



7 – Public Facilities and Utilities

7.1 Introduction

Development is dependent on a complicated network of public facilities and utilities. Each type of service has a unique set of constraints and must adapt to growth and change differently. This chapter describes the capacities of the various facilities and utilities in Merced County, as well as service levels for various city services.

This chapter is divided into the following sections:

- Introduction (Section 7.1)
- Water Supply and Delivery (Section 7.2)
- Wastewater Collection/Disposal (Section 7.3)
- Storm Drainage/Flooding (Section 7.4)
- Solid and Hazardous Waste (Section 7.5)
- Utilities (Section 7.6)
- Law Enforcement (Section 7.7)
- Fire Protection (Section 7.8)
- Schools (Section 7.9)
- Community Services (Section 7.10)
- Major Findings (Section 7.11)

7.2 Water Supply and Delivery

Introduction

The purpose of this section is to summarize existing information regarding water supply and delivery infrastructure in Merced County. This section focuses primarily on unincorporated areas within the county that are serviced by an existing water district or community water system. Information is provided on water treatment, current demand, storage and distribution systems, and the condition of these facilities.

Key Terms

The following key terms used in this chapter are defined as follows:

Acre-Foot (acre-ft). The volume of water required to cover one acre of land (43,560 square feet) to a depth of one foot. One acre-foot is equal to 325,851 gallons or 1,233 cubic meters. Historically, an acre-foot represents the amount of water typically used by one family during a year.

Aquifer. A geologic formation that is water bearing. A geological formation or structure that stores and/or transmits water, such as to wells and springs. Use of the term is usually restricted to those water-bearing formations capable of yielding water in sufficient quantity to constitute a usable supply for people's uses.

Commercial Water Use. Water used for motels, hotels, restaurants, office buildings, other commercial facilities, and institutions. Water for commercial uses come both from public-supplied sources, such as a county water department, and self-supplied sources, such as local wells.

Confined Aquifer. Soil or rock below the land surface that is saturated with water. There are layers of impermeable material both above and below the confined aquifer which is then under pressure so that when the aquifer is penetrated by a well, the water will rise above the top of the aquifer.

Cubic Feet per Second (cfs). A rate of flow, in streams and rivers, for example. It is equal to a volume of water one foot high and one foot wide flowing a distance of one foot in one second. One "cfs" is equal to 7.48 gallons of water flowing each second.

Domestic Water Use. Water used for household purposes such as drinking, food preparation, bathing, washing clothes, dishes, and animals, flushing toilets, and watering lawns and gardens.

Drawdown. A lowering of the groundwater surface level caused by groundwater pumping.

Groundwater. (1) Water that flows or seeps downward and saturates the soil or rock, supplying springs and wells. The upper surface of the saturated zone is called the water table. (2) Water stored underground in rock crevices and in the pores of geologic materials that make up the crust of the earth.

Industrial Water Use. Water used for industrial purposes in such industries as steel, chemical, paper, food processing, and petroleum refining. Nationally, water for industrial uses comes mainly (80 percent) from self-supplied sources, such as local wells or withdrawal points in a river, but some water comes from local water service providers.

Maximum Contaminant Level (MCL). The designation given by the U.S. Environmental Protection Agency (EPA) to water-quality standards promulgated under the Safe Drinking Water Act. The MCL is the greatest amount of a contaminant that can be present in drinking water without creating either a risk to human health (primary standard) or aesthetic concerns (secondary standards).

Microgram (μg). One-millionth of a gram.

Micrograms per liter ($\mu\text{g/L}$). A unit of concentration of a constituent in water or wastewater. It represents 0.000001 gram of a constituent in one liter of water. It is approximately equal to one part per billion (PPB).

Milligram (mg). One-thousandth of a gram.

Milligrams per Liter (mg/L). A unit of concentration of a constituent in water or wastewater. It represents 0.001 gram of a constituent in 1 liter of water. It is approximately equal to one part per million (PPM).

Million Gallons per Day (mgd). A rate of flow of water equal to 133,680.56 cubic feet per day, or 1.5472 cubic feet per second, or 3.0689 acre-feet per day. A flow of one million gallons per day for one year equals 1,120 acre-feet (365 million gallons).

Municipal Water System. A water system that has at least five service connections or which regularly serves at least 25 individuals for 60 days; also called a public water system.

Per Capita Use. The average amount of water used per person using a standard time period, generally per day.

Potable Water. Water of a quality suitable for drinking.

Surface Water. Water that is on the earth's surface, such as in a stream, river, lake, or reservoir.

Unconfined Aquifer. An aquifer whose upper water surface (water table) is at atmospheric pressure, and thus able to rise and fall.

Water Quality. A term used to describe the chemical, physical, and biological characteristics of water, usually in respect to its suitability for a particular purpose.

Water Table. The top of the water surface in the saturated part of an aquifer.

Well (water). An artificial excavation put down by any method for the purposes of withdrawing water from the underground aquifers. A bored, drilled, or driven shaft or a dug hole whose depth is greater than the largest surface dimension and whose purpose is to reach underground water supplies or oil, or to store or bury fluids below ground.

Regulatory Setting

Water in California is managed by a complex network of Federal and State regulations. California administers rights to surface water at the State level, but not rights to groundwater, which is managed under a variety of authorities including local governments. Major regulatory policies pertaining to domestic water management are summarized below.

- **California Water Code.** The California Water Code, a section of the California Code of Regulations, establishes the governing law pertaining to all aspects of water management in California. Domestic water service in the unincorporated areas of Merced County is generally provided by special districts. These agencies operate in accordance with the California Water Code.
- **Safe Drinking Water Act.** The Safe Drinking Water Act (SDWA), administered by the United States Environmental Protection Agency (EPA) in coordination with the State Department of Health Services (DHS), is the main federal law that ensures the quality of Americans' drinking water. In California the DHS has been reorganized into the California Department of Public Health (CDPH) with drinking water regulations mandated under its Division of Drinking Water and Environmental Management. Under the SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. In 1996, Congress amended the Safe Drinking Water Act to emphasize sound science and a risk-based standard setting, small water supply system flexibility and technical assistance, community-empowered source water assessment and protection, public right-to-know, and water system infrastructure assistance through a multi-billion-dollar state revolving loan fund. Key primary and secondary drinking water standards under the SDWA are summarized in Table 7-1.

**TABLE 7-1
SDWA Primary and Secondary Drinking Water Standards**

Contaminant	Maximum Contaminant Level (MCL)¹
Primary	
Antimony	0.006 mg/L
Arsenic	0.010 mg/L
Asbestos	7 million fibers per liter (MFL)
Barium	2 mg/L
Beryllium	0.004 mg/L
Cadmium	0.005 mg/L
Chromium	0.1 mg/L
Copper ²	1.3 mg/L
Cyanide	0.2 mg/L
Fluoride	4.0 mg/L
Lead ²	0.015 mg/L
Mercury	0.002 mg/L
Nitrate (measured as Nitrogen)	10 mg/L
Nitrite (measured as Nitrogen)	1 mg/L
Selenium	0.05 mg/L
Thallium	0.002 mg/L
Contaminant	Secondary Standard³
Secondary	
Aluminum	0.05 to 0.2 mg/L
Chloride	250 mg/L
Color	15 (color units)
Copper	1.0 mg/L
Corrosivity	non-corrosive
Fluoride	2.0 mg/L
Foaming Agents	0.5 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Odor	3 threshold odor number
pH	6.5-8.5
Silver	0.10 mg/L
Sulfate	250 mg/L
Zinc	5 mg/L
Total Dissolved Solids (TDS)	500 mg/L

¹The highest level of a contaminant that is allowed in drinking water.

² Lead and copper are shown as Action Levels, where if more than 10% of tap water samples exceed the Action Level, water systems must take additional steps.

³ EPA's recommended standard for contaminants that may cause adverse cosmetic or aesthetic effects.

Source: U.S. Environmental Protection Agency 2011

- **Urban Water Management Planning Act.** In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code Section 10610 – 10656). The Act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet annually, should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Act requires that urban water suppliers adopt and submit an urban water management plan at least once every five years to the Department of Water Resources. Non-compliant urban water suppliers are ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26 (commencing with Section 79000), or receive drought assistance from the State until the Urban Water Management Plan (UWMP) is submitted pursuant to the Urban Water Management Planning Act.
- **Cortese-Knox-Hertzberg Governmental Reorganization Act of 2000.** The Cortese-Knox-Hertzberg Governmental Reorganization Act of 2000 requires California Local Agency Formation Commission's (LAFCo) to conduct municipal service reviews for specified public agencies under their jurisdiction. One aspect of municipal service review is to evaluate an agency's ability to provide public services within its ultimate service area. A municipal service review is required before an agency can update its sphere of influence.
- **Senate Bills (SB) 610 and SB 221.** SB 610 and SB 221 amended state law, effective January 1, 2002, to improve the link between the information on water supply availability and certain land use decisions made by cities and counties. Both statutes require detailed information regarding water availability to be provided to the City and County decision-makers prior to approval of specified large (greater than 500 dwelling units) development projects. Both statutes also require this detailed information to be included in the administrative record that serves as the evidentiary basis for an approval action by the City or County on such projects. Under SB 610, water assessments must be furnished to local governments for inclusion in any environmental documentation for certain projects as defined in Water Code 10912 subject to the California Environmental Quality Act (CEQA). Under SB 221, approval by a City or County of certain residential subdivisions requires an affirmative written verification of sufficient water supply.
- **San Joaquin River Restoration Settlement Act.** The San Joaquin River Restoration Settlement Act is part of the 2009 Omnibus Public Land Management Act (Public Law 111-11). As a result of the Settlement Act, the San Joaquin River Restoration Program (SJRRP) was enacted with two mandates: (1) to restore and maintain fish populations in "good condition" in the main stem of the San Joaquin River from just below Friant Dam to its confluence with the Merced River, and (2) to reduce or avoid adverse water supply impacts to the Friant Division long term water contractors that may result from interim and restoration flows (SJRRP 2009). Funding sources for the SJRRP include approximately \$17 million per year from the Central Valley Project Friant Division and \$200 million from State bonds. The Settlement Act requires both interim flows and restoration flows. Under the Act, interim flows were to start no later than October 1, 2009 and restoration flows no later than January 1, 2014. The environmental review process for the complete SJRRP is underway with a public draft Program EIR/EIS made available for public review and comment from April through September 2011. (SJRRP 2009).

