

FRESNO



Fresno General Plan Update Public Utilities and Services

**PRELIMINARY
WORKSHOP
DISCUSSION
DRAFT**

May 2013

Development and Resource
Management Department

City of
FRESNO 

6

Public Utilities and Services

Preliminary Workshop Discussion Draft of the City of Fresno General Plan Update

The Public Utilities and Services chapter is one of the many Elements noted below that when combined will ultimately comprise the Draft City of Fresno General Plan Update, anticipated to be released as a comprehensive document for public review and formal comments in July - August 2013.

- Urban Form, Land Use, and Design Element
- Mobility & Transportation Element
- Parks, Open Space and Schools Element
- Healthy Communities Element
- Historic and Cultural Resources Element
- Resource Conservation and Resilience Element
- Public Utilities and Services Element
- Noise and Safety Element
- Economic Development and Fiscal Sustainability Element
- Implementation Element
- Housing Element¹

This version of the Public Utilities and Services Element is a **Preliminary Workshop Discussion Draft of the City of Fresno General Plan Update**, intended for introduction to the public, with a request for public review and comments to be received via emails, letters, and oral presentations as part of a series of workshops with the Fresno Planning Commission and other community engagement meetings scheduled through July - August of 2013.

One of the fundamental responsibilities of the City is to ensure provision of adequate public facilities that will support existing development as well as projected growth. The City provides police, fire protection, potable water, sewage collection and treatment, and solid waste pickup, while the Fresno Metropolitan Flood Control District provides storm drainage and flood control. Continued urban development under the General Plan, within the city limits and the Sphere of Influence, may require new or expanded facilities and increased service capacities. The capital costs of these facilities and services will be borne by the development community, consistent with the policies of the Economic Development and Fiscal Sustainability Element. This Public Utilities

¹ The City has already updated and approved the Housing Element as required by State law. Although not currently scheduled for preliminary workshop review, the Housing Element will be addressed in the Draft Fresno General Plan Update and the current version is available for public review. Technical amendments to the Housing Element needed for General Plan consistency will be addressed in the Draft Fresno General Plan Update as appropriate. The Housing Element's goals, objectives, policies and programs will be included in the General Plan, with any proposed technical amendments clearly indicated

and Services Element focuses on substantive issues related to these public facilities and services, include service standards, design and operational measures. Related issues are covered in other elements. Water conservation, for example, is addressed in the Resource Conservation and Resilience Element. Emergency response, flood hazards, and fire hazards are addressed in the Noise and Safety Element. Policies regarding the extension of utilities outside the city limits are in the Urban Form, Land Use, and Design Element.

Accompanying at the back of this chapter is Appendix A – Definitions of Terms and Concepts and Appendix B – Land Use Diagram, Existing Water Resources and Recharge Facilities Diagram, and Existing Wastewater System Diagram. These maps can also be viewed in the Map Atlas for Fresno at www.fresno.gov/Government/DepartmentDirectory/DARM/AdvancedPlanning/Downloads.htm.

RELATIONSHIP TO GENERAL PLAN GOALS

This Element provides objectives and policies that support a wide range of General Plan goals, in particular the following:²

9. Promote a city of healthy communities and improve quality of life in existing neighborhoods.

Emphasize supporting existing neighborhoods in Fresno with safe, well maintained, and accessible streets, public utilities, education and job training, proximity to jobs, retail services, and health care, affordable housing, youth development opportunities, open space and parks, transportation options, and opportunities for home grown businesses.

12. Resolve existing public infrastructure and service deficiencies, make full use of existing infrastructure, and invest in improvements to increase competitiveness and promote economic growth.

Emphasize the fair and necessary costs of maintaining sustainable water, sewer, streets, and other public infrastructure and service systems in rates, fees, financing and public investments to implement the General Plan. Adequately address accumulated deferred maintenance, aging infrastructure, risks to service continuity, desired standards of service to meet quality-of-life goals, and required infrastructure to support growth, economic competitiveness and business development.

16. Protect and improve public health and safety.

² The commentary in italics following certain goals is not part of the goal itself, but is instead advisory and informational language intended to further discussion, clarify the goal, and help guide the objectives of the General Plan.

POLICE

The City of Fresno Police Department Patrol Division provides a full range of police services including uniformed patrol response to both emergency and non-emergency calls for service, crime prevention, pro-active tactical crime enforcement (including gang and violent crime suppression through the use of Impact Teams), and investigation of crimes utilizing District Detectives. These services are supplemented by the City of Fresno Police Department's Investigative Services Division, which is responsible for follow-up investigation on cases involving crimes against persons and property crimes, evaluation of crime and public safety intelligence information utilizing the Intelligence Unit, and pro-actively investigation of vice/narcotics related crimes. The City of Fresno Police Department Support Division encompasses Traffic Enforcement and Accident Prevention, Communications, and Records Bureaus as well as a Volunteer Services and Reserve Officers Unit.

In addition to these enforcement-related services, the City of Fresno Police Department also provides extensive crime prevention assistance through residence and business security inspections; neighborhood and business watch group formation programs; and public presentations.

The City of Fresno Police Department Professional Standards Division oversees the Internal Affairs, Fiscal Affairs, Grant, and Policy and Procedure Units as well as the Accountability and Compliance, Training, and Personnel Bureaus, along with Communications Assistance for Law Enforcement Act (CALEA) compliance.

KEY ISSUES

Safety is a fundamental concern for Fresno because the city has much higher rates of violent and property crime than California as a whole. As of 2009, Fresno's violent crime rate was 30 percent higher than the statewide rate; the property crime rate was 176 percent higher than the statewide rate, or almost three times as high. The City did experience a significant decrease in its rates of overall, violent, and property crime rates between 2001 and 2009, with all three decreasing by around 32 percent. However, the crime rate began increasing again in 2010 and 2011. Part of the reason may be due to reduced funding and resources for the City of Fresno Police Department, along with other cuts to City services during the current budget crisis. Economic Development and Fiscal Sustainability Element policies will address these needs with a long-term action plan.

Calls for police service are largely concentrated in the northeast and northwest sections of the city, though violent crime is concentrated in the southern part of the city. The calls that occur in north Fresno are generally along corridors surrounding Highways 99 and 41 and major arterials such as Blackstone Avenue and Herndon Avenue.

In a city as ethnically diverse as Fresno with 46.9% of the population Hispanic, 30% White, 12.6% Asian, 8.3% Black and 1.7% American Indian and Alaskan

Native and half of the population female³, effectiveness calls for law enforcement staffing to continue to strive to reflect the composition of the community in ethnic diversity and gender representation.

OBJECTIVE

PU-1 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.

IMPLEMENTING POLICIES

PU-1-a **Diverse Police Force.** Maintain an organization that is sensitive and responsive to the needs of a diverse community, recognizing and striving to provide a safe environment for the citizens of Fresno.

- Strive to increase ethnic diversity and gender representation of the law enforcement workforce to reflect the composition of the Fresno community.
- Maintain active involvement in youth development and delinquency prevention activities.
- Collaborate with community-based public, non-profit or private agencies to develop comprehensive narcotics and violence prevention programs designed to discourage delinquent behavior and narcotics abuse, and to encourage viable alternative behaviors.

PU-1-b **Involvement in General Plan.** 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 crime and to promote community surveillance.

- Facilitate Police Department communication with citizen advisory committees.
- Refer all appropriate development entitlements to the Police Department for review and comment.

