and Caltrans monitor the State Route 99 Northbound Off-Ramp to Ashlan Avenue.

Under this scenario, the segments of Shaw Avenue between Veterans Boulevard and Hayes Avenue and the segments of Grantland Avenue between Veterans Boulevard and Shields Avenue are projected to operate at an unacceptable LOS. To improve the LOS of these segments, it is recommended that the following improvements be implemented.

- Shaw Avenue between Veterans Boulevard and Bryan Avenue

  - Modify Shaw Avenue to accommodate two lanes in each direction

- Shaw Avenue between Bryan Avenue and Hayes Avenue
  - Modify Shaw Avenue to accommodate two lanes in each direction

- Grantland Avenue between Veterans Boulevard and Gettysburg Avenue (WL)
  - Modify Grantland Avenue to accommodate two lanes in each direction

- Grantland Avenue between Gettysburg Avenue (WL) and Ashlan Avenue
  - Modify Grantland Avenue to accommodate two lanes in each direction

- Grantland Avenue between Ashlan Avenue and Dakota Avenue
  - Modify Grantland Avenue to accommodate two lanes in each direction

- Grantland Avenue between Dakota Avenue and Shields Avenue
  - Modify Grantland Avenue to accommodate two lanes in each direction

Cumulative Year 2035 Plus Project Mitigation Measures: See Tables 3.17-13 and 3.17-13a in Section 3.17 for a summary of traffic/transportation mitigation measures.

The City will require various roadway improvements and payment of traffic impact fees as described in Section 3.17 to mitigate Project-related cumulative impacts (TRA-1 and TRA-2). Ultimately, the improvements outlined in the mitigation measures will ensure that Project-related traffic impacts will be less than significant.

Future projects were considered as part of the cumulative analysis, however, as new projects are proposed, the City will evaluate traffic impacts on a project-by-project basis. Any future projects would be required to mitigate their cumulative impacts as well. Implementation of the proposed mitigation measures will ensure that impacts to transportation / traffic are ***less than cumulatively considerable.***

4.10 Utilities (Section 3.19)

Less Than Cumulatively Considerable. Buildout of the City's General Plan and other pending projects in the Project area will contribute to changes to the City's wastewater treatment system, water utilities and solid waste disposal systems. See Section 4.8 for the discussion about cumulative impacts to water supply. The geographic area for cumulative utility analysis is the

land area included in the City's General Plan. As discussed in Section 3.19 Utilities, the Project will not result in significant impacts related to this impact area.

As with the proposed Project, for future projects, the City collects development impact fees to help cover the cost of wastewater (sewer), water, and solid waste infrastructure and facilities. In addition, revenue from sales tax from future projects assists in maintaining these services. The City evaluates impact fees from new development on a project-by-project basis. Continued implementation of development impact fees will ensure that cumulative impacts are ***less than cumulatively considerable.***

Chapter 5

PROJECT ALTERNATIVES

PROJECT ALTERNATIVES

5.1 Introduction

CEQA Guidelines Section 15126.6 requires the consideration of a range of reasonable alternatives to the proposed Project that could feasibly attain most of the objectives of the proposed Project. The Guidelines further require that the discussion focus on alternatives capable of eliminating significant adverse impacts of the project or reducing them to a less-than significant level, even if the alternative would not fully attain the project objectives or would be more costly. According to CEQA Guidelines, the range of alternatives required in an EIR is governed by the "rule of reason" that requires an EIR to evaluate only those alternatives necessary to permit a reasoned choice. An EIR need not consider alternatives that have effects that cannot be reasonably ascertained and/or are remote and speculative.

The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

CEQA Guidelines §15126.6(e) identifies the requirements for the "No Project" alternative. The specific alternative of "no project" shall also be evaluated along with its impact. The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The no project alternative analysis is not the baseline for determining whether the proposed project's environmental impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline (see Section 15125).

Alternative locations can also be evaluated if there are feasible locations available. Each alternative is evaluated against the Project objectives and criteria established by the Lead Agency.

5.2 Project Objectives

In accordance with CEQA Guidelines Section 15124(b), the following are the City of Fresno's Project objectives:

- To provide a variety of housing opportunities with a range of densities, styles, sizes and values that will be designed to satisfy existing and future demand for quality housing in the area.
- To provide a sense of community and walkability within the development through the use of street patterns, parks/open space areas, landscaping and other Project amenities.
- To create a successful and financially feasible Project by meeting the housing needs of the area.
- To provide a residential development that assists the City in meeting its General Plan and Housing Element requirements and objectives.

