

10 Safety

The Safety Element identifies the natural and manmade hazards that exist within the city and seeks to mitigate their potential impacts through both preventative and response measures. This Element addresses potentially hazardous materials and operations; seismic and geologic hazards; flooding and drainage; fire hazards; and emergency management. Potential health hazards related to air quality are addressed in Chapter 8: Air Quality and Greenhouse Gases. Storm drain infrastructure related to flooding and drainage is discussed in Chapter 3, New Growth Areas and Infrastructure.

10.1 HAZARDOUS MATERIALS AND OPERATIONS

Sites where hazardous chemical compounds have been released into the environment can pose health threats. Historic or current activities, most often associated with industrial or commercial uses (including gas stations, car washes, etc.) may result in the release, leak, or disposal of toxic substances on or below the ground surface, where they can then contaminate soil and ground water. Furthermore, disturbance of the ground through grading or excavation can result in exposure of these chemicals to the public. Improper handling of contaminated sites may result in further exposure via airborne dust, surface water runoff, or vapors. However, proper waste management and disposal practices can minimize public concern over toxicity and the contamination of soils, water, and the air.

LAWS AND REGULATIONS

Federal and State laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, transported and disposed of, and in the event that such materials are accidentally released, to prevent or mitigate injury to health or the environment. The primary Federal agencies with responsibility for hazardous materials management include the U.S. Environmental Protection Agency (EPA), U.S. Department of Labor Occupational Safety and Health Administration (OSHA), and the U.S. Department of Transportation (DOT).



Putting Police and Fire Departments together in a new public safety building is anticipated to improve response time, increase communication and teamwork, and allow efficient sharing of space.



Railroad lines and storage of chemicals present potential hazards in the Study Area (top).

Most of the cleanup sites being monitored by the State Water Resources Control Board (SWRCB) are Leaking Underground Storage Tanks (LUSTs), mainly associated with current or former gas stations (bottom).

In many cases, California State law mirrors or is more restrictive than federal law, and enforcement of these laws has been delegated to the State or a local agency. The California Department of Toxic Substances Control works to prevent exposure to hazardous materials and oversees cleanup at contaminated sites. The State Water Resources Control Board administers programs to ensure safe practices and monitor operations of aboveground and underground storage tanks, in coordination with the Stanislaus County Environmental Resources Department.

The Environmental Resources Department is responsible for implementing the state-mandated Countywide Integrated Waste Management Plan (CIWMP). The Plan includes a Household Hazardous Waste Element, which establishes the framework for safe disposal in the County and participating cities, including Turlock. The Plan must be reviewed at least every five years; a process most recently completed in 2007. The Department also prepares and implements the county's Hazardous Waste Management Plan, and the household hazardous waste collection program, providing information to consumers and running the permanent collection facility in Modesto.

CLEANUP SITES AND WASTE-HANDLING FACILITIES

The California Department of Toxic Substances Control (DTSC) and the State Water Resources Control Board (SWRCB) report inventories of cleanup sites. Not including sites that have been fully remediated or where cleanup is now listed as “inactive,” 24 contaminated sites were identified in the Study Area as of October 2010 (see Table 10-1). All but three of these sites are Leaking Underground Storage Tanks (LUSTs), mainly associated with current or former gas stations.

Two sites are being monitored by both the DTSC and SWRCB. One is the Turlock Manufactured Gas Plant on South Golden State Boulevard; the other is at Valley Wood Preserving, Inc., at 2237 South Golden State. This site is also a Federal Superfund cleanup site. Cleanup of soil and groundwater contaminated by the wood preserving process began in the early 1990s and continued intermittently through 2007. A shallow, localized plume of low-level groundwater contamination remains, but the site has been deemed safe for future commercial and industrial activities and poses no threat to drinking water sources by the US EPA, Region 9.

The California Department of Resources Recycling and Recovery (CalRecycle) is responsible for managing California’s solid waste stream, and works in partnership with local government, industry, and the public to reduce waste disposal and ensure environmentally safe landfills. Table 10-1 also identifies three solid waste facilities in the Study Area; two of these are active and one is no longer used. Hazardous material cleanup sites and solid waste facilities are shown in Figure 10-1.

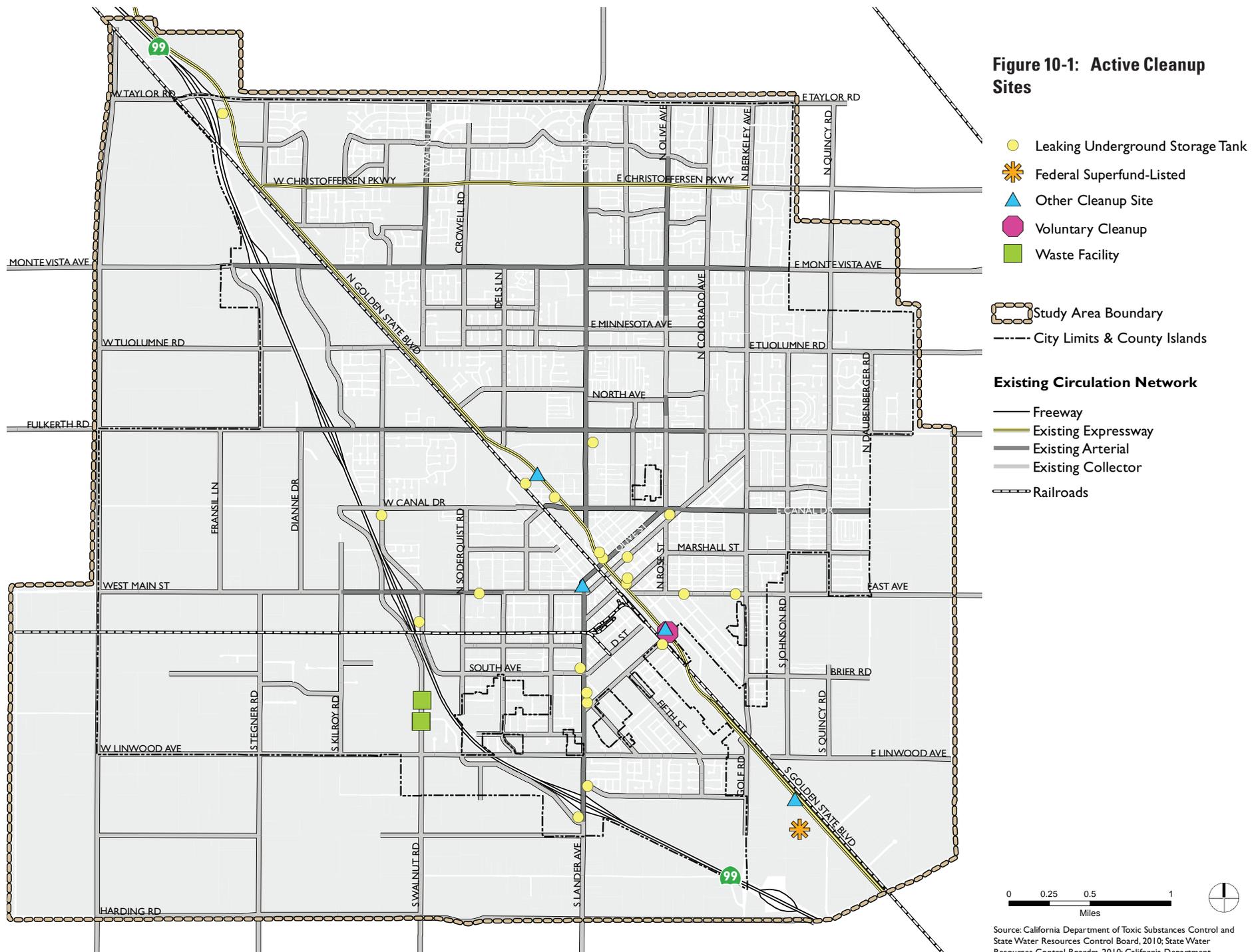
TABLE 10-1: ACTIVE CLEANUP SITES AND WASTE FACILITIES			
SITE	TYPE	CLEANUP STATUS	ADDRESS
<i>Sites Identified by the California Department of Toxic Substances Control</i>			
So Cal Gas/Turlock Manufactured Gas Plant	Voluntary Cleanup	Active	650 S. Golden State Blvd.
Valley Wood Preserving, Inc.	Federal Superfund-Listed	Active - Land Use Restrictions	2237 S. Golden State Blvd.
<i>Sites Identified by the State Water Resources Control Board</i>			
Betco Petroleum	LUST Cleanup Site	Open - Site Assessment	632 Ninth aka 1034 Lander Ave.
Rodgers Mini Mart Case #2	LUST Cleanup Site	Open - Site Assessment	1570 East
Town Service Case / Goodrich Oil Case #1	LUST Cleanup Site	Open - Site Assessment	238 S. Golden State
Arco #6161	LUST Cleanup Site	Open - Remediation	210 N. Golden State Blvd.
Auto King #3	LUST Cleanup Site	Open - Remediation	952 Lander Ave.
Gomes and Sons Inc.	LUST Cleanup Site	Open - Remediation	725 Tully Rd.
Goodrich Oil Co. Short Property	LUST Cleanup Site	Open - Remediation	722 S. First
Monfredini Property aka Gaddys Shell	LUST Cleanup Site	Open - Remediation	402 E. Main
Pacific Pride / Cardlock Facility	LUST Cleanup Site	Open - Remediation	309 S Tully
Reflections Car Wash	LUST Cleanup Site	Open - Remediation	1400 Geer Rd.
Stop n Save #4	LUST Cleanup Site	Open - Remediation	825 Main
Suburban Propane	LUST Cleanup Site	Open - Remediation	4625 N. Golden State Blvd.
Unocal / Weiss Oil	LUST Cleanup Site	Open - Remediation	881 N. Golden State Blvd.
Unocal Bulk Plant No. 0796 (Former)	LUST Cleanup Site	Open - Remediation	1000 N. Front
Utility Service & Electric Company	LUST Cleanup Site	Open - Remediation	713 Lander
Arco West Main	LUST Cleanup Site	Open - Verification Monitoring	1030 W. Main
Barrell Inn Liquors	LUST Cleanup Site	Open - Verification Monitoring	2219 Lander Ave.
Beacon Station #54 Case #2	LUST Cleanup Site	Open - Verification Monitoring	216 N. Golden State Blvd.
Chevron #90510	LUST Cleanup Site	Open - Verification Monitoring	100 E. Glenwood