The interim flow releases down the San Joaquin River channel and potentially as far as the Sacramento-San Joaquin Delta beginning in Water Year (WY) 2010 are intended to provide opportunities to collect relevant data concerning flows, temperatures, fish needs, seepage, losses, recirculation, and recapture and reuse for determining full restoration flows (USBOR September

2009). The Final Finding of No Significant Impact (FONSI) for the interim flows was signed September 25, 2009. Under the proposed release schedule, interim Flow water releases of 350 cubic feet per second (cfs) from Friant Dam into the San Joaquin River began on October 1, 2009, and continued through February 2010 (SJRRP 2009). Interim Flow releases continued in Water Year 2011 ranging from 350 cfs up to 1660 cfs during the spring months.

U.S. Environmental Protection Agency (EPA). The EPA is responsible for developing and enforcing regulations that implement environmental laws enacted by Congress. EPA is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for issuing permits and for monitoring and enforcing compliance.

Arsenic is an example of a groundwater contaminant that is regulated by the EPA. Arsenic is a naturally occurring element and its presence can be traced back to geologic deposits. These natural deposits of arsenic can be found throughout the United States and are prevalent in New England and the Southwest. Groundwater that flows over these deposits may be contaminated with arsenic, which then makes its way into public and private drinking water wells. In 2001, the U.S. EPA lowered the existing 50 ppb standard to 10 ppb; all water systems must comply with this standard by January 2006. The California Department of Public Health (CDPH) is required to adopt a new arsenic standard that is equal to or more stringent than the U.S. EPA standard and set as close as economically feasible to the Public Health Goal (PHG). A PHG is the level of arsenic in drinking water that would not pose a significant health threat if consumed over a lifetime. Water purveyors must defer to US EPA standards until the CDPH finalizes its own standard. The PHG for arsenic was determined to be 4 ppt by the California EPA's Office of Environmental Health, however following a comprehensive cost-benefit analysis, the CDPH chose to adopt and comply with the federal standard for arsenic of 10 ppb (CDPH 2009).

California Department of Public Health A major component of the California Department of Public Health, Division of Drinking Water and Environmental Management is the Drinking Water Program (DWP) which regulates public water systems. Regulatory responsibilities include the enforcement of federal and state Safe Drinking Water Acts, the regulatory oversight of approximately 8,700 public water systems, the oversight of water recycling projects, issuance of water treatment permits, and certification of drinking water treatment and distribution operators. Other functions include supporting and promoting water conservation and water systems security, providing support for small water systems and for improving technical, managerial, and financial (TMF) capacity, and providing subsidized funding for water system improvements under the State Revolving Fund (SRF) and Proposition 50.

California Department of Water Resources. The California Department of Water Resources (DWR) is responsible for preparing and updating the California Water Plan, which is a policy document that guides the development and management of the State's water resources. The plan is updated every five years to reflect changes in resources and urban, agricultural, and environmental water demands. The plan was recently updated, and circulated for public review and comment in early 2009 and adopted in late 2009. The California Water Plan suggests ways of managing demand and augmenting supply to balance water supply with demand. One focus of the plan is on scientific strategies to reduce demand and improve delivery of agricultural water, thereby creating more efficient use of agricultural water (DWR 2009). Over the last thirty years in California there has been a trend toward more efficient agricultural water delivery (DWR 2009). In the early 1990s the Agricultural Water Suppliers Efficient Water Management Practices Act (AB3616) and the Federal Central Valley Project Improvement Act (CVPIA) established guidelines for improving agricultural water use efficiency. In 2008, the Agricultural Water Management Council (AWMC), which formed as a result of the AB3616 legislation, developed a Memorandum of Understanding (MOU) that included 79 agricultural water

supplier signatories, including the Merced Irrigation District and the San Luis Water District. The MOU aims to improve water use efficiency through various management practices, including increased management of water delivery systems, improved irrigation system hardware, and reduction in non-beneficial evapotranspiration (AWMC 2009). The AWMC tracks water management planning and implementation, and the MOU signatories voluntarily implement cost-effective management practice. The majority of the participating agencies had already prepared and submitted water management plans by fall 2009. The 2009 California Water Plan makes recommendations for achieving efficiency in agricultural water use. Recommendations on several related topics may result in new programs, policies, and regulations in the future (DWR 2009):

- Funding Strategies (e.g. the State should identify and establish priorities for grant programs, and cooperate with the agricultural community to fund research, development, demonstration, monitoring, and evaluation of projects that improve cost-effective agricultural water use)
- Implementation Strategies (e.g. DWR should work to develop legislative requirements for a uniform and comprehensive process for all California water suppliers; DWR should develop target benefits specific to different hydrologic regions)
- Data Measurement and Evaluation (e.g. DWR should create a statewide system of water use monitoring data available to all users; the State should expand water efficiency information, evaluation programs, and on-site technical assistance)
- Education and Training (e.g. Expand CIMIS [the California Irrigation Management Information System], mobile laboratory services, and other training programs)
- Dry Year Considerations (e.g. AWMC in cooperation with DWR should compile measures currently in use by growers and water suppliers to deal with shortages and develop a comprehensive Agricultural Drought guidebook for information and procedures for drought mitigation)

Existing Conditions

The largest use of water in Merced County (County) is agricultural irrigation, followed by municipal demands and habitat support. Supply sources include local groundwater, surface water and large-scale state and federally contracted water conveyances. A large portion of the agricultural water comes from outside the County including the Delta-Mendota Canal, the San Luis Canal, the California Aqueduct and the Merced and San Joaquin Rivers (Nolte 2009). Merced County sits within the 15,880 square mile San Joaquin River drainage basin where dams and reservoirs regulate and divert surface water for uses upstream and within the County. For additional information on the watershed, tributaries and groundwater basins see Water Resources Section 8.2. Merced County covers four groundwater basins Turlock, Merced and Chowchilla to the east and Delta-Mendota to the west of the San Joaquin River with groundwater flow generally towards the San Joaquin River alignment along the Central Valley (See Figure 2 and Table 7-2, *Draft Merced County General Plan Update – Qualitative Comparison of Water Supply and Demands in Merced County Technical Memorandum*). This document is available at: <http://www.co.merced.ca.us/index.aspx?NID=1170>.

TABLE 7-2
Merced County Groundwater Basins

Basin	Description	Annual Urban Extraction (afy)¹	Annual Agricultural Extraction (afy)
Turlock	Typical TDS range of 200-500 mg/L Unconfined, semi-confined, and confined	65,000	387,000
Merced	Typical TDS range of 200-400 mg/L Unconfined and confined within lower consolidated rocks	54,000	492,000
Chowchilla	Typical TDS range of 120-390 mg/L Increases in TDS significant near the San Joaquin River Unconfined to confined	6,000	249,000
Delta-Mendota	Typical TDS range of 700-1,000 mg/L Significant variations in water quality between the upper and lower zones Unconfined and confined	17,000	491,000
TOTAL		142,000	1,619,000

¹ afy= Acre-feet per year. Source: Table ES-1 in Nolte 2009; DWR, 2012.

A more extensive version of this table is also shown in Section 8.2 with the following Source: California Dept. of Water Resources Bulletin 118.

Groundwater overdraft is a recurring problem in certain County areas with water suppliers often combining surface water sources with groundwater to circumvent the problem. From 1980 to 2007, the Merced Groundwater Basin declined by a total of 720,000 acre-feet of storage and gained localized increases in hardness, iron, nitrate, and chloride. Modeling and analysis of the Turlock Groundwater Basin from 2000 to 2006 show a decrease in storage with an average outflow of 541,000 Acre-feet per year (afy) and only 519,000 acy of inflow and localized increases in hardness, nitrate, chloride, boron and DBCP (i.e. Dibromochloropropane, a soil fumigant used prior to 1979). The Chowchilla Groundwater Basin levels have declined an average of 40 feet from 1970 to 2000 with localized areas of high nitrate, hardness, iron and chloride. Trends with the Delta-Mendota Groundwater Basin levels are undetermined at this time, but saline conditions have been recorded within 10 feet of the surface and there are localized areas of high iron, fluoride, nitrate and boron (Nolte 2009). The Merced Irrigation District (MID) has implemented recharge and conservation projects and developed groundwater basin management plans promoting land use coordination, improved surface water deliveries and groundwater recharge to help alleviate the overdraft conditions (Nolte 2009).