³ 2010 Census by the United States Census Bureau

- PU-1-c **Safety Considerations in Development Approval.** Continue to identify and apply appropriate safety design and operational measures as conditions of development 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 state licensed, uniformed security.
- PU-1-d **Communication with Public.** Maximize communication and cooperative efforts with residents and businesses in order to identify crime problems and optimize the effectiveness of crime prevention measures and law enforcement programs.
- PU-1-e **Coordination with the Fresno County Sheriff's Office.** Maximize coordination between the Police Department and the Fresno County Sheriff's Office 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.
- PU-1-f **Standards of Service.** Continue to evaluate and when determined appropriate consider updating the City's standards for police service including the minimum and optimum levels of service 2 officers per 1,000 residents.
- PU-1-g **Plan for Optimum Service.** Create and consider adopting a program providing for targeted police services and establishing long-term steps for attaining and maintaining the optimum levels of service 2 officers per 1,000 residents.

FIRE



Top photo: 1877 Fresno Firefighters
Middle photo: Recent photo of Fresno Fire Engines
Bottom photo: Firefighters extinguishing a house fire

The City of Fresno Fire Department offers a full range of services including fire prevention, suppression, emergency medical care, hazardous materials and urban search and rescue response, as well as emergency preparedness planning and public education coordination. The City of Fresno Fire Department recently merged operational services with two adjacent fire protection districts and now has 24 fire stations that serve a 336-square mile area. The merging of operational services has provided an enhanced level of service to the area. The City has an automatic aid agreement with the City of Clovis whereby the nearest fire station responds to an emergency regardless of the jurisdiction within which it is located, and provides local and statewide mutual aid upon request.

Historically, 60 to 65 percent of all calls have been for medical emergencies, while 7 percent have been for structure fires. Other fire-related calls include vegetation fires, vehicle fires, and debris fires. Fresno averages two working multiple alarm fires every day that must be addressed despite the challenge of normal staffing levels being severely depleted. In addition to responding to calls, the City of Fresno Fire Department is involved in reviewing all building permits and subdivision maps to ensure access and fire suppression equipment (i.e., fire hydrants) are properly located. It also conducts new construction inspections of fire protection systems and routine fire and life safety inspections of existing buildings.

Fire prevention services are provided to all commercial, industrial, and residential establishments by routine fire and life safety inspections. Adoption of a local fire sprinkler ordinance in effect since 1979 requiring fire sprinklers in most buildings over 5000 square feet and more restrictive statewide residential housing unit fire sprinkler mandates have substantially reduced fire risk factors, thereby reducing the frequency and severity of extended fire attacks. In order to combat the threat of structure fires, the City requires that all new residential development be within the four minute response service area of a fire station. This number may be increased by applying additional conditions of approval (i.e., building separation distances, traffic preemption, enhanced onsite fire protection systems); however, it is uncommon for residential development to occur outside of a fire station four minutes response area.

KEY ISSUES

Inadequate Staffing and Inability to Meet Response Times

The City of Fresno Fire Department's target response time for the city service area (Fresno metropolitan area) is 6 minutes and 30 seconds from receipt of the 911 call to arrival on scene. This response time standard is critical to saving lives before flashover occurs and arriving in time to provide basic life support in situations such as sudden cardiac arrest, trauma, impaired breathing and other severe medical emergencies. In 2011, the City of Fresno Fire Department's response time was 7 minutes and 6 seconds for 90 percent of all calls. Although there are 19 fire stations in the metro area, staffing levels of 0.54 firefighters per 1,000 residents in 2011 are considerably lower in comparison to the state average of 0.81 firefighters per 1,000 residents. Daily minimum staffing is 66 firefighters; this is lower than the staffing levels of the 1970s.

The City of Fresno Fire Department has been unable to meet target response times due to cuts in the number of units available to respond. In 2009, for example, the City of Fresno Fire Department had 25 operational units, but in 2010 this number was reduced to 19 (a 24 percent reduction in available work force) though service level demands remained constant. This significant reduction in resources caused the City of Fresno Fire Department to change its operating model in an effort to keep apparatus available to respond within the desired response criteria for emergencies. Actions included were:

- Stopped responding to approximately 10,000 annual serious medical emergency calls;
- Moved all fire and life safety inspections to the Prevention Division, and
- Reduced availability for all public education outreach.

A long-term planning target would be to match the daily staffing levels to the service level demands.

The City is currently rated by the Insurance Services Office (ISO) as a Public Protection Class 3. Staffing reductions and other cuts since 2009 will likely cause this rating to drop to a Class 4 or 5, considered very poor for metropolitan cities. A new City of Fresno Fire Department Strategic Plan could be developed to acknowledge the lower service level objectives and lower ISO Public Protection Classification rating and new strategies formulated to attain the necessary improvements. For example, enhancement in fire prevention staffing, fire engine design and attainment of fire service accreditation could help shore up the final rating.

Inadequate Staffing and Inability to Provide Annual Fire Inspections of All Buildings and Provide Fire Safety Education

The expected level of service based on nationally recognized best practice for fire prevention services in a city the size of Fresno is the ability to provide annual fire and life safety inspections of all commercial, industrial, institutional, and multi-family buildings and to provide proactive fire safety public education programs. Due to current budget issues, many low and moderate fire and life safety hazard buildings are not being inspected and public education outreach has ceased. The eventual affect of this cut back in fire prevention services is yet to be determined, but it is anticipated that frequency of preventable fires will increase and the reliability of building fire protection systems will decrease due to lack of inspection and maintenance of those systems.

Facilities to Serve New Development

Existing facilities are not always adequate to maintain a sufficient level of services for future population growth in Fresno. Increased population densities in the Downtown and planned creation of mid-rise and high-rise mixed-use corridors and centers, at the locations shown on the Land Use Diagram (Figure LU-1) in Appendix B, will require commensurate increases in firefighter staffing, facilities and equipment to maintain current levels of service. Fire station location will become more dependent on density and availability than running distances between fire stations. Infill growth also may require the

reopening of the Broadway/Elizabeth station and/or restoring the number of fire apparatus and firefighters at the existing stations. Also, the current water system flow rate/pressure requires new development to utilize expensive additional equipment to meet service needs, especially for new mid-rise and high-rise buildings with mixed uses that include housing. Additionally, where infill development substantially increases density, or increases the building height, due to both the age and size of the distribution system may require upgrading to avoid negative impacts due to suction created by booster pumps, or to provide adequate flows and pressures for increased demands.

New development in the Sphere of Influence will need new fire stations. Areas east and west of Highway 99 north of Shaw Avenue and areas along the San Joaquin River Bluff are particularly difficult to access with fire engines based in existing stations and road networks.

The City of Fresno Fire Department does have land acquired or identified for new stations, but additional funds will need to be provided via new development or other sources to pay for land not acquired and new station construction, equipment, and staffing. The City of Fresno Fire Department owns land on Shaw Avenue west of Grantland Avenue allocated for the construction and relocation of Fire Station 18 and has identified sites near Willow/Jensen, Blythe/Herndon, Temperance/Belmont, Maple/Alluvial, and Friant/Fort Washington Area for future fire stations. Also needed are a new Training Center, Repair and Maintenance Facility, Joint Police/Fire Public Safety Complex and Communications Center, possibly located in the Downtown.

OBJECTIVE

PU-2 Using best practices as a model, ensure that the Fire Department's staffing and equipment resources are sufficient to meet all fire and emergency service level objectives and are provided in an efficient and cost effective manner.

IMPLEMENTING POLICIES

PU-2-a **Unify Fire Protection.** Pursue long-range transfer of fire protection service agreements with adjacent fire districts that, in concert with existing automatic aid agreements, will lead to the eventual unification of fire protection services in the metropolitan area.