TABLE 10-1: ACTIVE CLEANUP SITES AND WASTE FACILITIES

Darpetro Gasco USA	LUST Cleanup Site	Open - Verification Monitoring	1250 East
Fernandes Speed Shop	LUST Cleanup Site	Open - Verification Monitoring	214 S. Center
Turlock Manufactured Gas Plant	Other Cleanup Site	Open - Site Assessment	645 S. Golden State Blvd.
City of Turlock Dry Cleaners - Turlock PCE Investigation	Other Cleanup Site	Open - Remediation	E. Main & Olive and W. Main & Locust Sts.
Valley Wood Preserving, Inc.	Other Cleanup Site	Open - Remediation	2013, 2031 S. Golden State Blvd.
<i>Waste Facilities and Sites in the Study Area</i>			
SITE	TYPE	OPERATIONAL STATUS	ADDRESS
City of Turlock Water Quality Control Facility	Composting Facility (Sludge)	Active	901 S. Walnut
Turlock Transfer	Large Volume Transfer/ Processing Facility	Active	1100 S. Walnut
Turlock Disposal Site	Solid Waste Disposal Site	Closed	901 S. Walnut

Sources: California Department of Toxic Substances, 2010; State Water Resources Control Board, 2010; California Department of Resources Recycling and Recovery, Solid Waste Information System, 2010.

Figure 10-1: Active Cleanup Sites



- Leaking Underground Storage Tank
- ★ Federal Superfund-Listed
- ▲ Other Cleanup Site
- ⬡ Voluntary Cleanup
- Waste Facility

- Study Area Boundary
- City Limits & County Islands

- Existing Circulation Network**
- Freeway
 - Existing Expressway
 - Existing Arterial
 - Existing Collector
 - Railroads

Source: California Department of Toxic Substances Control and State Water Resources Control Board, 2010; State Water Resources Control Board, 2010; California Department of Resources Recycling and Recovery, 2010; City of Turlock, 2008; Dyett and Bhatia, 2010;

POTENTIALLY HAZARDOUS OPERATIONS

Railroads

Potential hazards associated with railroads include collisions and train derailment. Either of these incidents can lead to human injury or death as well as causing various environmental impacts. The Federal Railroad Administration regulates railroad safety and provides oversight to the use of railroads.

The Union Pacific Railroad (UPRR) corridor traverses the Study Area from northwest to southeast parallel to Golden State Boulevard, and carries an average of 18 trains per day. A maximum of two trains operate per day on the UPRR spur, which runs parallel to Castor Street.

Utility Corridors

One of the primary causes of disruption to underground natural gas pipelines, which are present in the Study Area, is external force damage that occurs during excavation activities. Such damage can create pipeline leaks or ruptures and lead to hazardous health and safety conditions. However, a national program is in place to prevent accidental pipeline damage caused by excavation. For areas adjacent to an underground utility pipeline, the U.S. Department of Transportation Office of Pipeline Safety requires that individuals contact the state “One-Call” center prior to beginning excavation. Advanced planning, effective use of these one-call systems, accurate locating and marking of underground facilities, and the use of safe-digging practices can all be effective in reducing underground facility damage and potentially hazardous conditions.

POLICIES

Guiding Policies

- 10.1-a Protect Lives and Property.** Prevent loss of lives, injury, illness, and property damage due to hazardous materials and wastes.
- 10.1-b Protect Natural Resources.** Protect soils, surface water, and groundwater from contamination from hazardous materials.

10.1-c Coordinate Efforts to Minimize Risks. Cooperate with State agencies and the Stanislaus County Environmental Resources Department efforts to identify hazardous materials users, implement hazardous materials plans, provide safe waste disposal sites, and minimize risks associated with hazardous cargoes, agricultural spraying, and electromagnetic fields.

10.1-d Incorporate Safety Considerations Into Land Use Policies. Coordinate land use policies with concerns about potential hazards.

Policies calling for buffers between urban and agricultural activities will reduce the risk of exposure of urban residents to agricultural chemicals. Concentration of industrial activity west of the highway away from housing reduces the risk from accidents that might occur at industrial sites, and also helps to separate industrial vehicle traffic from other traffic on local streets.

Implementing Policies

10.1-e Implement Countywide Integrated Waste Management Plan. Implement measures specified in the Household Hazardous Waste Element of the Countywide Integrated Waste Management Plan (CIWMP).

10.1-f Reduce Hazardous Waste Disposal. Continue to reduce per capita disposal of hazardous waste by promoting reuse and recycling of materials as appropriate, by providing information to the public, operating waste collection facilities, and other means.