Domestic water systems within Merced County are generally small isolated systems providing water to individual communities. Agencies providing domestic water service to people residing in the unincorporated areas of Merced County include community service districts, public utility districts, sanitary districts, and irrigation districts. In total there are thirteen larger public water systems (i.e. greater than 200 service connections) and 80 smaller public water systems in the County, Table 7-3 lists the larger systems and Table 7-4 summarizes some of the smaller municipal systems associated with the unincorporated areas.

TABLE 7-3 Merced County Large Public Water Systems (>200 service connections)	
Municipal Water Systems	Community Water Systems
Eastern Merced County (Merced and Chowchilla Groundwater Basins)	
<p>City of Atwater –Services approximately 26,800 residents via 11 groundwater wells and 3 storage tanks. Well depths range from 178 to 670 feet. No surface water contracts. The City of Atwater also treats and discharges roughly 4,500 afy of reclaimed municipal and industrial effluent for agricultural purposes.</p>	<p>Planada – The Planada Community Services District (Planada CSD) Provides domestic water to approximately 4,500 residents through 1,227 connections. 5 groundwater wells with depths ranging from 296 to 370 feet. Planada also discharges around 6,000 afy of treated effluent for agriculture.</p>
<p>City of Merced –Domestic water to approximately 74,000 residents including the unincorporated community of Celeste. 21 Groundwater wells and surface water deliveries from MID at a rate of 100 afy. Well depths range from 98 to 833 feet. The city utilizes approximately 8,700 afy of reclaimed wastewater to irrigate cropland and wetland areas.</p>	<p>Le Grand – Le Grand Community Services Group (LGCSG) provides potable water to approximately 1,800 connections in the unincorporated community. 3 groundwater wells with depths ranging from 340 to 416 feet. Le Grand also treats and discharges around 6,000 afy of treated effluent for agriculture.</p>
<p>City of Livingston –Domestic water to approximately 12,400 residents. 8 groundwater wells and 1 storage tank. Well depths range from 300 to 350 feet. No surface water contracts. Livingston also discharges around 6,000 afy of treated effluent for agriculture.</p>	<p>Meadowbrook (Franklin/Beachwood) – Unincorporated community receives water through privately held Meadowbrook Water Company. 4 groundwater wells with depths ranging from 100 to 358 feet.</p>
	<p>Winton – Winton Water and Sanitary District provides water to 2,982 connections. Winton also receives municipal water from the City of Atwater. 3 groundwater wells with depths ranging from 285 to 935 feet. Winton also discharges around 4,500 afy of treated reclaimed municipal and industrial effluent for agricultural irrigation.</p>
Western Merced County (Delta-Mendota Groundwater Basin)	
<p>City of Los Banos –Provides water to approximately 32,600 residents via 13 groundwater wells, and 100,000 gallon and 5.0 million gallon storage tanks. Well depths range from 180 to 310 feet. There are no current surface water contracts, however there is the potential to purchase water from the California Aqueduct through the State Water Project.</p>	<p>Santa Nella –The Santa Nella County Water District (SNCWD) treats water from the San Luis Water District to service its 500 connections to the unincorporated community. The SNCWD has one groundwater well that is used to blend with treated surface water and service commercial customers along State Route 33.</p>
<p>City of Dos Palos –Provides water to 4,500 residents via the State Water Project’s California Aqueduct.</p>	
<p>City of Gustine –Supplies approximately 5,400 residents via 4 groundwater wells and</p>	

<p>a 750,000 gallon storage tank. Well depths range from 200 to 250 feet. Irrigation water is supplied via the Central California Irrigation District (CCID) canal and associated conveyances.</p>	
<p>Northern Merced County (Turlock Groundwater Basin)</p>	
	<p>Delhi – The Delhi Community Water District (Delhi CWD) supplies approximately 8,000 residents in the unincorporated community of Delhi. Source water is 5 groundwater wells ranging in depth from 200 to 425 feet.</p>
	<p>Hilmar – The Hilmar County Water District (Hilmar CWD) services approximately 4,900 residents in the unincorporated community of Hilmar. Source water is supplied via 3 groundwater wells, a storage tank and pump station. Well depths range from 125 to 305 feet.</p>

Source: Nolte 2009.

The community of Winton receives water services from its own Winton Community Services District. The District, and the communities of Midway and South Dos Palos receive water services from the City of Dos Palos. The University of California Merced will receive water services from the City of Merced. In addition to public water suppliers, there are also private domestic water service providers. The community of Franklin is serviced by the Meadowbrook Water Company, which has four wells in operation (1990 Merced County General Plan). Detailed water supply information for private service providers is not included in this report. The County’s 1990 General Plan does not discuss domestic water service, and defers water supply, treatment, and distribution planning to local service providers. Thus, there is little coordination between the service capacities and capabilities of local domestic water service providers and increasing demands for service as a result of land use decisions of private project proponents and Merced County.

Most of the unincorporated areas outside of major communities are designated for agricultural use and receive their water supply either from individual groundwater wells or federal and state water projects. The paragraphs to follow describe in more detail the current state of domestic water infrastructure in the unincorporated communities of the county.

TABLE 7-4 Additional Merced County Water Supply Facilities	
Eastern Merced County	
Name	Description
Other Unincorporated Communities	Cressy, El Nido, Stevinson, and Tuttle utilize groundwater via private wells.
Western Merced County	
Midway	The Midway Community Services District (Midway CSD) services 186 customers in the unincorporated community via water from the City of Dos Palos.
North Dos Palos	The North Dos Palos Water District (NDPWD) services 41 connections in the vicinity of State Route 33 and Carmellia Avenue via water from the City of Dos Palos.
South Dos Palos	The South Dos Palos Water District (SDPWD) services roughly 220 connections with water from the City of Dos Palos.
Fox Hills	The San Luis Water District (SLWD) is slated to provide water from the Central Valley Project (CVP) for subsequent treatment to service approximately 402 approved dwelling units in the unincorporated community of Fox Hills.
Other Unincorporated Communities	Volta and Dos Palos “Y” are unincorporated communities that utilize groundwater through various private, industrial and low capacity wells.
Northern Merced County	
Ballico	The Ballico Community Services District (Ballico CSD) was reported to provide domestic water service to 50 dwellings in 1983.
Snelling	Community relies on low capacity individual groundwater wells.

Source: Nolte 2009

Delhi County Water District

The Delhi Community Services District (DCWD) provides domestic water service to the majority of residents in the unincorporated community of Delhi. Delhi residents that do not receive water service from DCWD rely on individual water wells. The community of Delhi had a year 2000 population of 8,022 persons and is located in northern Merced County along State Route 99.

Municipal water is supplied by five groundwater wells. Groundwater is chlorinated prior to distribution. There is a limited capacity in Delhi’s water facilities. There is adequate capacity in the existing water mains and wells to meet present demand, but the current system is not capable of supporting projected water supply demands. According to the Draft Environmental Impact Report for the Delhi Community Plan (June 2005), the DCWD produced an average of 1,608 acre-feet per year between 1999 and 2003. With new development in the community plan update area, water demands are estimated to increase to a total of 3,448 acre-feet per year. According to the 2009 Nolte report buildout will require the addition of two groundwater wells and a 1.0 million gallon storage tank to meet demand (Nolte 2009).

As land within the community plan area is developed, it will need to be annexed into DCWD to receive water services. Land designated as Agricultural Residential is not expected to annex into the DCWD service area and must rely on individual water wells. Agricultural areas within the community plan area obtain irrigation water from Turlock Irrigation District (TID).

Hilmar County Water District

The Hilmar County Water District (HCWD) provides domestic water service to residents in the unincorporated community of Hilmar. The community of Hilmar had a year 2000 population of 4,807 and is located in northern Merced County along State Route 165. Municipal water is supplied to the community of Hilmar by three groundwater wells. According to the 1990 Merced County General Plan, there are 1,400 connections with a total pumping capacity of 3.0 million gallons per day (mgd) and an average daily use of 0.4 mgd. The more recent Hilmar Community Plan reported 1,500 connections in 2007 with an additional 2,000 connections predicted (Nolte 2009).

Le Grand Community Services District

The Le Grand Community Services District (LGCSO) provides domestic water service to residents in the unincorporated community of Le Grand. The community of Le Grand had a year 2000 population of 1,760 and is located in eastern Merced County approximately 12 miles southeast of the city of Merced. Municipal water is supplied to the community of Le Grand by three groundwater wells, which are capable of producing 2 mgd. According to the 1990 Merced County General Plan, there is an average daily use of 0.96 mgd.

Planada Community Services District

The Planada Community Services District (Planada CSD) provides domestic water service to residents in the unincorporated community of Planada. The community of Planada had a year 2000 population of 4,369 and is located in eastern Merced County along State Route 140. Municipal water is supplied by five groundwater wells. Groundwater is chlorinated prior to conveyance through a pressurized system.

Santa Nella County Water District

The Santa Nella County Water District (SNCWD) provides domestic water service to residents in the unincorporated Merced County community of Santa Nella. The community of Santa Nella had a year 2000 population of 1,308 and is located in southwestern Merced County along Interstate 5.