5.3 Alternatives Considered in this EIR

The following alternatives were considered:

- No Project (site remains vacant and unoccupied)
- No Project (site is developed according to existing Land Use and Zoning designations)
- Increased Project Density (reduced footprint)
- Reduced (50%) Project (same footprint)

No Project Alternative (site remains vacant and unoccupied)

CEQA Section 15126.6(e) requires the discussion of the No Project Alternative "to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project." The No Project scenario in this case consists of retaining the property in its original configuration, with no construction or operation of any development (other than for agricultural purposes) on the proposed site. Under this alternative, the site remains vacant and/or in agricultural operations and no new development would occur on the site.

Description

This alternative would avoid both the adverse and beneficial effects of the project. This alternative would avoid site-disturbance and construction-related impacts associated with construction of the proposed Project. The No Project Alternative would avoid the generation of any environmental impacts.

Environmental Considerations

Continuation of the site as vacant and unoccupied, or in agricultural production would result in all environmental impacts being less than the proposed Project. There would be no changes to any of the existing conditions and there would be no impact to each of the 20 CEQA Checklist evaluation topics. The No-Project Alternative by definition would not meet the objectives of the proposed Project that were discussed earlier in this chapter.

No Project Alternative (site is developed according to existing Land Use and Zoning designations)

The No Project scenario in this case consists of retaining the property in its existing configuration, with development occurring under existing General Plan and Zoning designations. Under this alternative, the following changes would not occur:

- General Plan Amendment: Medium Density Residential land use designation (5.0 – 12.0 DU/acre), Traffic Circulation Plan, Parks, Open Space and Trail Network.
- Rezoning: A 10-acre section originally intended for commercial development will be re-zoned RS-5 and will include removal of the previous Westlake Development Project conditions to be replaced with new conditions appropriate for the Parc West Development. The remaining acreage will remain RS-5 and will not require land use designation or zoning changes.

The site would remain primarily Medium Density Residential (5.0 – 12 D.U./acre) with a 10-acre portion of the site at the southeast corner remaining as Community Commercial. Under these designations, the land could be developed with between 700 – 1,680 total dwelling units, along with up to 10 acres of Community Commercial.

Description

This alternative would not avoid site-disturbance and construction-related impacts associated with construction of the proposed Project. Construction and operation under existing Land Use and Zoning Designations would result in environmental impacts that are likely equal to or in some cases greater than the proposed project. The majority, if not all of project impacts are likely to occur under these conditions.

Environmental Considerations

Most of the environmental issues associated with this alternative would be similar to those of the proposed Project. However, this alternative does likely increase impacts to the following areas:

- Air Quality: The site could potentially be developed with between 700 – 1,680 total dwelling units, along with an additional 10 acres of Community Commercial. Compared to the proposed Parc West development of 844 dwelling units, with no commercial component, it is likely that this alternative would result in a larger number of vehicle trips, and thus greater air quality impacts.
- Hydrology: The site could potentially be developed with between 700 – 1,680 total dwelling units, along with an additional 10 acres of Community Commercial. Compared to the proposed Parc West development of 844 dwelling units, with no commercial component, it is likely that this alternative would result in a larger demand for water.
- Noise: The site could potentially be developed with between 700 – 1,680 total dwelling units, along with an additional 10 acres of Community Commercial. Compared to the proposed Parc West development of 844 dwelling units, with no commercial component, it is likely that this alternative would result in a larger number of vehicle trips, and thus greater noise impacts. The commercial development could also potentially produce noise impacts.
- Public Services: The site could potentially be developed with between 700 – 1,680 total dwelling units, along with an additional 10 acres of Community Commercial. Compared to the proposed Parc West development of 844 dwelling units, with no commercial component, it is likely that this alternative would result in a larger increase in population, as well as increased activity in the area associated with the commercial development. This would result in greater public services impacts to: police, fire, schools and other public services.
- Traffic: The site could potentially be developed with between 700 – 1,680 total dwelling units, along with an additional 10 acres of Community Commercial. Compared to the proposed Parc West development of 844 dwelling units, with no commercial component,

it is likely that this alternative would result in a larger increase in population, as well as an increase in vehicle trips associated with the commercial development. This would result in a larger number of overall vehicle trips.

Increased Project Density (reduced project footprint)

Description

This alternative would keep the same general overall unit count / population, but would decrease the footprint of the project by 50%. This would likely require additional General Plan land use and Zoning designation changes to accommodate an increase in allowable density per acre. However, with the reduction in footprint, there may be a decrease in certain environmental impacts as discussed below.