10.1-g Raise Public Awareness of Appropriate Hazardous Waste Disposal. Provide information and conduct outreach to educate the public about proper disposal methods for household hazardous waste.

10.1-h Maintain Inventory of Contaminated Sites. Maintain for public review an up-to-date inventory of identified hazardous waste sites in the City based on State databases. This information should be identified and addressed if needed as part of Turlock’s review and analysis of each discretionary development proposal.

All currently identified contaminated sites are listed in the Environmental Impact Report (EIR).

10.1-i Support Cleanup Efforts. Work with the Stanislaus County Environmental Resources Department, other agencies, and landowners to enable clean-up of contaminated sites.

The City should not approve a use change or any development project on a contaminated site until such time as the site is cleaned to a level where it is no longer hazardous for the proposed use.

10.1-j Evaluate Safety of Railroad Crossings. In close cooperation with the railroads, evaluate the safety characteristics of existing at-grade railroad crossings, and promote improvements to the extent feasible and as necessary to reduce potential for mishaps involving hazardous cargo. Support grade-separated railroad crossings where feasible.

10.1-k Locate Buildings With High-Public-Occupancy at Safe Distance from Railroad and Highway. To the extent feasible, locate new buildings of high public occupancy — particularly schools, hospitals, civic and institutional uses at least 100 feet from main railroad alignments and the highway, to minimize risks to life and property in the event of a hazardous cargo accident.

10.1-l Maintain Land Use Separation Between Hazardous Waste Handling Sites and Incompatible Uses. Ensure compatibility between hazardous material users and surrounding land use through the development review process. Separate hazardous waste facilities from incompatible uses including, but not limited to, schools, daycares, hospitals, public gathering areas, and high-density residential housing through development standards and the review process.

10.1-m Require Hazardous Materials Studies When Appropriate. Ensure that the proponents of new development projects address applicable hazardous materials concerns through the preparation of Phase I or Phase II hazardous materials studies, as necessary, for each identified site as part of the design phase for each project. Require projects to implement federal or State cleanup standards outlined in the studies during construction.

10.1-n Require Safe Design and Construction of Storage Tanks. Require that all fuel and chemical storage tanks are appropriately constructed; include spill containment areas to prevent seismic damage, leakage, fire and explosion; and are structurally or spatially separated from sensitive land uses.

10.2 SEISMIC AND GEOLOGIC HAZARDS

Geologic and soils hazards include steep slopes and landslides, subsidence, expansive soils, and soil erosion. Seismic hazards related to earthquakes include groundshaking and ground failures such as liquefaction and landslides. In general, geologic and seismic hazards do not pose a substantial risk to development or to overall public safety in Turlock.

SEISMICITY

Regional Faults

There are no known active faults in the Study Area or in the valley portion of Stanislaus County. Nearest are the Bear Mountain and Melones faults in the eastern part of Stanislaus County, which have been inactive for the last 150 million years¹, and the Tesla Ortigalita fault in the Diablo Range. Two potentially active faults have been identified in the San Joaquin Valley. The San Joaquin Fault, lying close to Interstate 5 about 18 miles west of Turlock, is a Late Quaternary fault that shows displacement during the last 700,000 years. The Vernalis Fault, lying about 20 miles northwest of Turlock, is thought to belong to the Quaternary Period with displacement sometime during the past 1,600,000 years.

The Study Area could be impacted by earthquakes along faults in other parts of the region and elsewhere in California. However, impacts resulting from such an event are not likely to be severe. Figure 10-2 identifies active and potentially active faults in the larger region.

Seismic Structural Safety

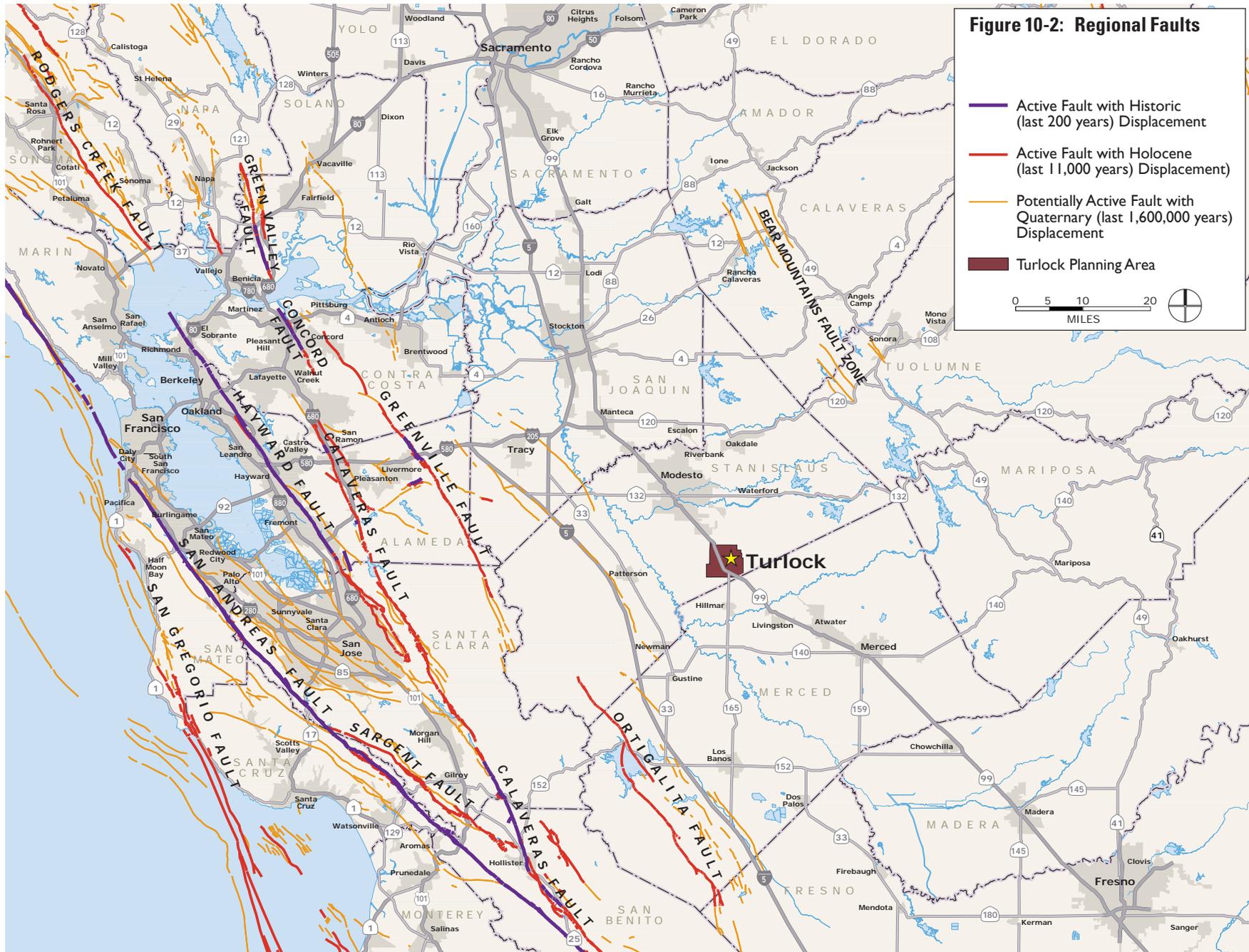
Because there are no known active faults within or near the Study Area, the greatest seismic hazard in Turlock is the structural danger posed by groundshaking from earthquakes originating outside of the area. A maximum-intensity earthquake would be capable of causing considerable damage in ordinary structures, and in turn, risk of injuries, loss of life, and property damage.