The community of Santa Nella receives its surface water from San Luis, which is then treated by SNCWD at the San Luis Canal Water Treatment Plant (SLCWTP). The plant is designed for a maximum flow of 1.2 mgd with a peak capacity of 1.8 mgd. The SLCWTP consists of a raw water pump station, two treatment units, a filtered water pump station and storage tank, two backwash water reclamation basins, and two sludge drying lagoons. Processes used for treatment include chemical flocculation, sedimentation, filtration, and chlorination. The SNCWD also has one groundwater well used to service some commercial customers by blending with water from the SLCWTP. Facilities used to distribute treated water include a low-pressure water transmission pipeline, two surface water storage tanks, and a booster pump station.

According to the Santa Nella County Water District Municipal Service Review (March 2006), the SNCWD has a current service area of 2,466 acres and a proposed service area of 2,560 acres after reorganization of lands overlapping with other districts (San Luis Water District, New Del Puerto Water District, and Central California Irrigation District). The service area population is estimated at 1,200 with a total of 497

connections, distributed as follows: 24 commercial; 18 irrigation; 159 metered residential; and 296 unmetered residential. Average day water demand is projected to be 4.28 mgd at community plan build out with a maximum day demand of 9 mgd. To meet future water demand projections, the following water supply enhancement projects are being considered: firming of existing supplies through conjunctive use and water banking agreements, acquisition of Mercy Springs Water District supplies, purchases of supplemental supplies from willing sellers within the area, development of an additional municipal well and use of reclaimed wastewater.

San Luis Water District

The San Luis Water District (SLWD) will provide domestic water service to residents in the unincorporated Merced County community of Fox Hills. The community of Fox Hills is located in southwestern Merced County along Interstate 5.

The SLWD will own and operate a water treatment facility by a permit issued through DHS. Treated water from existing development will be piped into an existing storage reservoir with a current capacity of 1.0 million gallons (Draft Fox Hills Community Specific Plan Update, February 2006). The storage capacity will be increased to a total of 3.0 million gallons with the construction of a new reservoir to meet the needs of future development. Treated water from the storage reservoirs would be distributed through a booster pump station and pressurized system of pipes.

Federal contract allows the SLWD to receive water through the Central Valley Project (federally-operated water supply and distribution system). According to the Draft Fox Hills Community Specific Plan Update, the SLWD has issued “Will Serve” letters for 402 approved dwelling units. Build-out of the undeveloped part of the Fox Hills plan area will result in a total water demand of 1,594 acre-feet per year. The master developer will be responsible for designing, financing, and constructing the backbone of the water system while individual project developers will be responsible for local infrastructure within their project boundaries.

Merced Irrigation District

The Merced Irrigation District (MID) provides irrigation water to Eastern Merced County’s agricultural land. There are approximately 140,000 acres of farmland located within District boundaries of which over 110,000 acres are irrigated. Approximately 320,000 acre-feet of water per year is distributed through 790 miles of canals and pipelines. MID possesses three “pre-1914” direct diversion rights from the Merced River. The Exchequer Mining Right permits the diversion of up to 6,000 cfs from the river when available as inflow. Direct Diversion License #2685 and #6047 permit direct diversions from the Merced River up to a maximum of 1,500 cfs and 260 cfs, respectively. Under Storage License #11395, MID stores up to 516,000 acre-feet per year in Lake McClure.

The *Merced Water Supply Plan* (CH2M Hill 1995; updated 2001) provides a general plan for overall water system expansion and recommendations for managing the water supply for the study area. The Plan Update was prepared by the City of Merced and MID in conjunction with the University of California, Merced due to the occurrence of significant activities in the study area and a better understanding of water resources issues. The five goals identified in the Plan include:

- Manage groundwater resources;
- Provide a high-quality, reliable supply of water for cities;
- Protect and enhance the economic base;

- Protect MID's Merced River water rights; and
- Maintain consensus on a water supply plan.

In the Plan Update, water needs and planning scenarios are addressed through the year 2040. The study area is composed of 582,000 acres located in Eastern Merced County that closely reflects the extent of the Merced Groundwater Basin. Historical water data shows the use of surface water supplied by MID is decreasing while the pumping of groundwater for irrigation has been increasing. Several consequences can potentially occur if aquifer levels continue to decline including land subsidence, reduction of drought protection, imposition of regulatory control, higher energy costs, and reduction in agricultural production.

Numerous planning scenarios were developed in the Plan Update by identifying potential future conditions and the actions necessary to address those conditions and reach program goals. Common solutions were identified among the planning scenarios and developed into a base level of solutions for immediate response. The base level actions include intentional recharge site investigations, incentives and related system improvements, surface water conservation and automation, agricultural capacity improvements, urban water conservation, urban groundwater to surface water conversion, participation in water rights issues, and institutional program establishment. Other solutions are more costly and may not be required unless "triggers" occur. For example, future regulatory actions on Merced River may trigger the need for drought relief wells. As a next step, the formation of a committee is suggested to identify beneficiaries of the program implementation and to allocate costs accordingly.

Existing Water Demands

As stated earlier, agriculture demands the largest supply of water to Merced County, which is provided by various irrigation districts (see Table 7-5). Existing urban water demands for incorporated and unincorporated areas in Merced County based on available data are highlighted in Table 7-6 along with estimated future demands based on community urban development plans and an assumed buildout rate of 2,000 gpd per acre.

**TABLE 7-5
 Merced County Agricultural Water Demands**

Irrigation District	Area Served (acres)	Customers	Existing Water Demand (afy)	Comments
Ballico-Cortez Water District	---	---	---	District strictly formed to address declining groundwater levels and does not provide irrigation services.
Centinella Water District (CWD)	840	---	---	The CWD is located on the northern end of the San Luis Reservoir and receives Central Valley Project (CVP) water via the Delta-Mendota Canal under an interim contract with the US Bureau of Reclamation (USBR). The water is conveyed to landowners via privately held canals and pipelines. Land within district is designated as mitigation habitat
Central California Irrigation District	143,400	560	510,000	Covers Fresno and Stanislaus counties in addition to Merced
Del Puerto Water District	---	---	10,000	Reorganized in 1995 the Del Puerto Water District covers a 50-mile length strip of land on both sides of the Delta-Mendota Canal. Under a long-term contract with USBR is supplies CVP water via turnouts on the Delta Mendota Canal and privately held conveyance systems.
Eagle Field Water District	1,325	2	4,550	Receives irrigation water from the CVP via two turnouts on the Delta-Mendota Canal under an interim contract with the USBR. Groundwater wells are used to supplement CVP supply in dry years.
East Side Water District	---	---	---	Formed specifically to address declining groundwater levels, is not a service provider.
Grassland Water District	51,537	145	180,000	Distributes annual allotment from USBR
Laguna Water District	417	1	800	
Merced Irrigation District	163,812	2,223	305,000	Value for demand is based on average of min and max reported by MID. Supplies agricultural water via surface and groundwater sources. Owns up to 7,760 cfs of direct diversion rights on the Merced River and 516,000 afy of storage in Lake McClure.
Merquin County Water District	6,000	100	18,211	
Pacheco Water District	4,999	13	12,000	

San Luis Water District	66,449	605	90,000	38,287 of the 66,440 acres are currently irrigated.
Stevinson Water District	3,628	2	110-160	
Turlock Irrigation District (TID)	150,000	---	---	TID services clients in Stanislaus and Merced counties with majority in Stanislaus. Supplements with groundwater in dry years.
Turner Island Water District	7,520	4	21,000	

Source: Nolte 2009

**TABLE 7-6
Existing and Projected Urban Water Demands in Merced County**

City/Community	Existing Water Demands (afy)	Year Basis for Existing Demands	Projected Water Demands (afy)	Year Basis for Existing Demands
Eastern Merced County				
Atwater	10,650	2004	19,800	2025
Livingston	7,730	2006	19,160	2030
Merced	30,120	2005	55,680	2025
Franklin-Beachwood	---	---	1,974	Buildout
Le Grand	---	---	1,027	Buildout
Planada	---	---	1,232	Buildout
Winton	---	---	2,714	Buildout
Celeste	---	---	116	Buildout
Cressy	---	---	498	Buildout
El Nido	---	---	147	Buildout
Stevinson	---	---	165	Buildout
Tuttle	---	---	128	Buildout
Western Merced County				
Dos Palos	---	---	1,910	---
Gustine	1,370	2001	4,230	2020
Los Banos	8,402	2006	21,730	2030
Santa Nella	---	---	4,790	Buildout
Midway	---	---	1,566	Buildout
North Dos Palos	---	---	156	Buildout
South Dos Palos	---	---	907	Buildout
Volta	---	---	707	Buildout
Dos Palos Y	---	---	365	Buildout
Fox Hills	---	---	1,594	Buildout
Northern Merced County				
Delhi	1,840	2003	3,450	2025
Hillmar	1,905	2007	2,963	Buildout
Ballico	---	---	411	Buildout
Snelling	---	---	731	Buildout
Total Projected Demands			147,994	

Source: Nolte 2009

7.3 Wastewater Collection/Disposal

Introduction

The purpose of this section is to summarize existing information regarding wastewater collection systems, treatment, and disposal facilities in Merced County. This section provides an overview of current treatment capacities, flow history, treatment processes, reclamation policies, current number of connections to the system, and the general condition of the infrastructure. Sanitary sewer information is generally reported in terms of each individual district providing the service.