Environmental Considerations

Most of the environmental issues associated with this alternative would be similar to those of the proposed Project. However, this alternative does likely reduce impacts to the following areas:

- Aesthetics: The reduced project footprint would likely reduce overall visual impacts to/from surrounding areas. The amount of lighting would also be reduced. Impacts associated with this alterative would be less than the proposed Project.
- Agricultural Resources: The reduced project footprint would reduce the amount of land that would be removed from agricultural operations. Impacts associated with this alterative would be less than the proposed Project.
- Biological Resources: Although no significant biological resource impacts would occur as a result of the proposed Project, a reduced project footprint would reduce the amount of land that would be developed. This would reduce potential impacts to protected plant and animal species. Impacts associated with this alterative would be less than the proposed Project.
- Cultural Resources: Although no significant cultural resource impacts would occur as a result of the proposed Project, a reduced project footprint would reduce the amount of land that would be developed. This would reduce potential impacts to protected plant and animal species. Impacts associated with this alterative would be less than the proposed Project.
- Geology/Soils: The reduced project footprint would reduce the amount of land that would be developed. This would reduce the amount of new impervious surfaces introduced to

the area and would result in less land modification than the proposed Project. Impacts associated with this alterative would be less than the proposed Project.

Reduced (50%) Project Density (same footprint)

A reduction of 50% in the Project is a reasonable amount to illustrate what impact such an alternative would have on the significant effects of the proposed Project.

Description

This alternative would keep the same acreage, but would reduce the number of units from 844 to 422. All other project components, including overall acreage would remain (parks, etc.).

Environmental Considerations

Most of the environmental issues associated with this alternative would be similar to those of the proposed Project. However, this alternative does likely reduce impacts to the following areas:

- Air Quality: According to the Air Quality Impact Analysis and Greenhouse Gas Study (See Appendix B of this document) prepared for the Project, the proposed Project will have annual air pollutant emission rates which are less than the applicable San Joaquin Valley Air Pollution Control District thresholds of significance. Even though the proposed project is below existing thresholds of significance, this alternative would have lower annual emission rates than the proposed project for the following criteria pollutants: CO, NOx, VOC, Sox, PM10 and PM2.5. Air pollutant emission rates associated with this alternative are thus lower than the proposed project.
- Hydrology: According to Section 3.10, the Project will be required to mitigate its impacts on potable water use. However, the impact was determined to be less than significant. Even though the proposed Project is below existing thresholds (with mitigation), a reduced project would decrease potable water impacts generated by the Project. Therefore, hydrologic impacts are lower than the proposed Project.
- Noise: According to Section 3.13, the Project will cause increased ambient noise levels along the roadways associated with the increase of Project-related vehicles. However, this increase is not considered significant. Even though the proposed Project is below existing thresholds, a reduced project would decrease noise impacts generated by the Project. Therefore, noise impacts are lower than the proposed Project.
- Public Services: As described in Section 3.15, the Project will result in the need for additional police and fire staff to cover the potential increase in public safety calls

associated with the Project. A reduced project is likely to result in less public safety calls because of the reduced number of residential units and a reduced population. Thus, Public Service impacts are less than the proposed Project.

- Traffic: According to the Traffic Study prepared for the Project (Appendix D and D1), the Project will generate traffic impacts that could potentially cause significant impacts, which require mitigation. It is likely that a reduced project would result in less mitigation being required than the proposed Project. Thus, traffic impacts are lower than the proposed Project.

5.4 Summary of Potential Impacts of Alternatives

Table 5-1 is a generalized comparative assessment of potential impacts of the alternatives.

Table 5-1
Alternatives Potential Impact Analysis

Environmental Issues	No Project / No Development	No Project / Development with existing designations	Increased Density / Reduced Footprint	Reduced (50%) Project
Aesthetics	Less	Similar / Increased	Less	Similar
Agriculture / Forest Resources	Less	Similar	Less	Similar
Air Quality	Less	Similar / Increased	Similar	Less
Biological Resources	Less	Similar	Less	Similar
Cultural Resources	Less	Similar	Less	Similar
Geology and Soils	Less	Similar	Less	Similar
Greenhouse Gas Emissions	Less	Similar / Increased	Similar	Less
Hazards and Hazardous Materials	Less	Similar / Increased	Similar	Similar
Hydrology and Water Quality	Less	Similar / Increased	Similar	Less
Land Use / Planning	Less	Similar	Similar	Similar

Environmental Issues	No Project / No Development	No Project / Development with existing designations	Increased Density / Reduced Footprint	Reduced (50%) Project
Noise	Less	Similar / Increased	Similar	Less
Population / Housing	Less	Similar / Increased	Similar	Less
Public Services	Less	Similar / Increased	Similar	Less
Recreation	Less	Similar / Increased	Similar	Less
Transportation and Traffic	Less	Similar / Increased	Similar	Less
Tribal Cultural Resources	Less	Similar	Less	Similar
Utilities and Service Systems	Less	Similar / Increased	Similar	Less
Cumulative Impacts	Less	Similar / Increased	Similar	Less
Impact Reduction	Yes	No	Yes	Yes

Environmentally Superior Alternative

Based on a review of the alternatives evaluated in this chapter, the No Project (no development) Alternative would result in the fewest impacts on the environment. However, the No Project Alternative would not meet the City's objectives, as identified in this chapter.