Damage from ground shaking is a combined function of the structural integrity of the buildings before the earthquake, and the quality of soils or bedrock underlying the buildings. A foundation of rock or very firm material can intensify short-period motions, which affect low-rise

¹ Stanislaus County General Plan Support Documentation, 1987.

Figure 10-2: Regional Faults

- Active Fault with Historic (last 200 years) Displacement
- Active Fault with Holocene (last 11,000 years) Displacement
- Potentially Active Fault with Quaternary (last 1,600,000 years) Displacement
- Turlock Planning Area



buildings more than tall, flexible ones. A deep layer of saturated alluvium can cushion low-rise buildings, but it can also accentuate the motion in tall buildings.

Older structures generally were not built to withstand the lateral stress imposed by the groundshaking of a major earthquake. This applies particularly to buildings having walls of non-reinforced brick held together by sand-lime mortar, and in general to all multistoried buildings that do not have steel reinforcements. Other potentially dangerous conditions include architectural features that are not firmly anchored, such as parapets and cornices; roadways, including column and pile bents and abutments for bridges and overcrossings; and above-ground storage tanks and their mounting devices.

Most masonry structures in Turlock's Downtown were built in the 1920s, well before the adoption of stricter building requirements imposed in 1933. However, these structures, many of which have unoccupied second floors, have withstood the test of time defined by the Historical Building Code, and no action is planned to bring them up to code.

GEOLOGIC HAZARDS

Geologic hazards that may exist within the Study Area include soil erosion, expansive soils, settlement and subsidence. The Study Area is primarily flat, and so the risk of unstable soils or landslides is considered low and not discussed further.

Soil Erosion

Soil erosion is a process by which soil materials are worn away and transported to another area, either by wind or water. Rates of erosion can vary depending on the soil material and structure, and the placement and level of human activity. Soil containing high amounts of silt can be easily eroded, while sandy soils are less susceptible. Erosion is most likely to occur on sloped areas with exposed soil, especially where unnatural slopes are created by cut-and-fill activities.

Not accounting for slope and groundcover factors, soils high in clay have low susceptibility to erosion because they are resistant to detachment. Coarse textured soils, such as sandy soils, also have low erosion potential despite their easy detachment, because of low runoff. Medium textured soils, such as the silt loam soils, are moderately susceptible to erosion, while soils with a high silt content are the most susceptible.²

² Institute of Water Research, Michigan State University, website: <http://www.iwr.msu.edu/rusle/kfactor.htm>. Viewed April 13, 2007.

Just over half of the Study Area is underlain by soils that are moderately or highly susceptible to erosion, with K values greater than 0.25 (K values range from 0.05 to 0.43, with higher values corresponding to greater susceptibility to erosion.) Soils covering 647 acres have K values of 0.41 to 0.43, indicating high susceptibility for erosion. These soils are located in the far west of the Study Area, primarily underlying land designated for agricultural use through the planning period. Since the Study Area is primarily flat and has no natural waterways, the risk of soil erosion due to water is relatively low. However, if stormwater is not managed well, especially during construction, drainage can be a significant cause of soil erosion. Excessive soil erosion can eventually damage building foundations and roadways.

Expansive Soils

Expansive soils possess a “shrink-swell” characteristic. Shrink-swell is the change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying. Structural damage may occur over a long period of time, usually the result of inadequate soil and foundation engineering, or the placement of structures directly on expansive soils.

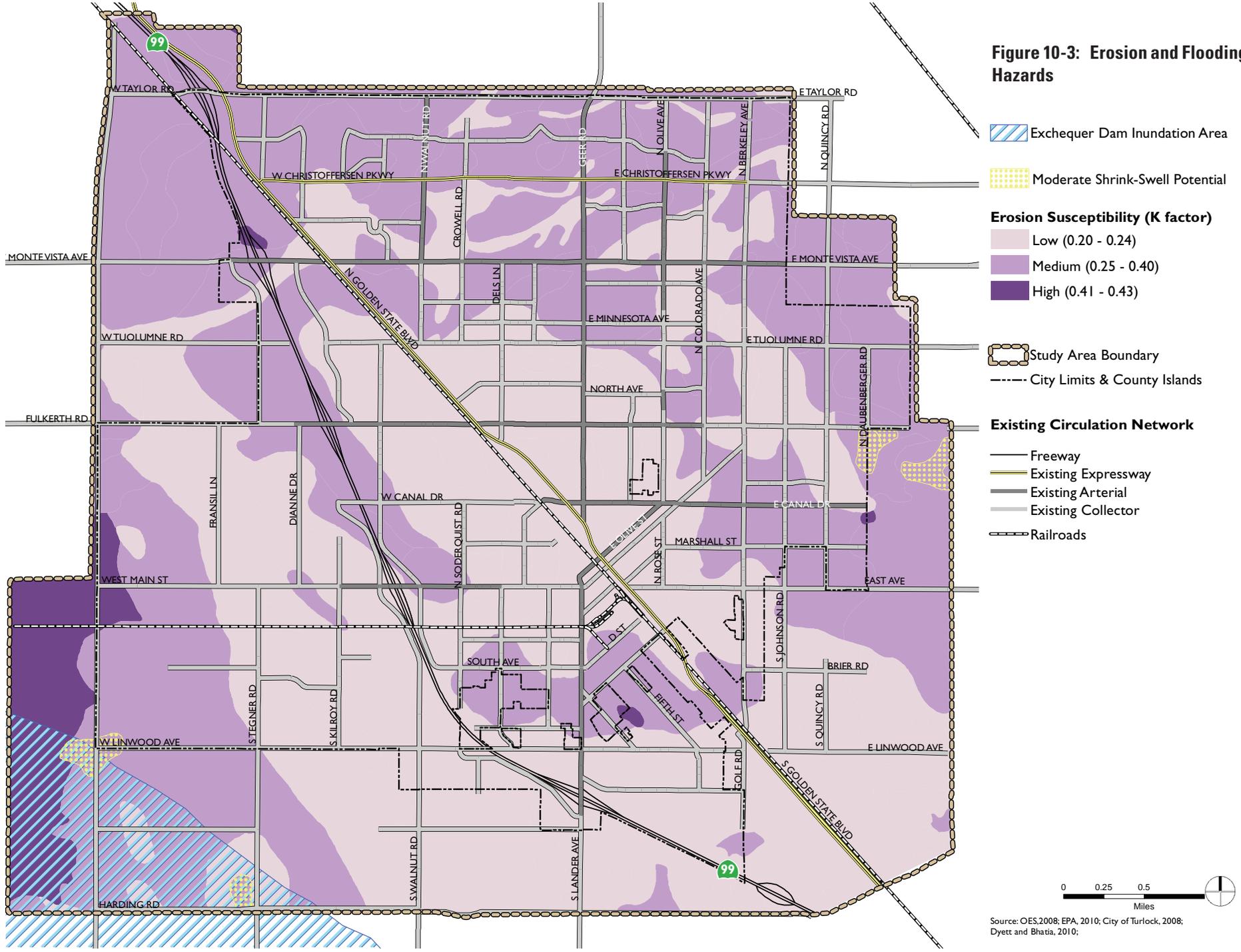
Soils covering 99 percent of the Study Area are considered to have a low shrink-swell potential. The two moderate shrink swell soils, Madera sandy loam (MdA) and Snelling sandy loam (SnA), are found only in small areas on the eastern edge of the Study Area and at the southwest corner of the WISP.