PU-2-b **Maintain Ability.** Strive to continually maintain the Fire Department's ability to provide staffing and equipment resources to effectively prevent and mitigate emergencies in existing and new high-rise buildings and other high density residential and commercial land use developments.

- PU-2-c **Rescue Standards.** Develop appropriate standards, as necessary, for rescue operations, including, but not limited to, confined space, high angle, swift water rescues, and the unique challenges of a high speed rail corridor.
- PU-2-d **Station Siting.** Use the General Plan and specific plans, the City's GIS database, and a fire station location program to achieve optimum siting of future fire stations.
- PU-2-e **Service Standards.** Strive to achieve the following service level objectives 90 percent of the time:
- First Unit on Scene – First fire unit arriving with minimum of three firefighters and ability to apply suppressing agent within 6 minutes and 20 seconds from emergency call (7:30 with 911 processing time).
 - Effective Response Force – Provide sufficient number of firefighters on scene of an emergency (17 for low risk, 23 for high risk) within nine minutes and 20 seconds from time of alert to arrival.

OBJECTIVE

- PU-3 Enhance the level of fire protection to meet the increasing demand for services from an increasing population.

IMPLEMENTING POLICIES

- PU-3-a **Fire Prevention Inspections.** Develop strategies to enable the performance of annual fire and life safety inspection of all industrial, commercial, institutional, and multi-family residential buildings in accordance with national recognized standards for the level of service necessary for a large metropolitan area.
- PU-3-b **Risk Reduction Strategies.** Develop community risk reduction strategies that target high service demand areas, vulnerable populations (young children, elderly, non-English speaking residences, etc.) and high life hazards occupancies.
- PU-3-c **Public Education Strategies.** Develop strategies to re-establish and enhance routine public education outreach to all sectors of the community.
- PU-3-d **Review All Development Entitlements.** Continue Fire Department review of all development entitlements in order to encourage the inclusion of adequate on-site and off-site fire protection systems and features.

- PU-3-e **Building Codes.** Adopt and enforce amendments to construction and fire codes as determined appropriate to systematically reduce the level of risk to life and property from fire, commensurate with the City’s fire suppression capabilities.
- PU-3-f **Adequate Infrastructure.** Continue to pursue the provision of adequate water supplies, hydrants, and appropriate property access to allow for adequate fire suppression within all existing urban areas as well as newly developing areas.
- PU-3-g **Cost Recovery.** Continue to consider appropriate codes, policies, and methods to generate fees or other sources of revenue to off-set the ongoing personnel and maintenance costs of providing fire prevention and response services.

WORKSHOP DISCUSSION DRAFT

WASTEWATER COLLECTION AND TREATMENT

The City acts as the Regional Sewering Agency, responsible for operating the Fresno/Clovis Regional Wastewater Reclamation Facility (RWRF), located several miles southwest of the city, and the North Fresno Water Reclamation Facility, located in northeast Fresno. The three basic components of the City's wastewater treatment and reclamation system include: (1) collection and conveyance of wastewater; (2) treatment of raw wastewater; and (3) management of reclaimed water and biosolids. Aging infrastructure (collection and treatment), together with the need to pursue more advanced levels of reclamation and reuse are of concern, especially when planning for full buildout under this City of Fresno General Plan Update.

The City's wastewater system is comprised of an extensive system of main lines, connection points, manholes and lift stations. The collection pipelines consist of smaller diameter pipes (6 to 10 inches) serving individual properties, larger collection pipelines (10 to 27 inches) typically referred to as "oversized sewers," and sewer trunk interceptors (30 inches and larger) which convey sewage to the RWRF. The age and condition of the collection system varies considerably over the service area with some pipelines dating back to the 1890s.

The City of Fresno Department of Public Utilities (DPU) manages a comprehensive sewer maintenance program in accordance with its Sewer System Management Plan. The DPU is also responsible for preparing the Fresno Wastewater Collection System Master Plan, last updated in 2006. The 2006 Fresno Wastewater Collection System Master Plan concluded that the collection system receives "no appreciable groundwater infiltration" and relatively small amounts of rainfall-dependent infiltration or inflow, except for older areas of the Downtown. The 2006 Fresno Wastewater Collection System Master Plan identified 133 projects with an estimated cost of \$288 million (2004 dollars) as being necessary to accommodate the projected buildout anticipated by the 2025 Fresno General Plan. The RWRF operates under Waste Discharge Requirements issued by the Central Valley Regional Water Quality Control Board and presently has a capacity for primary and secondary treatment of 80 million gallons per day.

The 2006 Fresno Wastewater Reclamation Facility Master Plan anticipated that the RWRF would reach its capacity by 2010; however, the volume of wastewater has declined in recent years. Consequently, it is possible that the plant has sufficient capacity to accommodate growth for several years beyond what was previously anticipated. Nonetheless, the City is required by state statutes to begin planning for increased capacity when flows reach 75 percent of the current design capacity.

Wastewater presently receives primary (removal of materials that will float or settle) and secondary treatment (biological process to remove suspended and dissolved solids). Upon treatment the wastewater is distributed to a series of infiltration ponds where it is allowed to percolate through the soil (which serves as another level of treatment). The City also conducts programs, such as a federally mandated Industrial Pretreatment Program, to prevent the introduction of pollutants into a publicly owned treatment works (collection system and treatment facilities) that could impact its infrastructure and pass

through into receiving waters. Under the Industrial Pretreatment Program, industrial users are regulated through a Wastewater Discharge Permit that specifies discharge prohibitions and limitations. Failure to comply could result in penalties.

In addition, industries are billed for sewer depending on the amount of water used or effluent discharged and the strength of their wastewater measured as pounds of biochemical oxygen demand and pounds of total suspended solids. Reducing the strength of their wastewater to reduce sewer utility costs becomes an incentive for industrial users to improve their water quality and the amount of water used and/or discharged.

OBJECTIVE

PU-4 Plan for the provision of adequate sewer conveyance trunk sewer and collector main capacities to serve existing and planned urban development, consistent with the Wastewater Master Plan.

IMPLEMENTING POLICIES

PU-4-a **Plan for Regional Needs.** Coordinate and consult with the City of Clovis, pursuant to the Fresno-Clovis Sewerage System Joint Powers Agreement, so that planning and construction of sewer collection facilities will meet the regional needs of the metropolitan area.

PU-4-b **New Trunk Facilities.** Pursue construction of new or replacement sewer trunk facilities or pursue other alternatives consistent with the Wastewater Master Plan and as needed to serve infill intensification.

PU-4-c **System Extension and Cost Recovery.** Pursue enlargement or extension of the sewage collection system where necessary to serve planned urban development, with the capital costs and benefits allocated equitably and fairly between the existing users and new users while facilitating economic diversification.

Commentary: Consistent with economic diversification strategies, new users should 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, as authorized by law.

PU-4-d **Capacity Modeling.** Continue development and utilization of citywide sewer flow monitoring and computerized flow modeling to determine availability of sewer collection system capacity to serve planned urban development. This information will be considered in evaluating proposed General Plan amendments.

PU-4-e **Evaluate and Maintain Infrastructure.** Promote the health and safety of the community, and preserve the longevity and sound condition of the sewer collection system through evaluation and maintenance of the sewer infrastructure.

- Continue assessments of existing infrastructure and facilitate necessary repair to damaged and worn-out pipelines.
- Continue routine sewer line maintenance and cleaning programs to prevent line blockages caused by root intrusion, grease buildup, and pipe failure.
- Continue a sewer line replacement program and funding to repair or replace sewer lines damaged or worn beyond useful life.

OBJECTIVE

PU-5 Strive to preserve the health and safety of the entire Fresno community by protecting groundwater quality from being impaired by use of private on-site disposal systems.