Apart from the No Project Alternative, the Alternative Reduced (50%) Project would be the Environmentally Superior alternative because it would result in less adverse physical impacts to the environment with regard to air, water, noise, public services, population/housing, utilities and traffic. However, the Reduced (50%) Project does not meet all of the Project objectives, particularly with regard to financial feasibility.

Summary and Determination

Only the No Project and Reduced Project Alternatives could potentially result in fewer impacts than the proposed Project's impacts. These Alternatives however, would not meet the objectives

of the proposed Project. After this full, substantial, and deliberate analysis, the proposed Project remains the preferred alternative.

Chapter 6

CEQA Considerations

CEQA CONSIDERATIONS

6.1 Growth-Inducing Impacts

CEQA Section 15126 (d) requires that any growth-inducing aspect of a project be addressed in an EIR. This discussion includes consideration of ways in which the proposed Project could directly or indirectly foster economic or population growth with the construction and operation of the proposed Project in the surrounding area. Projects which could remove obstacles to population growth (such as a major public service expansion) are also considered in this discussion. The proposed Project is the establishment of a residential development that is being proposed in response to the demand for housing in the area. Upon approval, the Project would be consistent with the City of Fresno's General Plan and will connect to all existing City utility services. The proposd Project would create a relatively minor amount of new (temporary) employment opportunities during construction; however, those positions would likely be readily filled by the existing employment base. There are no new businesses associated with the Project, as the existing commercial designation is proposed to be changed to residential uses. There are no other aspects of the Project (such as creation of oversized utility lines, zone changes, etc.) that would induce further growth in the area. The proposed Project would not result in significant growth-inducing impacts.

Conclusion: The project would have ***less-than-significant*** growth-inducing impacts.

6.2 Irreversible Environmental Changes

Section 15126(f) of the CEQA Guidelines requires that an EIR include a discussion of significant irreversible environmental changes that would result from project implementation. CEQA Section 15126.2(c) identifies irreversible environmental changes as those involving a large commitment of nonrenewable resources or irreversible damage resulting from environmental accidents.

Energy use and building resources

Irreversible changes associated with the project include the use of nonrenewable resources during construction, including concrete, plastic, and petroleum products. During the operational phase of the proposed Project, energy would be used for lighting, heating, cooling, and other requirements. The use of these resources would not be substantial and would not constitute a significant effect.

Loss of agricultural land

The Project will result in the loss of approximately 160 acres of almond orchard that will be converted to residential housing. However, the site has been zoned for residential use by the City of Fresno and the City's General Plan has designated the site for urban development.

The EIR for the City of Fresno General Plan found the conversion of applicable agricultural land, including the Project site, to urban uses to be a significant and unavoidable impact. As part of adopting the City General Plan, the Fresno City Council adopted findings of fact and a statement of overriding considerations that indicated urban development was of greater benefit to the community than preserving agricultural land within city limits. Although conversion of the Project area to urban uses would reflect the land use assumptions contained in the City of Fresno General Plan, farmland is an important resource to the region. As such, Mitigation Measure AG – 1 is included to reduce potential conflicts between urban and agricultural uses (See Project Specific Mitigation Measure Monitoring Checklist). This measure includes a Right-to-Farm Covenant and will help ensure that agricultural operations in the area can be maintained.

In addition, the Project site was evaluated for loss of agricultural lands under the Westlake Development Project EIR. That EIR also found the conversion of the applicable agricultural land to be significant and unavoidable and a Statement of Overriding Considerations was adopted. Since the proposed Project-related lands have previously been evaluated for loss of agricultural lands, and because the Project site has been annexed into the City (and the land use designations support residential and commercial uses), the proposed Project does not result in any impacts beyond what has already been analyzed in previous documents pertaining to loss of agricultural lands associated with the proposed Project. Therefore, the Project has ***no additional impact*** on agricultural resources. However, the loss of agricultural land is considered an irreversible environmental change.

Conclusion: The project would have ***less-than-significant*** irreversible environmental changes.

Chapter 7

PREPARERS

PREPARERS

7.1 List of Preparers

Crawford & Bowen Planning, Inc. (EIR Consultants)

- Travis Crawford, AICP, Principal Environmental Planner
- Emily Bowen, LEED AP, Principal Environmental Planner

JLB Traffic Engineering, Inc. (Traffic Study)

Mitchell Air Quality Consulting (Air Quality/Energy/GHG Study)

7.2 Persons and Agencies Consulted

City of Fresno

- Chris Lang, Planner – City of Fresno
- Israel Trejo, Planner – City of Fresno

Appendices

Appendix A

IS/NOP & Comment Letters

Appendix B

Air Quality / GHG Study

Appendix C

SB 610 Water Supply Assessment

Appendix D

Traffic Impact Assessment

Appendix D1

Traffic Impact Assessment (Addendum)

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