Erosion and shrink-swell potential in the Study Area are shown in Figure 10-3.

Settlement

Settlement is the depression of the bearing soil when a load, such as that of a building or new fill material, is placed upon it. Soils tend to settle at different rates and by varying amounts depending on the load weight, which is referred to as differential settlement. Differential settlement can be a greater hazard than total settlement if there are variations in the thickness of previous and new fills or natural variations in the thickness and compressibility of soils across an area. Settlement commonly occurs as a result of building construction or other large projects that require soil stockpiles. If these areas are comprised of soil stockpiles or other areas of unconsolidated fill materials, they have the potential to respond more adversely to additional load weights as compared to adjacent native soils.

Figure 10-3: Erosion and Flooding Hazards



Exchequer Dam Inundation Area

Moderate Shrink-Swell Potential

Erosion Susceptibility (K factor)

Low (0.20 - 0.24)

Medium (0.25 - 0.40)

High (0.41 - 0.43)

Study Area Boundary

City Limits & County Islands

Existing Circulation Network

Freeway

Existing Expressway

Existing Arterial

Existing Collector

Railroads



Source: OES, 2008; EPA, 2010; City of Turlock, 2008; Dyett and Bhatia, 2010;

Subsidence

Subsidence occurs when a large portion of land is displaced vertically, usually due to the withdrawal of groundwater, oil, or natural gas. Soils that are particularly subject to subsidence include those with high silt or clay content. Given the falling water table in the vicinity of Turlock (see Chapter 7), subsidence is a possibility, particularly in areas with high clay content soils.

POLICIES

Guiding Policies

10.2-a Minimize Geologic and Seismic Risk. Continue to use building codes as the primary tool for reducing seismic risk in structures.

The California Building Code, which has been adopted by Turlock, Stanislaus County and the other cities in the County, is intended to ensure that buildings resist major earthquakes of the intensity or severity of the strongest experienced in California, without collapse, but with some structural as well as nonstructural damage. In most structures, it is expected that structural damage could be limited to repairable damage, even in a major earthquake.

Implementing Policies

10.2-b Meet Most Current Seismic Standards. Continue to require all new buildings in the City to be built under the seismic requirements of the latest adopted California Building Code.

10.2-c Provide Incentives for Rehabilitation. Provide information and incentives for property owners to rehabilitate existing buildings using construction techniques to protect against seismic hazards.

10.2-d Prohibit Higher Intensity Use for Seismically Unsafe Buildings. For buildings identified as seismically unsafe, prohibit a change to a higher occupancy or more intensive use until an engineering evaluation of the structure has been conducted and structural deficiencies corrected consistent with City building codes.

10.2-e Ensure Stability of Sensitive Public Facilities. Evaluate the structural stability and ability to withstand seismic activity of water tanks, underground utilities, berms, and other sensitive public facilities, and plan for any needed repairs.

- 10.2-f Require Geotechnical Investigations for Proposed Critical Structures.** Require that geotechnical investigations be prepared for all proposed critical structures before construction or approval of building permits, if deemed necessary. Critical structures include police stations, fire stations, emergency equipment storage buildings, water towers, wastewater lift stations, electrical substations, fuel storage facilities, large public assembly buildings, designated emergency shelters, buildings three or more stories high, and any others deemed at the time of application. The investigation shall include estimation of the maximum credible earthquake, maximum ground acceleration, duration, and the potential for ground failure because of liquefaction or differential settling.
- 10.2-g Require Investigations for All Development On Sites Where Soils Pose Risk.** Require soils reports for new development projects where soils pose a potential geologic risk, and use the information to determine appropriate permitting requirements, if deemed necessary.
- 10.2-h Require Erosion Control Plans.** Require new development to include grading and erosion control plans prepared by a qualified engineer or land surveyor.

10.3 FLOODING AND DRAINAGE

FLOOD ZONES

Flood risk is a consequence of rainfall characteristics, topography, water features, vegetation and soil coverage, impermeable surfaces, and urban stormwater management infrastructure. Turlock has an extremely low risk of a major flood event. While there are rivers in the vicinity of the Turlock, the Study Area's only water features are irrigation canals, stormwater detention ponds, and a few small freshwater ponds. No part of the Study Area is within either the FEMA-designated 100-year or 500-year flood plain.

Due to its flat terrain, Turlock can occasionally experience shallow flooding after heavy rainfall in the winter months. Although major flooding is not anticipated, as agricultural and open space lands are converted to urban uses, there will be an increase in stormwater runoff from additional impervious surfaces. To minimize those impacts, General Plan policies seek to manage

stormwater runoff, through the permitting process, good stormwater management practices, and the construction of drainage basins. See also Section 3.3, Infrastructure.

DAM SAFETY AND INUNDATION HAZARD

The previous General Plan reported that the New Don Pedro Dam presented a potential flooding hazard to the Study Area in the case of maximum water releases. Current dam inundation hazard mapping by the California Emergency Management Agency shows the Turlock Study Area to be entirely outside the Dam Inundation Area for New San Pedro Dam.

As shown on Figure 10-3, Geologic and Flooding Hazards, an area in the far southwest of the Study Area falls within the Dam Inundation Area for New Exchequer Dam, located on the Merced River in Mariposa County. This dam, completed in 1967, holds back just over one million acre-feet of water in Lake McClure. Large-scale inundation could be called by dam failure resulting from extreme storm, earthquake, or erosion of the embankment and foundation.

Stanislaus County and its cities have prepared a Multi-Jurisdictional Hazard Mitigation Plan. The Plan, updated in 2010, identifies actions that will be taken to respond to flood-related emergencies in the event that flooding occurs.

POLICIES

See also Section 3.3, Infrastructure for policies on storm drainage.

Guiding Policies

10.3-a Protect the Community from Flood Hazards. Protect the community from risks to life and property damage posed by flooding.

Implementing Policies

10.3-b Cooperate in Multi-Jurisdictional Hazard Mitigation Plan. Continue to cooperate with the County and appropriate State and federal agencies in preparing and implementing the Multi-Jurisdictional Hazard Mitigation Plan.

10.3-c Reduce Stormwater Runoff from Private Development. Integrate new standards into the Municipal Code that would Update Zoning Ordinance and development review process as needed to reduce peak-hour stormwater flow and increase groundwater recharge.

See Section 6.4: Sustainable Site Planning for policies on stormwater Best Management Practices.

10.3-d Improve Stormwater Management from Streets. Update City street design standards to allow for expanded stormwater management techniques. These may include:

- Canopy trees to absorb rainwater and slow water flow.
- Directing runoff into or across vegetated areas to help filter runoff and encourage groundwater recharge.
- Disconnecting impervious areas from the storm drain network and maintain natural drainage divides to keep flow paths dispersed.
- Providing naturally vegetated areas in close proximity to parking areas, buildings, and other impervious expanses to slow runoff, filter out pollutants, and facilitate infiltration.
- Directing stormwater into vegetated areas or into water collection devices.
- Using devices such as bioretention cells, vegetated swales, infiltration trenches and dry wells to increase storage volume and facilitate infiltration.
- Diverting water away from storm drains using correctional drainage techniques.



Limiting the extent of impervious surfaces allows stormwater to drain and filter, minimizing the impacts of stormwater runoff.

10.4 PUBLIC SAFETY AND EMERGENCY MANAGEMENT

FIRE AND EMERGENCY SERVICES

Facilities and Staffing

The Turlock City Fire Department is an all risk department that provides fire and emergency response within the city limits. Areas outside city limits but within the Study Area are served by the Turlock Rural Fire District, the Keyes Fire Department, and the Denair Fire Department. Urban growth according to the General Plan requires annexation, and new development will be served by the City's Fire Department.