IMPLEMENTING POLICIES

PU-5-a **Mandatory Septic Conversion.** Continue to consider and pursue where determined appropriate the mandatory abatement of existing private wastewater disposal (septic) systems and mandatory connection to the public sewage collection and disposal system.

PU-5-b **Non-Regional Treatment.** Discourage, and when determined appropriate oppose, the use of private wastewater (septic) disposal systems, community wastewater disposal systems or other non-regional sewage treatment and disposal systems within or adjacent to the metropolitan area if these types of wastewater treatment facilities would cause discharges that could result in groundwater degradation, or if such systems are not economically feasible.

PU-5-c **Satellite Facilities.** Work with the Regional Water Quality Control Board to ensure that approval of any satellite treatment and reclamation facility proposal will be consistent with governing statutes and regulations.

OBJECTIVE

- PU-6 Plan for the provision of adequate sewage treatment and disposal by utilizing the Fresno-Clovis Regional Wastewater Treatment and Reclamation Facility as the primary facility, together with supplemental subregional facilities when determined to be economically or environmentally advantageous, for all existing and new development within the metropolitan area.

IMPLEMENTING POLICIES

- PU-6-a **Treatment Capacity and Cost Recovery.** Prepare for and consider the implementation of increased wastewater treatment and reclamation facility capacity in a timely manner to facilitate planned urban development within the planned service area, and accommodate increase in flows and loadings from the existing community with the capital costs and benefits allocated equitably and fairly between existing users and new users, as authorized by law, while facilitating economic diversification.

Commentary: Consistent with economic diversification strategies, new users should 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 costs of extraordinary facilities such as satellite or “package” treatment plants, as authorized by law.

- PU-6-b **Consider Capacity in Plan Amendments.** 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.

OBJECTIVE

- PU-7 Promote reduction in wastewater flows and develop facilities for beneficial reuse of reclaimed water and biosolids for management and distribution of treated wastewater.

IMPLEMENTING POLICIES

- PU-7-a **Reduce Wastewater.** Identify and consider implementing water conservation standards and other programs and policies, as determined appropriate, to reduce wastewater flows.

- PU-7-b **Reduce Stormwater Leakage.** Reduce storm water infiltration into the sewer collection system, where feasible, through a program of replacing old and deteriorated sewer collection pipeline; by eliminating existing stormwater sewer cut-ins to the sanitary sewer system; and avoiding any new sewer cut-ins except when required to protect health and safety.
- PU-7-c **Biosolid Disposal.** Investigate and consider implementing economically effective and environmentally beneficial methods of biosolids handling and disposal.
- PU-7-d **Wastewater Recycling.** Building off of Policy RC-6-d in the Resource Conservation and Resilience Element, aggressively pursue the development of a recycled water system, the expansion of beneficial wastewater recycling opportunities, including a timely technical, practicable and institutional evaluation of treatment, facility siting and water exchange elements.
- PU-7-e **Infiltration Basins.** Continue to rehabilitate existing infiltration basins and if determined appropriate pursue acquiring additional sites for infiltration basins as needed.
- PU-7-f **Food and Drink Industry.** Strive to ensure adequate provision of facilities for the appropriate management of wastewater from wineries, food processing and beverage facilities, including conformance with Waste Discharge Requirements issued by the Regional Water Quality Control Board.

WATER

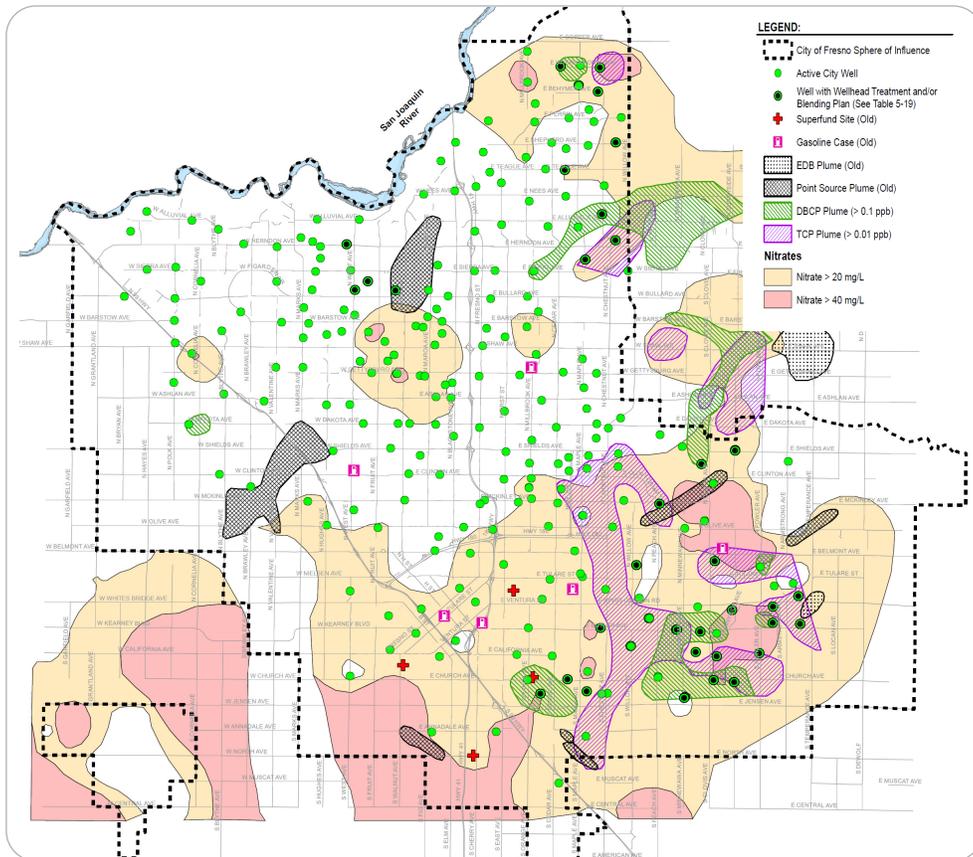
This section of the City of Fresno General Plan Update focuses on the quality, treatment, and conveyance of potable water in Fresno. The Resource Conservation and Resilience Element addresses the long-term supply of water resources, and the Urban Form, Land Use, and Design Element includes policies restricting the extension of water supply only to planned development in the Sphere of Influence that is consistent with this City of Fresno General Plan Update.

The City of Fresno Department of Public Utilities (DPU) provides potable water to the majority of the city, and some users within the Sphere of Influence. Fresno's primary source of potable water is groundwater stored in an aquifer. However, in 2004 the City's first Surface Water Treatment Facility (SWTF) came on line and began delivering on average 27,000 acre feet/year to residents in northeast Fresno.

The water distribution system is quite old; in fact, almost 35 percent of the 1,780-mile distribution system is over 50 years old with another 34 percent ranging between 25 and 50 years old. There is a marginal pipeline replacement plan, and a limited budget to replace this aged infrastructure. Most of the aged infrastructure is in the older parts of the community including the Downtown. When the pipes fail, there is usually extensive damage to adjacent roadway, and wet and dry utilities. This can cause disruption of service and costly cleanup. Based on historic City of Fresno cost data catastrophic failure costs 3 to 5 times more than planned replacement.