Key Terms

The following key terms used in this chapter are defined as follows:

ADWF. Average dry weather flow, or flow during dry months (June-August), with limited or no inflow and infiltration.

Backup. Wastewater that enters into basements and other low-lying areas during a moderate to intense rainfall event. Similar to overflow, backup is normally a result of excess stormwater and groundwater entering into the sanitary sewer or a blockage in the public or private sewer system.

Base Flow. The component of wastewater that originates from domestic users such as residential, commercial, and institutional discharges.

Cleanout. Outside access point on a property owner's service lateral that allows for cleaning in the event of a blockage.

Disinfection. A process following secondary or tertiary treatment that typically involves the use of chlorine or ultraviolet (UV) radiation to destroy bacteria and other pathogens.

Dry Weather Infiltration. Groundwater that enters into the sanitary sewer system during the driest period of the year when the groundwater table is lowest in elevation.

Effluent. Treated wastewater that is discharged from a wastewater treatment facility.

Excessive I/I. Measured inflow and infiltration within a sanitary sewer system that is considered to be more expensive to transport and treat at the municipality's wastewater treatment plant than to eliminate through rehabilitation.

Inflow. Surface stormwater that enters into the sanitary sewer through direct sources such as vented manhole covers, downspouts, area drains, and uncapped cleanouts.

Interceptor. Sanitary sewer interceptors are those lines that convey sewage from neighborhood to neighborhood in route to the wastewater treatment plant. Pipe diameters are generally larger than lines placed within residential developments.

I/I. An abbreviation for inflow and infiltration into a sanitary sewer system.

Lift Station. A pumping facility that conveys wastewater flow from an area that would not naturally drain to the wastewater treatment plant, or into the gravity sewer system for delivery and treatment.

Manhole (or Access Hole). Manholes are used at designated intervals in a sewer line as a means of access for inspection or cleaning.

Non-Excessive I/I. Measured inflow and infiltration within a sanitary sewer system that is considered more expensive to eliminate through rehabilitation than to transport and treat at the municipality's wastewater treatment facilities.

NPDES (National Pollutant Discharge Elimination System) Permit. The regulatory document that defines the discharge requirements, monitoring requirements, and operational requirements for a particular wastewater treatment facility or other discharger to a surface water.

PDWF. Peak dry weather flow or peak flow during dry months is determined by multiplying the ADWF by a diurnal daily peaking factor.

Primary Treatment. Treatment of wastewater prior to secondary treatment involving screening, settling, and removal of suspended solids.

PWWF. Peak wet weather flow is PDWF plus infiltration and inflow during wet weather.

Sanitary Sewer. Pipes, pump stations, manholes, and other facilities that convey untreated (raw) wastewater from various sources to wastewater treatment facilities.

Secondary Treatment. Treatment of wastewater that typically follows primary treatment and involves biological processes and settling tanks to remove organic material.

Service Line. Facilities owned and maintained by property owners that conveys waste from a structure to the public system.

Surcharge. A condition in which the wastewater flow rate in a sewer system exceeds the capacity of the sewer lines to the extent that raw sewage begins to rise within manholes.

Tertiary Treatment. Treatment of wastewater that follows secondary treatment and involves filtration or membrane processes to remove fine suspended and colloidal material, thus providing a more advanced level of treatment than secondary treatment alone.

Title 22. A section of the California Water Code that establishes water quality requirements for wastewater reclamation. As an example, Title 22 requires filtration of any reclaimed effluent used for full-body contact recreation or fresh food crop irrigation. Title 22 requires lesser levels of treatment for other uses of reclaimed effluent.

Wastewater. Sewage (either treated or untreated) from residential, commercial, industrial, and institutional sources.

Wastewater Collection System. The totality of the pipes, pump station, manholes, and other facilities that convey untreated (raw) wastewater from the various sources to a wastewater treatment facility.

WDR. Waste discharge requirements are issued by the Regional Water Quality Control Board (Regional Board) to govern wastewater discharges to land.

Wet-weather Infiltration. Peak infiltration that is measured 6 to 12 hours after a measured storm event, excluding base flow and dry weather infiltration.

WWTF. Abbreviation for wastewater treatment facility.

Regulatory Setting

Key organizations that regulate wastewater treatment and disposal in California include the United States EPA and the State Water Resources Control Board (SWRCB). These agencies are responsible for carrying out and enforcing environmental laws enacted by Congress. Local government agencies, including the Merced County Division of Environmental Health, are responsible for establishing and implementing specific design criteria related to individual sanitary sewer systems. Major regulatory policies pertaining to sanitary sewer management are summarized below.

- **U.S. Environmental Protection Agency (EPA).** The EPA Office of Wastewater Management (OWM) supports the Federal Water Pollution Control Act (Clean Water Act) by promoting effective and responsible water use, treatment, disposal and management, and by encouraging the protection and restoration of watersheds. The OWM is responsible for directing the National Pollutant Discharge Elimination System (NPDES) permit, pretreatment, and municipal bio-solids management (including beneficial use) programs under the Clean Water Act. The OWM is also home to the Clean Water State Revolving Fund, the largest water quality funding source, focused on funding wastewater treatment systems, non-point source projects, and estuary protection.
- **State Water Resources Control Board (SWRCB).** The SWRCB, in coordination with nine Regional Water Quality Control Boards (RWQCB), performs functions related to water quality, including issuance of wastewater discharge permits (NPDES and WDR) and other programs on stormwater runoff, and underground and above ground storage tanks.
- **Merced County Division of Environmental Health (DEH).** The DEH regulates the construction and operation of individual septic systems within Merced County.
- **Cortese-Knox-Hertzberg Governmental Reorganization Act of 2000.** The Cortese-Knox-Hertzberg Governmental Reorganization Act of 2000 requires California Local Agency Formation Commission's (LAFCo) to conduct municipal service reviews for specified public agencies under their jurisdiction. One aspect of municipal service review is to evaluate an agency's ability to provide public services within its ultimate service area. A municipal service review is required before an agency can update its sphere of influence. In 2007, Merced LAFCo retained the services of a consultant to conduct a municipal service review of the water and sewer providers in the County. The municipal services review included an assessment of infrastructure needs or deficiencies, growth and population projections, and opportunities for shared facilities. (EPS 2007).
- **Small Community Wastewater Grant Program.** The small community wastewater grant program (SCWG), funded by Propositions 40 and 50, provides grant assistance for the construction of publicly owned wastewater treatment and collection facilities. Grants are available for small communities

with financial hardships. Communities must comply with population restrictions (maximum population of 20,000 people) and annual median household income provisions (maximum of \$37,994) to qualify for funding under the SCWG Program.

- **Clean Water Act (CWA).** The CWA is the cornerstone of surface water quality protection in the United States. The statute employs a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff.

Section 303 of the CWA requires states to adopt water quality standards for all surface water of the United States. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric although narrative criteria based on biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards. The SWRCB and the RWQCBs are responsible for ensuring implementation and compliance with the provisions of the federal CWA.

- **Title 22 of California Code of Regulations.** Title 22 regulates the use of reclaimed wastewater. In most cases, only disinfected tertiary water may be used on food crops where the recycled water would come into contact with the edible portion of the crop. Disinfected secondary treatment may be used for food crops where the edible portion is produced above ground and will not come into contact with the secondary effluent. Lesser levels of treatment are required for other types of crops, such as orchards, vineyards, and fiber crops. Standards are also prescribed for the use of treated wastewater for irrigation of parks, playgrounds, landscaping and other non-agricultural irrigation. Regulation of reclaimed water is governed by the nine RWQCBs and DHS.

Existing Conditions

Most of the sanitary sewer systems within the unincorporated areas of Merced County serve individual small communities. Sanitary sewer service within the county is generally provided by special districts including community service districts, public utility districts, sanitary districts, and sewer maintenance districts. Some agencies provide sewer collection service only, and contract with surrounding agencies for wastewater treatment and disposal. Some of the unincorporated communities of Merced County lack sanitary sewer infrastructure, and are serviced by individual or community septic systems. These communities are listed below.

- Ballico
- Castle Airport
- Celeste
- Volta
- Cressy
- Dos Palos Y
- El Nido
- Stevinson
- Tuttle

The community of Winton receives sewer services from the City of Atwater and the communities of Midway and South Dos Palos receive sewer services from the City of Dos Palos. Most of the unincorporated areas

outside of major communities are designated for agricultural use and discharge their wastewater through septic tanks. For areas serviced by individual or community septic systems, property owners are generally responsible for maintenance and improvements.

The County's 1990 General Plan does not discuss sanitary sewer service, and defers wastewater transmission, treatment, and disposal planning to local service providers. Thus, there is little coordination between the service capacities and capabilities of local wastewater service providers and increasing demands for service as a result of land use decisions of private project proponents and Merced County. Under Merced LAFCo's 2007 municipal service review of water and wastewater facilities, potable water and wastewater systems were reported as adequate for current demand but limited in capacity for any future growth and in all cases requiring construction of additional facilities as part of any future development (EPS 2007).