The Turlock Fire Department operates four fire stations located in districts that are designed to maximize efficiency and help reduce response times. There is one staffed fire engine at each of the four fire stations with three firefighters on each engine. The current total staffing level is 13 line personnel each day. The Department also operates a 110-foot aerial ladder truck (Truck 71) that is used for suppression activities, air support, technical rescue, and light support. The truck is cross-staffed by personnel at Fire Station No. 1. As of 2011, the Department had 45 line personnel and four administrative staff. In addition to responding to fire and medical emergencies, Department personnel also train and respond to Hazardous Materials and Technical Rescue calls, investigate fire causes, conduct plan review and fire safety inspection, and provide CPR training and public education, among other services.

As the City of Turlock plans for future growth, fire station location will be an important consideration to meet demand for emergency calls and minimize the response times. The General Plan anticipates that one new fire station will be developed with expansion into the Southeast master plan areas. Existing and proposed fire stations are shown in Figure 10-4. The precise location of future stations may change. A feasibility study should be conducted to analyze the impacts of the City's growth on the Fire Department.

Fire Threats

Turlock Fire Department responds to commercial and residential structure fires, vehicle fires, rubbish fires, and vegetation fires. Grass fires occur in the urban interface area; on May 22, 2008, a wind-driven grass fire burned about 100 acres and threatened several buildings.

Wildland fire threats are greatest in mountain and foothill areas, where steep slopes, volatile vegetation, and windy conditions increase fire risk. Since the Study Area is almost all flat urbanized or agricultural land, fire risk is low.

The characteristics of the urban environment in Turlock do not make it a high risk area for urban fires—the building stock is in generally good condition and the City Fire Department provides adequate service to the area. The California Department of Forestry and Fire Protection has designated the entire Study Area as a Low Risk Area (LRA). Small areas at the northwest corner, near Keyes, are designated as being moderately threatened (see Figure 10-4).

ISO Rating

The City of Turlock has an Insurance Services Office (ISO) rating of Class 3. A Class 3 ISO rating indicates that the Fire Department has adequate facilities, personnel, equipment, and expertise to serve the current population. As the City grows, the Department’s service capacity will need to continue to increase in order to maintain this rating.

Emergency Response

Turlock adopted the Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan, updated in 2010. The plan identifies measures to reduce the impacts of natural and manmade hazards and to facilitate the recovery and repair of structures if damage should occur from hazardous events. Adoption of the plan ensures that Turlock is eligible for certain federal and State funds for disaster recovery in case of such an event.

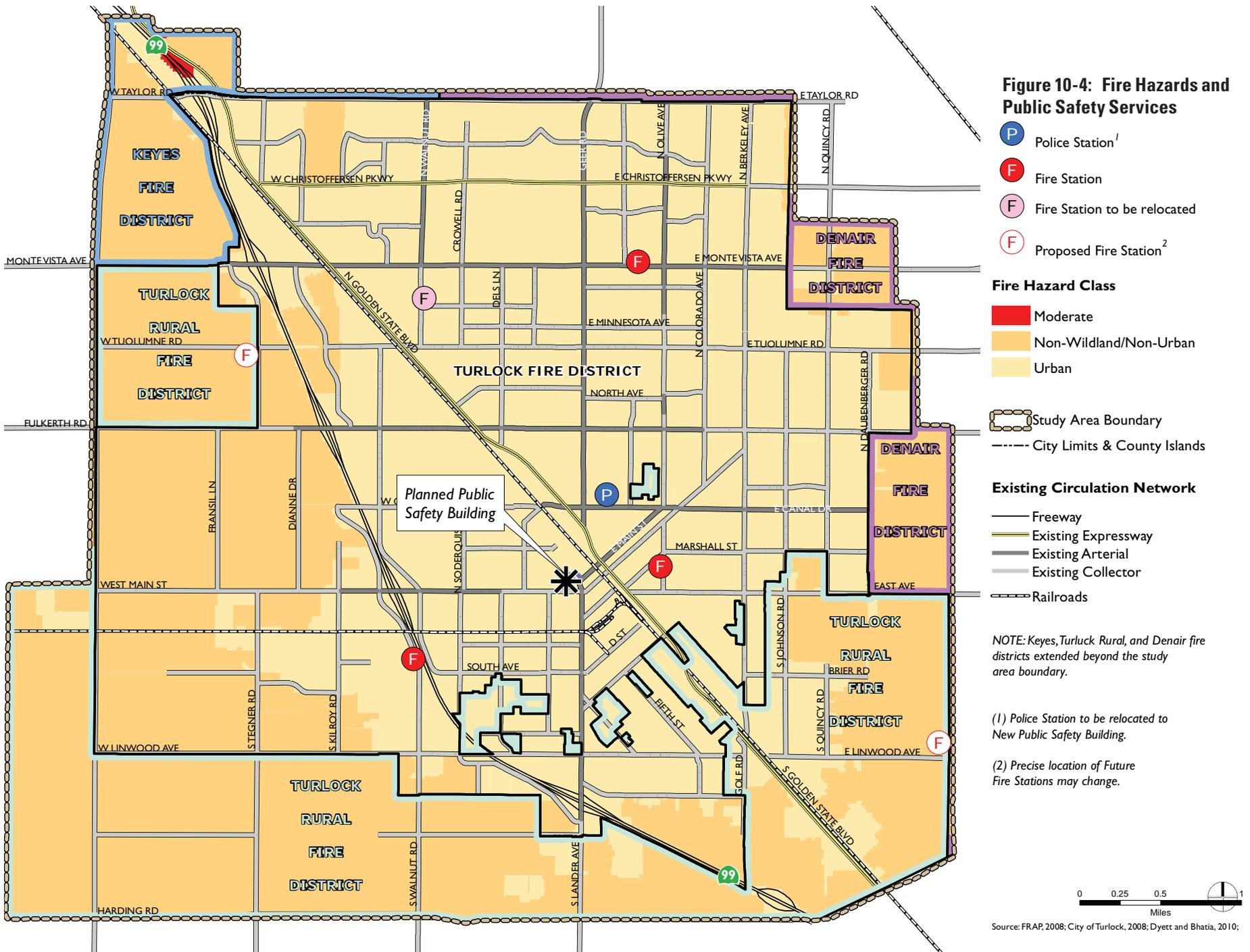
Fire response time is typically measured as an average for the entire department, as well as for each engine company. The Fire Department has maintained an average response time standard of five minutes. The General Plan calls for the Fire Department to strive to achieve a standard of a six-minute response time on average for all calls citywide. Training facilities are essential for the City’s ability to prepare for and mitigate emergency calls. Future training grounds should include an up-to-date drill tower, props, and classroom, where the City could offer training and classes for other fire agencies in the south County area.

The Fire Department will also monitor business growth, especially the development and operation of large facilities in the WISP, to ensure that it is capable of mitigating emergencies at these facilities.



Water fire-flow capability must be regularly monitored to ensure adequate fire protection (top).

The design of streets and new development sites must meet Fire Department access standards; these in turn should be evaluated for unnecessary impacts on design quality (bottom).



POLICE SERVICES

Facilities and Infrastructure

Police services within city limits are provided by the Turlock Police Department, while unincorporated parts of the Study Area are served by the Stanislaus County Sheriff and/or the California Highway Patrol. As with fire protection, the Turlock Police Department will serve new growth areas.