Groundwater within the Kings Sub-basin generally meets primary and secondary drinking water standards for municipal water use. However, the groundwater basin is threatened by chemical contaminants that affect the City's ability to fully use the groundwater basin resources without some type of wellhead treatment in certain areas. Many different types of chemical pollutants have contaminated portions of the Upper Kings Sub-basin underlying the City's water service area (See **Figure PU&S 1** below). Some of the major contaminant plumes include 1,2-Dibromo-3-Chloropropane (DBCP), ethylene dibromide (EDB), 1,2,3 trichloropropane (TCP), other volatile organic compounds (VOCs) like trichloroethylene (TCE), tetrachloroethylene (PCE), nitrate, manganese, radon, chloride, and iron. There are also several major contaminate point sources. About half of the City's water service area has some form of groundwater contamination; only areas in the northwest appear to be relatively unaffected by regional groundwater contamination. Of the City's over 260 currently active wells, 96 wells are impacted by a single contaminant plume, 33 wells are impacted by a pair of contaminant plumes, and 5 wells are impacted by 3 contaminant plumes. Currently, 34 of the City's wells have wellhead treatment systems. With this in mind, the City of Fresno General Plan Update includes specific policies to address groundwater contamination.

Figure PU&S 1 - Regional Groundwater Contamination Diagram



OBJECTIVE

PU-8 Manage and develop the City’s water facilities on a strategic timeline basis that recognizes the long-life cycle of the assets and the duration of the resources, to promote a safe, economical, and reliable water supply for existing and planned urban development and economic diversification.

IMPLEMENTING POLICIES

PU-8-a **Forecast Need.** Utilize available and innovative tools, such as computerized flow modeling to determine system capacity, as necessary to forecast demand on water production and distribution systems by urban development, and to determine appropriate facility needs.

WORKSHOP

PU-8-b **Potable Water Supply and Cost Recovery.** Prepare for provision of increased potable water capacity (including surface water treatment capacity) in a timely manner to facilitate planned urban development within the planned service area, and accommodate increase in water demand from the existing community with the capital costs and benefits allocated equitably and fairly between existing users and new users, as authorized by law, while facilitating economic diversification and recognizing the differences in terms of quantity, quality and reliability of the various types of water in the City’s portfolio.

Commentary: Consistent with economic diversification strategies, new users should pay for the cost of being attached to the potable water supply and distribution system and surface water treatment through connection fees, including the cost of any incremental burden that they may place on the entire system in terms of both infrastructure and water resources, and pay for the full operational costs of extraordinary facilities, as authorized by law.

PU-8-c **Conditions of Approval.** Set appropriate conditions of approval for each new development proposal to ensure that the necessary potable water production and supply facilities and water resources are in place prior to occupancy.

PU-8-d **CIP Update.** Continue to evaluate capital improvement plans and consider updating as determined appropriate to meet the demands of both existing and planned development, including both intensification of established areas and new development within designated growth areas.

PU-8-e **Repairs.** Continue to evaluate existing water production and distribution systems and plan for necessary repair or enhancement of damaged or antiquated facilities.

PU-8-f **Water Quality.** Continue to evaluate and implement measures determined to be appropriate and consistent with water system policies, including prioritize the use of groundwater, installation of well-head treatment facilities, construction of above-ground storage and surface water treatment facilities, and enhancement of transmission grid mains to promote adequate water quality and quantity.

PU-8-g **Review Project Impact on Supply.** Mitigate the effects of development and capital improvement projects on the long-range water budget to ensure an adequate water supply for current and future uses.

SOLID WASTE

This section addresses land use compatibility, public sanitation, and aesthetic impacts associated with the City's solid waste management and community sanitation practices. The following objectives and policies will ensure a consistent citywide level of service for refuse collection, neighborhood cleanup, sanitation enforcement, and recycling programs.

Existing waste disposal facilities are adequate to maintain a sufficient level of service for future population growth in the city. The City of Fresno Solid Waste Division develops performance measures yearly to determine the pounds of waste, recycling and composting generated by each household, business and multi-family unit and updates estimates of future waste generation with the latest growth projections.

The City is currently excelling at solid waste diversion - the system of moving 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 re-use of materials. In 2009, Fresno was ranked highest in the state among larger cities by the California Integrated Waste Management Board for diverting 71 percent of its solid waste. A Fresno City Council resolution commits the City to the goal of a 75 percent Waste Diversion Rate by 2012 and a Zero Waste goal by 2025.

In 2005, the City adopted a Construction and Demolition Diversion ordinance to encourage and provide for the diversion of commercial materials and construction and demolition material from landfill disposal. Recycling of construction and demolition is required for any City-issued building, relocation or demolition permitted project that generates at least eight cubic yards of material by volume. All waste must be hauled to a City-approved facility.

As of December 2011, exclusive franchises for commercial solid waste were approved (privatized) and the service is no longer provided by the City of Fresno Solid Waste Division. The City ordinance granting an exclusive franchise privatizing residential solid waste, recyclable and organic material is subject to referendum and scheduled for a special election in June of 2013.

OBJECTIVE

PU-9 Provide adequate solid waste facilities and services for the collection, transfer, recycling, and disposal of refuse.

IMPLEMENTING POLICIES

PU-9-a **New Techniques.** Collaborate with the County and other agencies or entities to identify and 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.

- PU-9-b **Compliance.** Pursue programs to maintain conformance with the Solid Waste Management Act of 1989 or as otherwise required by law and mandated diversion goals.
- PU-9-c **Cleanup and Nuisance Abatement.** Continue community sanitation programs to provide neighborhood cleanup and nuisance abatement services.
- PU-9-d **Facility Siting.** Locate private or public waste facilities and recycling facilities in conformance with local land use requirements, State, and federal regulations so that transportation, processing and disposal of these materials are not detrimental to the public health, safety, welfare, and aesthetic well-being of the surrounding community.
- PU-9-e **Tire Dumping.** Continue to consider and implement as determined appropriate measures to eliminate illegal tire dumping.

WORKSHOP DISCUSSION DRAFT

APPENDIX A - DEFINITION OF TERMS AND CONCEPTS - FRESNO GENERAL PLAN UPDATE, PUBLIC UTILITIES AND SERVICES ELEMENT

Activity Center: A type of urbanized development that can occur at multiple scales based upon its planned density, intensity, and location. They include a close proximity of buildings with mixed land uses and are typically integrated with and connected by multiple modes of transit including walking, biking and public transit, providing a single destination where people can live, work, and shop. *An umbrella definition for a variety of types of activity centers (should also be defined) such as Regional, Urban, Neighborhood, Suburban, etc. which are characterized based upon the intensity, location, and mix of uses.*

Bus Rapid Transit (BRT) and BRT Corridor priority transit routes, pedestrian activities and linkages, “high frequency transit”. Will define

City of Fresno or City: Refers to the municipal entity and its functions as a government entity. Use of the term “city” typically refers to the area, population or activities occurring within the Fresno Plan Area.

Citywide: References to “Citywide” are in relation to a characteristic, regulation or other factor that occurs within the incorporated boundaries of the City of Fresno while “citywide” may refer to occurrences within the Fresno Planning Area (FPA).

Citywide Development Code: Refers to the proposed City of Fresno Municipal Code, Chapter 15, Citywide Development Code which is proposed to be the new planning, zoning and development implementing code.

Climatized Plants: will be defined.

Community Plan: A refinement of the general plan for a component geographic area of the general plan. A community plan shall advance the provisions of the general plan to a more precise level of detail and shall contain goals, policies, maps, and standards that implement the recommendations of the general plan. A community plan shall contain those plan elements which are essential to the implementation of the general plan and may contain additional components, including specific plans, which are necessary to the development of the goals, policies, and standards for the community plan area. A community plan shall be adopted, amended, or repealed by resolution of the Council.