Out of fourteen independent service districts in the County, eight provide potable water and sanitary sewer services, two provide sanitary services only and four provide only potable water services, The Districts vary widely in size and capacity ranging from 115 to 3,000 service connections (EPS, May 2007). The paragraphs to follow describe the current state of sewer infrastructure in the unincorporated communities of Merced County.

Delhi County Water District

In addition to domestic water service, the Delhi County Water District (DCWD) also provides sanitary sewer collection and treatment services to the majority of residents within its district. The DCWD owns and operates a wastewater treatment facility (WWTF) located southeast of the community along Highline Canal.

The DCWD wastewater collection system consists of gravity flow through seven trunk lines and six lift stations to convey wastewater to the community WWTF. The WWTF consists of: headworks; four fermentation pits; two advanced facultative ponds with floating aerators; two high rate ponds; two algae settling ponds; a maturation pond; and percolation ponds. An Advanced Integrated Wastewater Pond System (AIWPS) is used through a series of ponds. The first series of anaerobic ponds are Advanced Facultative Ponds which result in low sludge accumulation. Wastewater is then directed into a High Rate Pond which produces algae and uses oxygen to oxidize the waste. From the High Rate Pond, the wastewater is routed to an Algae Settling Pond. The waste algae removed from the Algae Settling Pond is used as a fertilizer or animal feed after further processing. As described by Waste Discharge Requirements Order No. 97-013 (RWQCB), the WWTF is permitted to treat 0.8 mgd although has a maximum capacity of 1.0 mgd (contingent on meeting waste discharge requirements). According to the Draft Environmental Impact Report for the Delhi Community Plan (June 2005), the WWTF currently operates at an average of 0.61 mgd. Acreage is available for the WWTF to expand its capacity to 1.5 mgd. In the future, a new or expanded WWTF will be needed to meet projected wastewater demands of 2.0 mgd.

As land within the community plan area is developed, it will need to be annexed into DCWD to receive wastewater services. Land designated as Agricultural Residential is not expected to annex into the DCWD service area and will rely on individual septic systems.

Franklin County Water District

The Franklin County Water District (FCWD) provides sanitary sewer collection and treatment services to residents in the unincorporated community of Franklin-Beachwood. The community of Franklin-Beachwood

had a year 2000 population of 4,110 persons and is located in northern Merced County along State Route 99. The FCWD owns and operates a WWTF located on the eastern side of the community.

The community WWTF consists of headworks with a bar screen, an aerated pond with two aerators, followed by eight evaporation/percolation ponds totaling 30 acres. The WWTF is operated in accordance with Waste Discharge Requirements Order No. 89-171 (RWQCB). Upon adoption, the Order limited the 30-day average daily flow to 0.4 mgd until the implementation of collection system improvements. The maximum flow restriction of 0.4 mgd was due to limitations from the size of the influent sewer line and pump station. Upon completion of the improvements, the Order limits the 30-day average daily flow to 0.6 mgd. A Notice of Violation dated February 2002 from the RWQCB (related to disposal of wastes and failure to complete self-monitoring reports) indicated wastewater flows had increased to an average of 0.43 mgd at the time of the inspection. The Order states that the evaporation/percolation ponds have a capacity to treat 0.6 mgd while the aeration ponds are designed to treat flows up to 0.8 mgd.

Hilmar County Water District

In addition to domestic water service, the Hilmar County Water District (HCWD) also provides sanitary sewer collection and treatment services to the community. The HCWD owns and operates a WWTF located southeast of the community of Hilmar.

The WWTF began operation in the summer of 2003 and is operated in accordance with Waste Discharge Requirements Order No. 99-077 (RWQCB). The 60-acre WWTF uses an Advanced Integrated Wastewater Pond System (AIWPS) consisting of: headworks; four fermentation pits; two advanced facultative ponds with aerators; two high rate ponds; two algae settling ponds; a maturation pond; and four percolation ponds. The Order sets a maximum monthly average daily flow of 0.55 mgd which will increase to 1.0 mgd in the future when additional land is acquired for enlargement of the maturation and percolation ponds. A Notice of Violation dated December 2001 from the RWQCB (related to exceeding discharge flow limits) indicated wastewater flows to be approximately 0.43 mgd at the time of the inspection.

Le Grand Community Services District

In addition to domestic water service, the Le Grand Community Services District (LGCSD) also provides sanitary sewer collection and treatment services to the community. The LGCSD owns and operates a WWTF located southwest of the community of Le Grand.

The expanded WWTF is operated in accordance with Waste Discharge Requirements Order No. 97-053 (RWQCB). The WWTF consists of headworks with a mechanically cleaned bar screen and screenings press, two partially mixed aerated lagoons with surface aerators, and one stabilization pond. Disposal is to two evaporation/percolation ponds and a 37-acre reuse area of fiber, fodder, and seed crops. Sludge removed from the ponds is also applied to the reuse area. According to the Order adopted by the RWQCB the capacity of the WWTF is 0.35 mgd. The stabilization pond was designed in a manner that will allow a future increase in capacity to 0.50 mgd. A Notice of Violation dated December 2001 from the RWQCB (related to self-monitoring report requirements) indicated wastewater flows to be 0.15 mgd at the time of the inspection.

Midway Community Services District

Established in 1967 to provide potable water and sewage disposal services to the community of Midway. Conveys raw wastewater for treatment to the City of Dos Palos under a Joint Powers Authority (JPA) between the City of Dos Palos and the South Dos Palos County Water District (EPS May 2007).

Planada Community Services District

In addition to domestic water service, the Planada Community Services District (Planada CSD) also provides sanitary sewer collection and treatment services to the community. The Planada CSD owns and operates a WWTF located to the southwest of the community.

The WWTF is operated in accordance with Waste Discharge Requirements Order No. R5-5005-0009 (RWQCB). The treatment system consists of: a metering manhole; an influent pump station; a grinder to shred solids in raw sewage; an influent distribution box; three aerated lagoons; three stabilization ponds; six intermittent sand filters; six pressure filter pods; a chlorination manhole; a chlorine contact pipe; and an effluent pump station. Treated effluent is discharged to Miles Creek, a tributary to the San Joaquin River. According to the Order, the average daily flow rate is 0.36 mgd and the maximum daily flow rate is 1.07 mgd (based on 2000/2001 data). The design monthly daily average flow rate for the WWTF is 0.53 mgd.

Santa Nella County Water District

In addition to domestic water service, the Santa Nella County Water District (SNCWD) also provides sanitary sewer collection and treatment services to the community. The SNCWD owns and operates a WWTF located on the north side of the San Luis Wasteway on the eastern side of the community.

The community WWTF is operated in accordance with Waste Discharge Requirements Order No. 88-104 (RWQCB). The WWTF consists of an aerated stabilization pond, two combined facultative pond/effluent storage reservoirs, and a 90-acre pasture irrigation area for disposal of treated effluent. Reclaimed water pipelines are to be installed in the future and are expected to deliver approximately 1,500 acre-feet per year of recycled water to offset potable water demand. The community WWTF currently operates at an average of 0.30 mgd with a total capacity of 0.40 mgd according to the Santa Nella Community Plan Municipal Service Review (March 2006). A new WWTF is also planned with initial designs for a 2.5 mgd average day flow and 6.25 mgd peak flow. The existing WWTF does not have opportunities for expansion and would be abandoned after construction of the new WWTF.

Snelling Wastewater Treatment Facility

The Snelling Community Services District (Snelling CSD) provides sanitary sewer collection and treatment services to residents in the unincorporated community of Snelling. The Snelling Community Services District owns and operates a WWTF located west of the community.

The WWTF is operated in accordance with Waste Discharge Requirements Order No. 85-155 (RWQCB). The WWTF consists of a lift station (two lift pumps), two aeration ponds in series, a chlorine contact chamber, a storage pond, an emergency overflow pond, and a six-acre reclamation area. Effluent is disposed by spray irrigation to the six-acre reclamation area owned by Snelling CSD. According to the Order, the design capacity of the WWTF is 0.10 mgd. A Facilities Inspection Report dated September 2001 from the RWQCB indicated effluent flows at the spray field to be between 0.01 and 0.067 mgd.

San Luis Water District

The San Luis Water District (SLWD) is planned to provide sanitary sewer collection and treatment services to the community of Fox Hills. According to the Draft Fox Hills Community Specific Plan Update (February 2006), a temporary prefabricated wastewater treatment plant is being installed to handle wastewater treatment flows for existing development.

Approximately 0.10 mgd of wastewater is generated by the existing golf course clubhouse/restaurant and the 402 existing adult residential units. When build-out conditions are reached for the remainder of the planning area, an additional 0.86 mgd of wastewater will be generated. The planned, permanent WWTF will be designed to a capacity of 1.0 mgd with tertiary treatment and disinfection. Wastewater will be conveyed to the WWTF through a system of lift stations and gravity flow pipelines. The master developer will be responsible for designing, financing, and constructing the backbone wastewater collection system and reclaimed water system while individual project developers will be responsible for local infrastructure within their project boundaries.