As of 2011, the Turlock Police Department has a staff of 125, 81 of whom are sworn patrol officers. A 2007 Space Needs Assessment confirmed that existing facilities and staffing are not adequate to maintain a sufficient level of service for future population growth. To address this concern, the City is in the process of developing a new public safety facility for police and fire administration. The new facility, to be located at 244 North Broadway, is to accommodate a projected staff of 262 by 2030, as calculated in the Needs Assessment.

While initially both the Police and Fire Departments will be housed in the new facility, the Needs Assessment views the Fire Department space serving as the expansion area for the Police Department over the long term (10 to 20 years), at which point the Fire Department would move to an addition or to a new facility. In the meantime, housing the two departments together is anticipated to improve response time, increase communication and teamwork between the two departments, and allow efficient sharing of space.

At the same time, staff has emphasized the importance of recognizing the connection between the location of new growth and policing needs. As soon as a new development project breaks ground, officers are needed for general oversight and vandalism prevention. Development areas that are noncontiguous and physically separated from the existing urbanized area can strain existing police resources, as they require additional beats and expanded radio coverage. This General Plan's careful sequencing of growth areas, with priority given to areas in the Southeast contiguous to existing neighborhoods, reduces the impact on the Police Department.

A critical element of police services is radio communication. The Turlock Police Department Communications Center currently serves as a Public Safety Answering Point (PSAP) and provides primary dispatching services for four emergency service agencies including the Turlock Police Department, the Turlock Fire Department, California State University – Stanislaus Police Department (during certain days/hours) and the Gustine Police Department.

The infrastructure of the Turlock Police Communications Center also provides other departments and agencies inside and outside the City of Turlock with communication abilities. As development continues in the City of Turlock, additional infrastructure may be necessary to ensure adequate communication capacity. This includes but is not limited to a minimum radio coverage ratio and minimum signal strength in and out of structures.

Community Oriented Policing

The City is interested in expanding its focus on Community Oriented Policing. Community Oriented Policing is comprised of three key components including community partnerships, organizational transformation, and problem solving. Community partnerships involve collaborative relationships between the law enforcement agency and the individuals and organizations to develop solutions to problems and increase public trust. Organizational transformation aligns management, structure, personnel, and information systems to support community partnerships and problem-solving efforts. Problem solving is the process of engaging in the proactive and systematic examination of issues to develop and evaluate effective responses.

The Police Department is focused on continually improving its operations and effectiveness. Some of the Department's strategic goals are summarized below.

Organizational Transformation

The Department aims to improve its climate and culture by reinforcing a commitment to the community policing philosophy and the strategic plan, being proactive, and being transparent. Leadership, labor unions, and front-line officers all have a responsibility to work as partners.

Community Partnerships

The Department's relationship to the community should be enhanced, by encouraging officers to take a team approach to problem solving; devoting enough human and financial resources to community policing; and considering geographic deployment plans to enhance customer service and facilitate more contact between police and citizens.

Problem Solving

Problem-solving involves a series of steps, from scanning to analysis to response and assessment. Effective scanning involves a careful examination of basic problems and their scope. Analysis

requires an understanding of the dynamics of the problem and the limits of current responses, toward identification of an effective and appropriate response. Response strategies should then be continually assessed.

Crime Prevention Through Environmental Design

Crime Prevention through Environmental Design (CPTED) is a crime prevention philosophy that proper design and effective use of the built environment can lead to a reduction in fear and incidents of crime and an improved quality of life. The goal of CPTED is to reduce opportunities for crime that may be inherent in the design of structures or neighborhoods. CPTED evaluates environmental conditions and utilizes intervention methods to control human / criminal behavior and reduce fear of crime.

The Turlock Police Department recognizes the value of CPTED and intends to evaluate the feasibility of implementing a comprehensive CPTED program. See Section 6.7, Urban Design for related policies.

Part One Crime Ratio

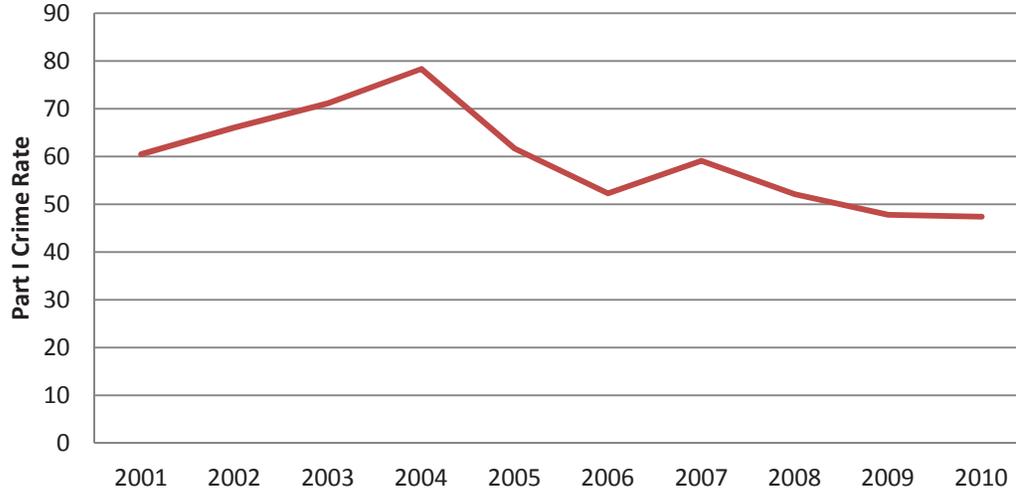
Uniform crime reporting is a collective effort on the part of city, county, state, tribal, and federal law enforcement agencies to present a nationwide view of crime. Agencies throughout the country participating in the Uniform Crime Reporting (UCR) Program provide summarized reports on eight Part I offenses known to law enforcement and reports on persons arrested. The Turlock Police Department submits crime reports monthly to a centralized crime records facility in California. The California UCR Program then forwards the data, using uniform offense definitions, to the FBI's national UCR Program. The FBI compiles, publishes, and distributes the data to participating agencies, state UCR Programs and others interested in the Nation's crime data.

UCR requires crimes to be categorized in one of two classifications, Part I or Part II. Part I crimes are the more serious and include criminal homicide, forcible rape, robbery, aggravated assault, burglary, larceny – theft (except motor vehicle), motor vehicle theft, and arson. Figure 10-5 depicts the Part I crime ratio in the City of Turlock over the last ten years.

Over the last several years, the Turlock Police Department has significantly reduced the Part I crime rate thereby creating a more desirable degree of safety and quality of life throughout the

community. As the city expands through development a key consideration will be the potential impact to the crime rate. The police department will require the facilities, equipment, resources, partnerships, and staffing to ensure the crime rate does not increase as a result of development.

Figure 10-5: Part 1 Crime Rate



Source: City of Turlock Police Department, 2011.

Response Times and Available Time

Response times are measured from the time a call for service is received until the time a police employee arrives. Response times are categorized by priority. Priority 1 is the most urgent call for service while Priority 3 poses no immediate, ongoing risk to the public. The following table represents the average response times for Priority 1, Priority 2, and Priority 3 calls for the last ten years. The Turlock Police Department has standardized Priority 1 response times of 6.5 minutes. The impact additional development may have on standardized response time should be a consideration.