Community Facilities District: will define

Complete Neighborhood and “elements” of, Neighborhood, District, mixed-use urban districts, compact neighborhoods, suburban areas, transit-oriented mixed use corridors, Mixed Use Urban Corridors, activity centers, community centers, neighborhood centers, residential districts, main street, multi-modal corridors and centers, Holistic Neighborhood Planning-“Adopt development regulations that require ‘major’ new subdivisions be designed as compact pedestrian and transit-oriented communities” (UF-14-1, S-134, s-135)

Criteria pollutants: will be defined.

Density and Intensity: General description of land use characteristics where Residential Density or Density generally refers to the ratio of residential dwelling units to acre (43,560 square feet) of land which is calculated by dividing the number of existing or proposed residential dwelling units by the area of the subject property.

Intensity generally refers to the relative magnitude of the use or activity which may occur upon a given property or area of land and is typically reflected by the ratio of building area to land area calculated as floor area ratio (i.e. the building area divided by the land area). Intensity may also be measured by other characteristics such as the rate at which the uses of a property generate demand for water consumption, demand for wastewater disposal or generates demand for travel such a private vehicle, public transportation, bicycling or walking.

Drought-Resistant Plants: will be defined.

Environmental justice: will be defined.

Flashover: will be defined.

Fresno-Clovis Metropolitan Area (FCMA) and Fresno Metropolitan Area: These terms have been used in the past to refer to one or both of the City of Fresno and the City of Clovis and the immediately surrounding environs the boundaries of which were defined by US Census Tracts. This term was widely used in the past and referred to a geographic area previously defined by the US Census Bureau. The Fresno Metropolitan Area was referred to and the boundary depicted in Exhibit 4 of the Amended and Restated Memorandum of Understanding between the County of Fresno and the City of Fresno January 6, 2003. The area included within the FMA is larger than the SOI and the FPA.

Fresno's City Limits: Refers to the incorporated boundaries of the City of Fresno.

Fresno Production-Consumption Region: will be defined.

Fresnans: Refers generally to persons living within the City of Fresno's planning area.

General Plan: Use Municipal Code Definition 12-105-G-6.1: Shall mean an integrated, internally consistent, comprehensive, and long-range set of goals and policies for the general physical development of the city and any land outside the city's boundaries which bears relation to the city's planning. The general plan shall include diagrams which identify the general locations and types of land uses that are consistent with the goals and policies of the plan. The general plan and its recommendations shall address physical, social, economic, environmental, design, and public service delivery system issues that have a bearing on the growth and change of the city. The general plan shall contain the mandatory elements prescribed by State Planning and Zoning Law (Title 7, Division 1, commencing with Section 65000, of the California Government Code), which may be combined where appropriate. The general plan may also include any other elements or address any other subjects which, in the judgment of the Council, are needed for the appropriate physical development of the city.

Goal: A goal is a general direction-setter. It is an ideal future end related to the public health, safety or general welfare. A goal is a general expression of community values and, therefore, may be abstract in nature and is generally not quantifiable or time-dependent.

Objective: An objective is a specified end, condition, or state that is an intermediate step toward attaining a goal. It should be achievable, and preferably measurable.

Policy: A policy is a specific statement that guides decision-making and indicates a commitment of the local legislative body to a particular course of action to accomplish goals and objectives.

Implementation Measure: An implementation measure is an action, procedure, program or technique that carries out general plan policy. (State of CA, GP Guidelines, OPR)

Green building rating system: will be defined.

Green technology: will be defined.

Greenways: Greenways is a long, narrow piece of land, where vegetation is encouraged, which is managed for public recreation and slow travel.

Groundwater: will be defined.

Growth or Urban Growth Area: Urban growth is development of properties over a period of time with uses and improvements which are intensive and urban in character. Urban growth areas are typically specifically defined geographic areas within which urban development may be managed through the application of policies and implementation measures to assure that commensurate urban public facilities and improvements are provided as necessary to accommodate the planned development.

Healthy Communities strategy: will be defined.

Healthy People: Healthy People 2020 is a 10-year agenda for improving the Nation's health. It is a multiyear process that reflects input from a diverse group of individuals and organizations. More information can be found at <http://www.healthypeople.gov/2020/default.aspx>

Higher-intensity development: will be defined.

Infill or Urban Infill Area: Infill or urban infill areas typically refers to properties and improvements which are largely vacant, underdeveloped or developed with uses and structures which are antiquated or harmful given the site's location and surrounding uses. Infill development typically refers to the reuse or redevelopment of such properties to accommodate activities which are more viable and compatible with the location and surroundings.

Infill opportunity areas and Infill Priority Zone: General or specifically defined geographic areas for which policies and implementation measures are established to promote development or planned land uses.

“Leap frog” development: will be defined.

Lighting and Landscaping District: will be defined.

Low Impact Design: will be defined.

Low-Intensity Agricultural Activities: will be defined.

Master Plan or Master Planning (S45), master public facility plan, Sub-area Master Planning for BRT transit corridors and growth areas designed (designated) by the General Plan to include urban design principles (page 3-21,S126) (page 3-22,S127 & S128 requiring Master Plans and Sub-Area Master Plans), subsequent specific or master plans, (page 3-5, S23, 24)“subsequent specific plans for identified growth areas and certain larger infill areas are subsequent projects”, “precise development plan” to be allowed by Development Code (page 3-32). To be defined in glossary.

Sub-area Master Plan: Typically refers to a land use and circulation plan refinement for an area which is 160-acres or less in size and provides for a mix of land use proportionate to those identified by the Fresno General Plan Land Use Diagram and is prepared and adopted as provided by the City of Fresno's Development Code.

Mixed-Use: A development type consisting of a diversity of both residential uses and nonresidential uses, which may include but are not limited to office, retail, public, or entertainment, in a compact urban form with a strong pedestrian orientation.

Vertical Mixed-Use: A development that contains at least one multistory mixed-use building.

Horizontal Mixed-Use: An integrated mixed-use development consisting of adjacent residential and non-residential uses.

New Urbanist principles: will be defined.

Passive Water Storage: will be defined.

Parkway: will be defined.

Planning Area: Referred to as the Fresno Planning Area (FPA) which is the geographic area defined by the boundary depicted in FGP Land Use Element Figure 2. It is consistent with the expanded SOI boundary depicted by the Amended and Restated Memorandum of Understanding between the County of Fresno and the City of Fresno, January 6, 2003 with the addition of the entirety of the Fresno-Clovis Regional Wastewater Reclamation Facility. The FPA includes properties which are within the City of Fresno incorporated boundaries as well as those which are located within the unincorporated area.”

Renewable energy: will be defined.

Riparian: will be defined.

Satellite or ‘package’ treatment plants: will be defined.

Solar power: will be defined.

Special Purpose Recreation Facility: will be defined.

Specific Plan: Use Municipal Code Definition 12-105-S-20.1: shall mean a precise plan or redevelopment plan based on, and consistent with, the general plan and the community plan within which it is located, and shall contain precise land use designations, regulations, programs, and legislation that are required for the systematic implementation of the general plan and community plan.

Sphere of Influence (SOI): The City of Fresno’s SOI is defined as the geographic area within the boundaries depicted by the Fresno General Plan Land Use Diagram, Figure -, which are consistent with the boundaries as approved by the Fresno Local Agency Formation Commission (LAFCo) as of September 1, 2012. The expanded SOI boundary as identified by the Amended and Restated Memorandum of Understanding between the County of Fresno and the City of Fresno, January 6, 2003 includes the remaining portion of the 2025 Fresno General Plan’s North Growth Area which has not been included within the LAFCo approved SOI as of September 1, 2013.