Recycled water from the WWTF will be used for irrigation on about 90 acres of land within the existing development area including the existing golf course, the executive 9-hole course, and on parks and trails. A total of 1,122 acre-feet of reclaimed water would be generated per year at build-out conditions. About 600 acre-feet of recycled water would be used for irrigation as listed above while about 512 acre-feet per year would need to be disposed of or used outside the plan area of Fox Hills. Distribution of reclaimed water would be through purple pipes (as required through Title 22, California Code of Regulations). During wet weather, excess recycled water would be pumped from the WWTF to a storage facility for use at a later time. The use of recycled water would help the community meet water demands by reducing the need for potable water for irrigation.

South Dos Palos Water District

Under a Joint Powers Authority, the South Dos Palos Water District and the Midway Community Services District convey raw wastewater for treatment to the City of Dos Palos (Economic & Planning Systems, (EPS) May 2007).

Winton Water and Sanitary District

A treatment facility feasibility study was proposed for the Castle Airport/Winton Area by Merced County in 2007. The feasibility study was prompted by an implementation plan proposed by the Merced County Department of Commerce Aviation and Economic Development. The implementation plan is designed to fully utilize the resources of the former Castle Air Force Base (now designated as the Castle Airport). The recommended alternative in the feasibility study is a 3.0 mgd tertiary treatment plant to serve the 1600 acre Castle Airport and approximately 800 acres within the unincorporated area of the Winton Water and Sanitary District (WWSD). The treatment facility would discharge treated effluent into the Casad Lateral Canal in the summer with effluent applied to on-site percolation ponds in the winter. Currently the WWSD discharges raw wastewater to the City of Atwater for treatment and disposal.

7.4 Storm Drainage/Flood Control

Introduction

The purpose of this section is to summarize existing information regarding drainage facilities in Merced County, specifically identifying communities that do not maintain a network of underground pipelines and pumping stations or instead rely on surface drainage to convey storm water offsite. Merced County is the lead agency in providing storm drain infrastructure within the unincorporated areas of the county with the exception of the community of Hilmar (Hilmar County Water District) which provides and maintains its own storm drainage facilities.

Key Terms

The following key terms used in this chapter are defined as follows:

APWA. American Public Works Association.

Acre-Foot (acre-ft). The volume of water required to cover one acre of land (43,560 square feet) to a depth of one foot. One acre-foot is equal to 325,851 gallons or 1,233 cubic meters. This term is usually used to describe the volume of stormwater detention or retention basins and reservoirs.

Basin. A hydrologic unit defined as a part of the surface of the earth covered by a drainage system consisting of a surface stream or body of impounded surface water plus all tributaries.

Best Management Practices (BMPs). Activities or structural improvements that help reduce the quantity and improve the quality of stormwater runoff. BMPs include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage.

Boom. A floating device used to contain oil on a body of water.

Catch Basin. An entryway to the storm drain system, usually located at street corners.

Channel Bank. The sloping side of a drainage or other channel.

Channel Capacity. The flow rate that the drainage channel will carry when accounting for required freeboard and environmental or legal considerations.

Culvert. A short, closed (covered) conduit or pipe that passes stormwater runoff under an embankment, usually a roadway.

CWA. Clean Water Act.

Detention. A stormwater system that delays the downstream progress of stormwater runoff in a controlled manner. This is typically accomplished using temporary storage areas and a metered outlet device. (As opposed to a less common retention pond).

Drainage. The control and removal of excess rainfall runoff or groundwater by the use of surface or subsurface features or drains.

Drainage Channel. An open channel such as a swale, constructed channel, or natural drainage course that may convey, store and treat runoff.

Erosion. When land is diminished or worn away due to wind, water, or glacial ice. Often the eroded debris (silt or sediment) becomes a pollutant via stormwater runoff. Erosion occurs naturally, but can be intensified by land clearing activities such as farming, development, road building, and timber harvesting.

Exceedance Probability. The probability that a precipitation or runoff event of a specified size will be equaled or exceeded in any one year.

Federal Emergency Management Agency (FEMA). The federal agency that regulates floodplains and manages the nation's flood insurance program.

Flood. A temporary rise in flow or stage of any watercourse or stormwater conveyance system that results in stormwater runoff exceeding its normal flow boundaries and inundating adjacent, normally dry areas.

Flood Control. The specific regulations and practices that reduce or prevent the damage caused by stormwater runoff.

Floodplain. Any land area susceptible to inundation by stormwater from any source. FEMA defines the floodplain to be the area inundated by the 100-year flood.

Floodplain Management. The implementation of policies and programs to protect floodplains and maintain their flood control function.

Freeboard. The vertical distance between the maximum design water surface of a channel and the top bank provided to account for differences between predicted and actual water surface elevations and/or to provide an allowance for protection.

Frequency. How often an event will occur expressed by the return period or exceedance probability.

General Permit. A permit issued under the NPDES program to cover a certain class or category of stormwater discharges. These permits reduce the administrative burden of permitting stormwater discharges.

Hydrograph. A numeric or graphical representation of variation over time in stage (depth) or flow rate of water.

Infiltration. The penetration of water through the ground surface into subsurface soil or the penetration of water from the soil into sewer or other pipes through defective joints, connections, or manhole wells.

Levee. A dike or embankment constructed to confine flow to a stream channel and to provide protection to adjacent land. A levee designed to provide 100-year flood protection must meet FEMA standards.

Level of Protection. The amount of protection that a drainage or flood control measure provides.

Low Impact Development. Development that incorporates a combination of drainage design features and pollution reduction measures to reduce development impacts on hydrology (peak runoff flow rates) and water quality.

Non-Point Source (NPS) Pollutants. Pollutants from many diffuse sources. Rainfall or snowmelt moving over and through the ground causes NPS pollution. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing the pollutants into lakes, rivers, wetlands, coastal waters, and even underground sources of drinking water.

NPDES. “National Pollutant Discharge Elimination System” – the name of the surface water quality program authorized by Congress as part of the 1987 Clean Water Act. This is EPA’s program to control the discharge of pollutants to waters of the United States.

Oil and Grease Traps. Devices that collect oil and grease, removing these contaminants from water flows.

Oil Sheen. A thin, glistening layer of oil on the surface of water.

Oil/Water Separator. A device installed (usually at the entrance to a drain) which removes oil and grease from water entering the drain.

One Hundred Year (100-year) Flood. The flood event that has a one percent (1%) chance of occurring in any given year.

One Hundred Year (100-year) Runoff. The storm runoff that has a one percent (1%) chance of occurring in any given year.

Outfall. The point where wastewater or drainage discharges from a sewer pipe, ditch, or other conveyance to a receiving body of water.

Point Source Pollutant. Pollutants from a single, identifiable source such as a factory, refinery, or place of business.

Pollutant Loading. The total quantity of pollutants in stormwater runoff. TDML (Total Daily Maximum Loading) is the limiting of pollutant loading into a body of water, such as a lake or river.

Rational Method. A method of predicting peak runoff rates. The Rational Method is based on a runoff coefficient, predicted rainfall intensity, and drainage shed area.

Recharge. Re-supplying of water to the aquifer. Recharge generally comes from snowmelt and stormwater runoff.

Retention. A process that halts the downstream progress of stormwater runoff. This is typically accomplished using total containment involving the creation of storage areas that use infiltration devices, such as dry wells, to dispose of stored stormwater via percolation over a specified period of time. (As opposed to a more common Detention Pond).

Return Period. The long-term average number of years between occurrences of an event being equaled or exceeded.

Runoff. Drainage or flood discharge that leaves an area as surface flow or as pipeline flow.

Stormwater. Precipitation that accumulates in natural and/or constructed storage and stormwater systems during and immediately following a storm event.

Stormwater Facilities. Systems such as watercourses, constructed channels, storm drains, culverts, and detention/retention facilities that are used for conveyance and/or storage of stormwater runoff.

Stormwater Management. Functions associated with planning, designing, constructing, maintaining, financing, and regulating the facilities (both constructed and natural) that collect, store, control, and/or convey stormwater.

Storm Water Management Plan (SWMP). A document submitted to the Regional Water Quality Control Board. The SWMP describes how the City will reduce the discharge of pollutants in stormwater to the maximum extent practical and effectively limit non-storm water discharges into the City's storm drain system.

Stormwater System. The entire assemblage of stormwater facilities located within a watershed.

Sub-basin or Sub-shed. An area within the watershed that can be analyzed independently and that contributes a component of total watershed runoff.

Surface Water. Water that remains on the surface of the ground, including rivers, lakes, reservoirs, streams, wetlands, impoundments, seas, and estuaries.

Swale. A low laying or depressed, at least seasonally wet stretch of land. Often lined with grass (grassy swale) and used as a conveyance for stormwater.

Ten Year (10-year) Runoff. The storm runoff that has a ten (10 percent) chance of occurring in any given year.

Total Maximum Daily Load (TMDL). A quantitative assessment of the total pollutant load that can be discharged from all sources each day while still meeting water quality objectives.

Toxic Hot Spot. A designation of a body of water that does not meet water quality standards and that will require an urban stormwater cleanup program and special monitoring.

Urban Runoff. Stormwater from urban areas that tends to contain heavy concentrations of pollutants from vehicles and industry.

Watercourse. A lake, stream, creek, channel, stormwater conveyance system, or other topographic feature, over which stormwater flows at least periodically.

Watershed. That geographical area which drains to a specified point on a water course, usually a confluence of streams or rivers (also known as a drainage area, catchment, or river basin).