TABLE 10-2: POLICE DEPARTMENT RESPONSE TIMES

YEAR	PRIORITY 1	PRIORITY 2	PRIORITY 3	NUMBER OF PRIORITY 1 INCIDENTS
2010	06:51	10:40	33:33	594
2009	06:02	09:31	34:02	524
2008	06:24	12:20	37:46	564
2007	07:14	14:47	45:28	552
2006	06:46	12:40	35:56	483
2005	07:15	14:11	42:56	505
2004	07:48	13:30	43:50	491
2003	06:45	12:12	40:04	447
2002	06:51	12:51	40:37	366
2001	06:17	12:04	37:44	358

Source: City of Turlock Police Department, 2011.

The amount of time a police officer has to engage in proactive activities is known as “Available Time.” The Turlock Police Department recognizes the value of proactive policing strategies. This includes education, enforcement, community relations, quality of life concerns, and community oriented policing activities. Adequate staffing levels are directly related to the percentage of officer available time.

Public Employees per 1,000 Residents

The United States Department of Justice (DOJ) Bureau of Justice Statistics (BJS) produces a report compiled from a representative sample of law enforcement agencies nationwide. According to the December 2010 report, for communities of 50,000 to 99,999 residents, the nationwide average number of sworn police officers is 1.8 per 1,000 residents. In 2010, the number of sworn officers per capita in the City of Turlock was 1.2, up from 0.8 in 2006. While this ratio should not be used as the sole gauge for adequate police staffing, it is an important tool for long term staffing trend analysis and its correlation to the crime index. As development continues in Turlock it will be necessary to ensure that police service adjusts to an increased population.

POLICIES

Guiding Policies

- 10.4-a Protect from Hazards.** Continue to protect people and property from natural and manmade hazards.
- 10.4-b Provide High-Quality Public Safety Services.** Continue to provide a level of service standard that meets or exceeds the national average in response to police protection and fire protection/prevention through efficient organization, administration and annual funding.
- 10.4-c Expand Services in Coordination With Growth.** Continue to promote the orderly and efficient expansion of public safety facilities to adequately meet the needs of the community while minimizing adverse fiscal and environmental impacts. Continue to coordinate capital improvements planning for public safety facility needs with implementing policies set forth in this Plan with respect to the direction, extent, and timing of Turlock’s growth.
- 10.4-d Establish Equitable Funding Mechanisms.** Continue to implement and review existing, and consider establishing new, equitable methods for minimizing public facility and service costs associated with new development. Take advantage of State and federal funding and grant opportunities as they become available.
- 10.4-e Coordinate With Other Agencies and Community Organizations.** Continue to cooperate with other agencies and community organizations to improve the efficiency and effectiveness of fire and police protection within the Study Area.
- 10.4-f Educate the Public on Prevention Strategies.** Work with nonprofits, service providers, private businesses, the media and the public to educate on prevention and protection strategies.
- 10.4-g Be Prepared for Emergencies.** Continue to cooperate with Stanislaus County and other jurisdictions in preparing and implementing Emergency Preparedness Plans.
- 10.4-h Strategic Planning.** Continue to develop strategic plans that identify high-priority community needs and organizational, staffing, and resource requirements to meet those needs.

Implementing Policies

Fire Service

- 10.4-i Meet Response Time Standard Throughout Study Area.** Adequately distribute fire-fighting equipment and personnel throughout the Sphere of Influence to ensure quick response time (strive to achieve 5 minute response time to all calls within the primary service area of each fire station, 90% of the time). Critical factors that affect response times are station locations and road circulation patterns.
- 10.4-j Coordinate Facilities Planning With Urban Expansion.** As part of master planning for areas outside current City limits, determine an appropriate location for new fire stations/facilities, based on the configuration and phasing of new development and urban expansion. Ease of access and efficient service areas should be major determinants. When preparing master plans, assess the ability of the Fire Department to meet established service standards, and identify strategies to mitigate potential service impacts. Ensure that the Capital Facility Fee program, the Community Facilities District #2 and any other funding mechanisms are updated to provide adequate funding of required facilities, equipment, apparatus and services.
- 10.4-k Maintain Mutual Aid Agreements.** Maintain mutual aid agreements with other fire and emergency service departments in Stanislaus County.
- 10.4-l Monitor Water Capacity.** Continue to monitor water fire-flow capability throughout the City and improve water availability if any locations have flows considered inadequate for fire protection.
- 10.4-m Maintain Appropriate Urban Design Standards.** Roadways shall be developed in accordance with General Plan standards contained in Chapter 5 of the General Plan. Deviations from roadway standards shall not be granted unless it is determined by the Fire Department and the City Engineer that it shall have no impact on the delivery of fire services to the affected area.
- 10.4-n Enforce Fire Safety Codes.** Continue enforcement of all aspects of Chapter 4-3 of the Municipal Code, Fire Codes and Administration.
- 10.4-o Maintain ISO Rating.** Strive to maintain the City's Class 3 ISO rating, or better, for fire protection. As necessary, identify and implement additional financing mechanisms.
- 10.4-p Training Facilities.** Ensure that training facilities are maintained and upgraded as needed.

Police Service

10.4-q Evaluate Beat System to Optimize Police Service. Continue to monitor and revamp as necessary the Police Department’s beat system to provide high quality and efficient crime deterrence, ensure a minimal response time, and optimize police available time throughout the City as it grows.

The Police Department strives to achieve a 6.5-minute response time to all Priority 1 calls, and will consider developing a performance indicator for police available time.

10.4-r Community Crime Prevention Programs. Continue and encourage existing community crime prevention programs such as Neighborhood Watch, PAL, DARE, and gang awareness, to help deter crime throughout the City.

10.4-s Emphasize Community-Oriented Policing. Maintain the commitment to the Community Oriented Policing philosophy implemented in 1993. Implement the Community Oriented Policing Program through cooperative staff efforts and necessary funding.

10.4-t Maintain Community Partnerships. Form proactive and creative community partnerships that develop responsible ownership for public safety in Turlock. The policy is accomplished as follows:

- Educate the public in how they can improve their personal safety;
- Use a proactive and preventative approach that is issue-oriented;
- Support innovative approaches to problem-solving;
- Establish mutual trust and communication among Police Services staff and the community;
- Provide positive role models and values through activities in the neighborhoods and community as a whole.
- Utilize an ongoing evaluative and flexible approach to community safety.
- Apply professional service and equitable application of the law.

Combined Public Services

10.4-u Complete Public Safety Building Project. Complete the construction of the new Public Safety Building.

10.4-v Examine Capital Facilities and Community Facilities District Fees. Undertake a reexamination of the present Capital Facilities and Community Facilities District fee schedules to reflect changes in Public Safety facility needs identified in this Plan.

10.4-w Coordinate Facilities Planning With Urban Expansion. When preparing master plans, assess the ability of the Police Department to maintain service levels, and identify strategies to mitigate potential service impacts. Ensure that the Capital Facility Fee program, the Community Facilities District #2 and any other funding mechanisms are updated to provide adequate funding of required facilities, equipment, apparatus and services.

This may include implementation of the second phase of the Public Safety Building pursuant to the Space Needs Assessment.

10.4-x Radio Infrastructure Requirements. Amend Chapter 8 (Building Regulations) of the Turlock Municipal Code to require all new construction to be designed to amplify emergency radio communications within larger buildings.

10.4-y Maintain Access to Fire Hydrants. Develop and implement a program to apply and maintain red curbing at all fire hydrants.

Emergency Management

10.4-z Maintain Coordinated Emergency Response Program. Update the Emergency Management Plan periodically to maintain currency with available information. Continue to cooperate with Stanislaus County and other jurisdictions in preparing and implementing Emergency Preparedness Plans.

10.4-aa Maintain Evacuation Routes. Ensure that major access and evacuation corridors are available and unobstructed in case of major emergency or disaster.

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