Transit Village, Transit Oriented Development (TOD), TOD Activity Center, TOD Corridor & major TOD corridor, Major Corridor. Will define

Urban and urban area: Areas characteristic of, or constituting a city or more intensively developed community generally comprised of moderate and higher density residential development (i.e. three or more dwelling units per acre although urban areas often include estate sized lots ranging from one to five acres in area) together with office, retail commercial development, industrial, public and institutional uses. The intensity of such uses typically require the provision of public services and infrastructure including water supply system, sewage collection and treatment system, roadways and other improvements for motor vehicle and non-motorized travel, public transit, and police and fire suppression safety services.

Urban Form or Urban Design: urban form and design is concerned with the location, mass, and design of various urban components and combines elements of urban planning, architecture, and landscape architecture.

Urban Use, Commercial Use, Residential Use, agri-business or agricultural business uses versus general agricultural use. Will define if necessary but these are typically generic term at a plan level but would be specifically defined in the development code.

Waste Diversion Rate: will be defined.

Zero Waste: will be defined.

Zoning Ordinance and Zoning Regulations: Presently City of Fresno Municipal Code, Chapter 12, Articles 1,2,3, and 4.5 comprise the “Comprehensive Zoning Ordinance” and can be referred to as “Zoning Ordinance of the City of Fresno”. The present Zoning Ordinance and many other Articles of Chapter 12 will be repealed and replaced by updated Code provisions. Use of these terms should be in reference to old implementing tools to be replaced.

APPENDIX B - LAND USE DIAGRAM, EXISTING WATER RESOURCES AND RECHARGE FACILITIES DIAGRAM, EXISTING WATER DISTRIBUTION SYSTEM DIAGRAM, AND EXISTING WASTEWATER SYSTEM DIAGRAM - FRESNO GENERAL PLAN UPDATE, PUBLIC UTILITIES AND SERVICES ELEMENT

FRESNO GENERAL PLAN UPDATE

Water Resources

City of Fresno Metropolitan Water Resources Management Plan Update

EXISTING RECHARGE FACILITIES

NOTES:

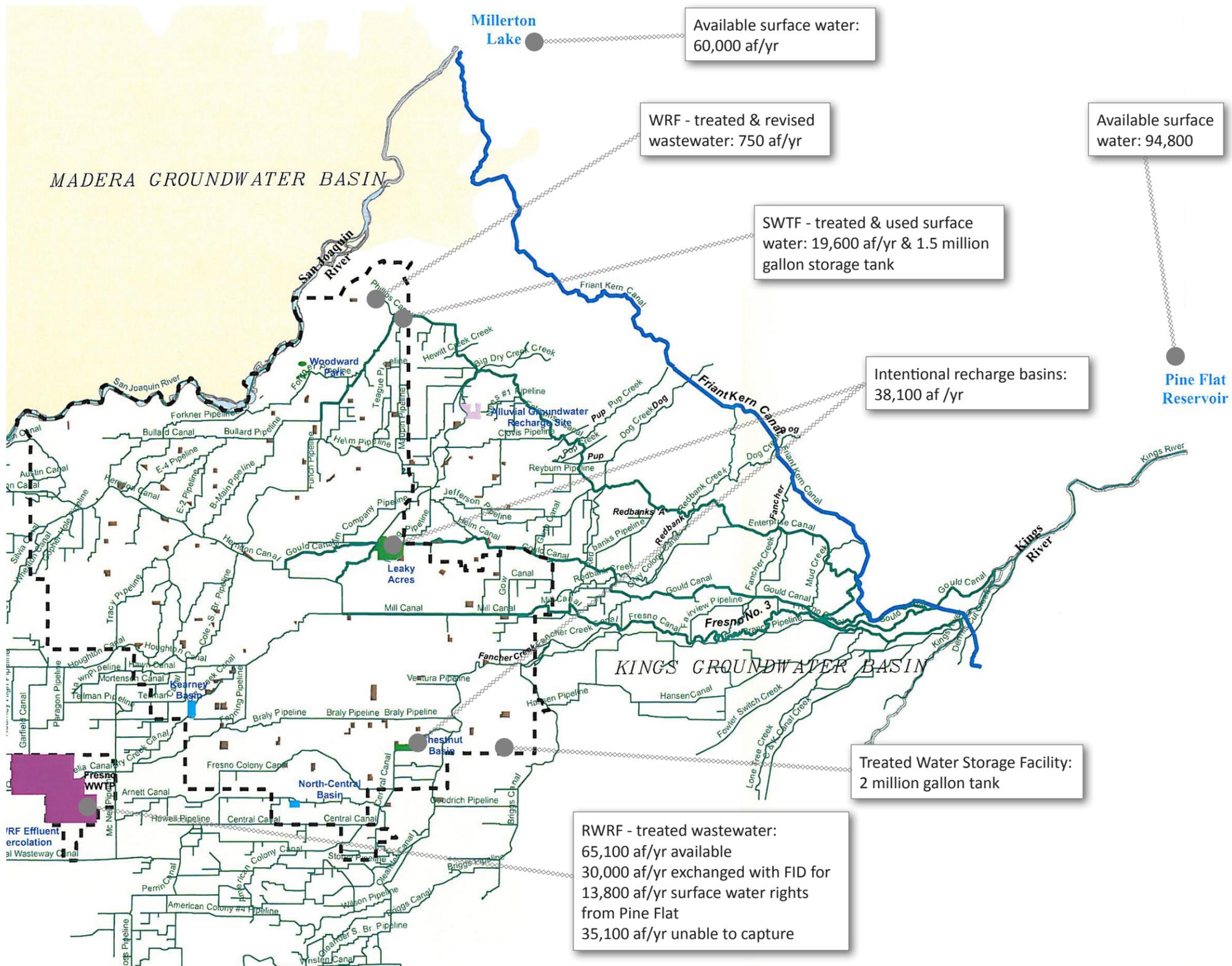
- Shows only basins used for groundwater recharge. Some of these FMFCD basins are dual use. FMFCD basin locations based on data provided by City (December 2007).

LEGEND:

-  City of Fresno Sphere of Influence
-  Friant Kern Canal
-  Major FID Canals
-  Other FID Canals
-  City of Fresno Basins
-  FMFCD Basins Used for GW Recharge
-  FID Basins

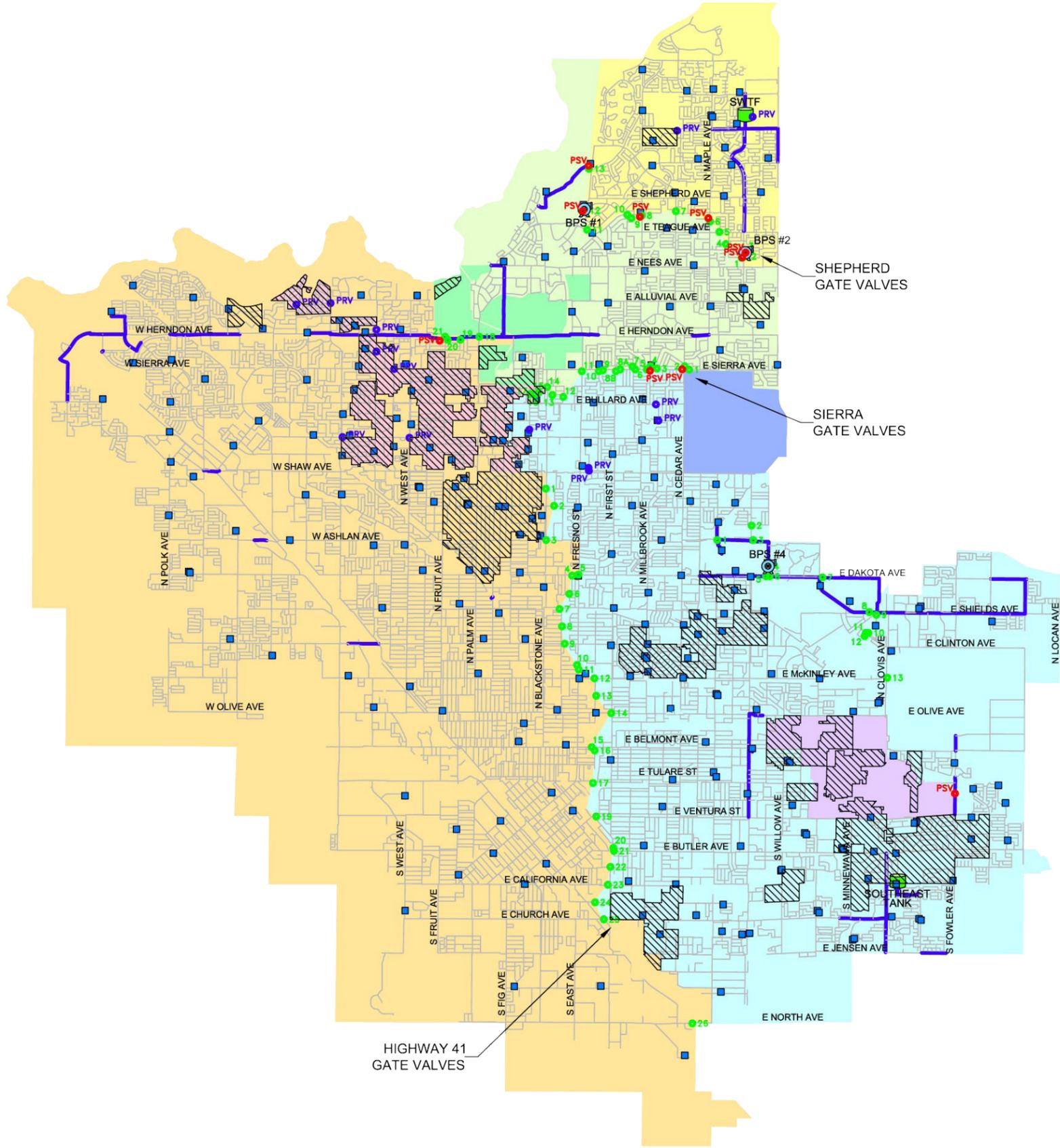


Source: City of Fresno, Department of Public Utilities, Metropolitan Water Resources Management Plan Update, 2010



City of Fresno Metropolitan Water Resources Management Plan Update

EXISTING WATER DISTRIBUTION SYSTEM



NOTES:

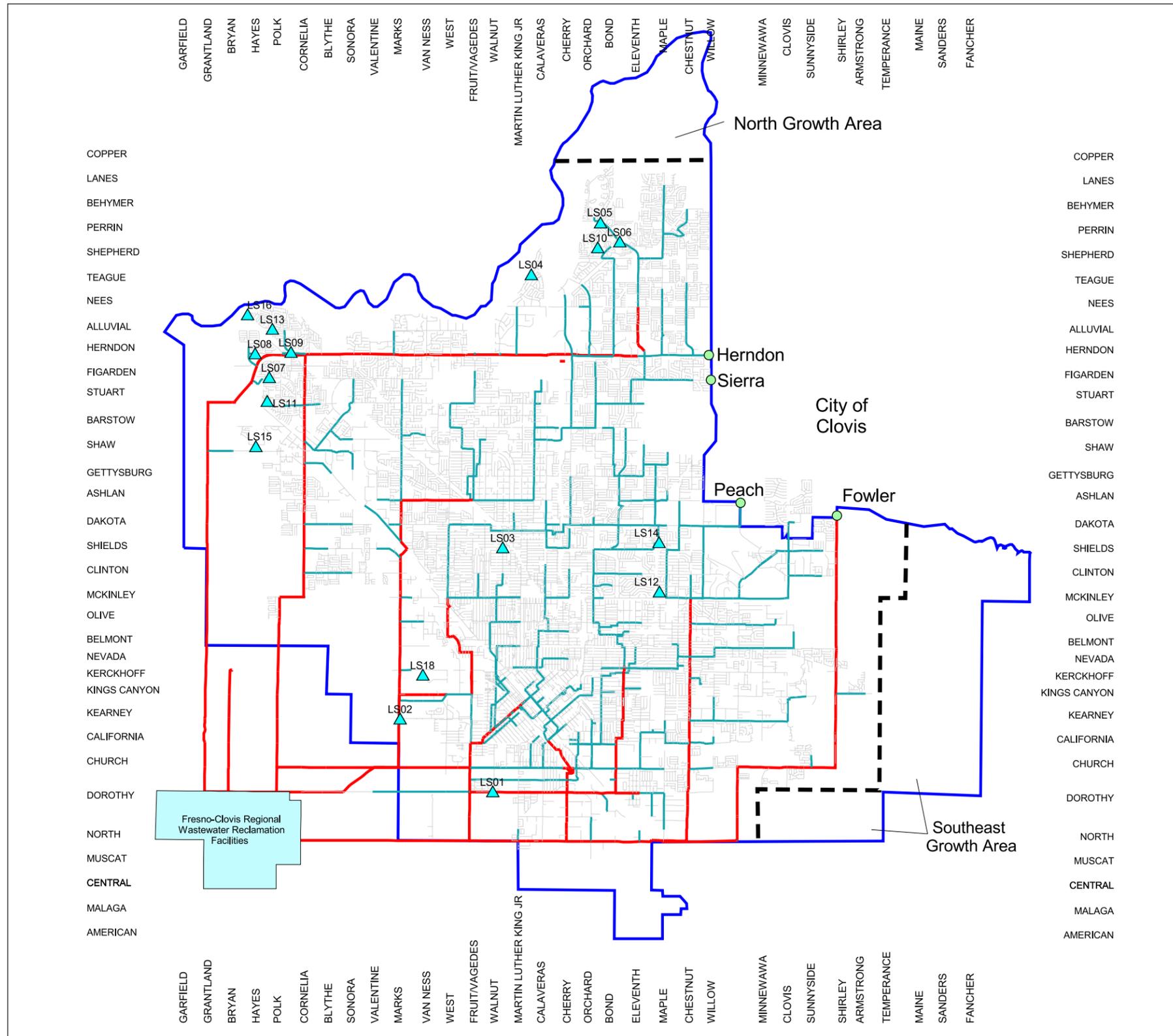
A. Boundaries are approximated based on gate valve locations shown by GIS information provided by City Staff.

LEGEND:

- Existing City Wells
- Existing Storage Facility
- Booster Pump Station
- Existing 14-inch and Smaller Pipeline
- Existing 16-inch and Larger Pipeline
- Shepherd
- Sierra A
- Sierra B (Pinedale County Water District)
- Highway 41
- Highway 41B (CA State University, Fresno)
- Highway 41C (Bakman Water Company)
- Westside
- Fluoride Districts
- County Islands
- 1 Closed or Partially Closed Gate Valve Location
- 1 PSV Location
- 1 Fluoride District PRV Location



FRESNO GENERAL PLAN UPDATE



Wastewater

LEGEND:

-  Lift Station
-  General Plan Boundary
-  Growth Area Boundary
-  < 12" Diameter Sewer
-  12" - 33" Diameter Sewer
-  > 33" Diameter Sewer
-  City of Clovis Connection



0 1 2 4 6 Miles

Source: City of Fresno, Department of Public Utilities, Metropolitan Water Resources Management Plan Update, 2010