Wetlands. Land with wet, spongy soil, where the water table is at or above the land surface for at least part of the year. Wetlands are characterized by a prevalence of vegetation that is adapted for life in saturated soil conditions. Examples include swamps, bogs, fens, marshes, and estuaries.

Regulatory Setting

Key organizations that regulate the stormwater industry in California include the EPA and SWRCB. These agencies are responsible for carrying out and enforcing environmental laws enacted by Congress. The need to protect the environment has resulted in a number of laws and subsequent regulations and programs. Local government agencies are responsible for establishing and implementing specific design criteria related to storm drain systems. Various federal and state programs related to the control of pollutants in stormwater and floodplain management are also summarized below.

- **Clean Water Act.** In 1972, the CWA was amended to provide that the discharge of pollutants to water of the United States from any point source is unlawful unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the CWA added Section 402(p), which establishes a framework for regulating municipal and industrial stormwater discharges, including discharges associated with construction activities, under the NPDES program.
- **U.S. Environmental Protection Agency (EPA).** In 1990, EPA published final regulations that establish stormwater permit application requirements. The regulations, also known as Phase I of the NPDES program, provided that discharges of stormwater to waters of the United States from construction projects that encompass five or more acres of soil disturbance are effectively prohibited unless the discharge complies with a NPDES permit. Phase II of the NPDES program expanded the requirements by requiring operators of small MS4s in urbanized areas and small construction sites to be covered under a NPDES permit, and to implement programs and practices to control polluted stormwater runoff. The Phase II Small MS4 General Permit is undergoing modification and renewal with public review and comment in September 2011.
- **State Water Resources Control Board (SWRCB).** In California, the NPDES stormwater permitting program is administered by the SWRCB through its nine RWQCBs. The SWRCB has established a construction General Permit that can be applied to most construction activities in the State. Construction permittees may choose to obtain individual NPDES permits instead of obtaining coverage under the General Permit, but this can be an expensive and complicated process, and its use is generally limited to very large construction projects that discharge to critical receiving waters. In California, owners of construction projects that will disturb more than one acre may obtain NPDES general permit coverage by submitting Permit Registration Documents (PRDs) including a Notice of Intent (NOI), a Stormwater Pollution Prevention Plan (SWPPP) and fees to be covered under the recently adopted SWRCB Order No. 2009-0009-DWQ (NPDES No. CAS000002). The new California general permit now requires a risk level determination based on site and receiving water characteristics, a range of monitoring, sampling and discharge requirements based on defined risk level and post construction runoff reduction requirements that go into effect September 2012.
- **Merced County Drainage Design Standards.** The storm water drainage system for any proposed development within the County of Merced must be designed in accordance with the Merced County Department of Public Works Storm Drainage Design Manual. The Storm Drainage Design Manual requires that drainage collection and transmission infrastructure be designed to pass the 5-year, 24-hour storm. In addition, County standards require that increased run-off due to new development be metered to discharge at a rate not to exceed that occurring prior to development from a 2-year storm,

unless the flow is first constrained in a basin. When the latter occurs, the maximum rate of discharge is limited to that necessary to empty the basin within 48 hours.

- **Merced Storm Water Group Storm Water Management Program (SWMP).** The Merced Storm Water Group, a coalition of Merced County, Merced Irrigation District and the cities of Atwater and Merced, developed the SWMP in 2007 to meet the Phase II MS4 stormwater discharge requirements in accordance with the CWA and comply with General Permit Number CAS000004, Water Quality Order No. 2003-0005-DWQ (Stantec 2007). The document includes storm water guidelines for Merced County in public education and outreach, control of construction site storm water runoff and post construction storm water management for new developments.
- **Federal Emergency Management Act (FEMA).** FEMA is the federal agency that oversees floodplains and manages the nation's flood insurance program (NFIP) adopted under the National Flood Insurance Act of 1968. FEMA's regulations govern the delineation of floodplains and establish requirements for floodplain management. FEMA prepares Flood Insurance Rate Maps (FIRM) that indicate the regulatory floodplain to assist communities such as Merced County with land use and floodplain management decisions in order to meet the requirements of the national flood insurance program. FIRMS for Merced County were recently updated under the Map Modernization Program and became effective on December 2, 2008 (FEMA 2008).

Existing Conditions

In most unincorporated communities of Merced County, developers are required to provide their own storm drainage systems on site. Once constructed, the County maintains the storm drainage systems. New subdivisions within the Merced Irrigation District (MID) service area often use MID canals for the discharge of stormwater, although this is not always the case. Improvements to MID canals are required as stormwater discharges increase and must be funded by the benefiting developers of new subdivisions.

To prevent flooding in Merced County, stormwater management and floodplain management is enforced. For example, Merced County requires that the runoff from a 10-year, 24-hour storm be retained and either disposed on-site via percolation into the soil or released at controlled flow rates into an existing drainage channel.

Flood Prone Areas

Flooding is a normal occurrence in the Central Valley because it is a natural drainage basin for thousands of acres of Sierra and Diablo foothill and mountain lands. In Merced County, the floodplain of the San Joaquin and Merced Rivers and their tributaries encompass nearly one half of the Valley floor. According to the 1990 Merced County General Plan, approximately 380,010 acres of land within Merced County are subject to 100-year floods. FEMA determines areas subjects to flood hazards and delineates the boundaries of the 100-year floodplain based on hydrology, topography, and modeling of flow during predicted rainstorms. For additional discussion of flood hazards in the county, including FEMA flood hazard maps, see Section 10.3, Flood Hazards of this report.

The County Flood Damage Prevention Ordinance contains specific requirements for development in various flood prone areas. In general, development should be limited and discouraged in flood prone areas. However, where existing development and urban land use designations are located in a flood plain, there are two general methods to minimize hazards to life and property: raise structures above base flood levels (used

primarily for residential dwellings) or flood-proof structures though secure footings (used primarily for commercial structures).

7.5 Solid and Hazardous Waste

Introduction

This section describes the existing solid waste and hazardous waste disposal practices within the unincorporated portions of Merced County. Solid and hazardous waste handling operations are critical to the health and safety of county residents, and are an important consideration for developers, decision makers, and the public, relative to land use decisions.

Key Terms

The following terms are used in the section to describe the solid and hazardous waste:

Solid Waste. Non-hazardous solid discarded items from households and light industry. Solid waste includes primarily waste paper and food organic waste. Other common waste items are plastic, cloth, metal cans and yard waste.

Household Hazardous Waste. Items that are discarded at specially designated facilities and not in solid waste facilities. These items included paints, cleaning chemicals, solvents, fluorescent light bulbs, non-commercial pesticides, insecticides and motor oil

Electronic “E” Waste. Items that include computers, computer monitors, TVs, printers and electronic parts which are excluded from solid waste landfills.

Hazardous Waste. Discarded items from industrial or agricultural processes that would be designated hazardous due to the concentration and chemical content.

Industrial Waste. Solid or liquid material that is discarded from industrial facilities.

Waste Generation Rates. The amount solid waste generated. These rates are used to assess the annual anticipated landfill volume used.

Regulatory Setting

Solid Waste Regulations

In accordance with the California Code of Regulation (CCR) Title 27 Sections 21600 through 21900, solid and hazardous waste transfer and disposal facilities in Merced County are regulated jointly by the California Regional Water Quality Control Board, Central Valley Region (RWQCB) and the California Integrated Waste Management Board (CIWMB). Compost facilities are also jointly Regulated Under CCR Title 14, Sections 17850 to 17869. Permit requests and Reports of Waste Discharge and Reports and Disposal Site Information are submitted to the RWQCB and CIWMB, respectively, and are used by the two agencies to review, permit, and monitor these facilities. Both the RWQCB and CIWMB regulate facilities individually and through local enforcement agencies staffed by Merced County employees. In Merced County, the local enforcement agency is primarily the County Health Department, Division of Environmental Health (DEH) The Merced

County Public Works and the Solid Waste JPA assist in supporting the County solid waste landfill diversion goals and operate the solid waste landfills within the county.

Merced County Codes, Title 9.04 and 9.08 of the General Health and Safety Ordinance and Title 18.32 and 18.44 of the Zoning Ordinance are used to regulate these facilities on a local level. DEH's role in the county-wide solid waste management program is to participate with other concerned agencies in the development and continuous updating of the County's Solid Waste Management Plan (SWMP), to enforce solid waste laws, to investigate closed and abandoned landfills, and to investigate citizen complaints regarding solid waste.

Hazardous Waste Regulations

The DEH is also the lead agency (Certified Unified Program Agency - CUPA) for the enforcement of State Hazardous Waste Control Laws and regulations. California Health and Safety Code Section 25404.4 requires that the Secretary for the California Environmental Protection Agency (Cal/EPA) to periodically review the ability of each CUPA to carry out the requirements of the chapter. The required process is defined in Title 27 of the California Code of Regulations, Article 8, Section 15330. The goal of a CUPA County Program is to be effective in implementing all of the Unified Program elements (as defined below), and is continually improving to meet the intent of the law: coordination, consolidation, and consistency of all Unified Program elements. Each CUPA is assessed every fall by a team made up of senior staff from each state agency with Unified program responsibilities, Cal/EPA, Office of Emergency Services (OES), DTSC, and SWRCB. The assessment uses a spectrum of performance measures and criteria and results in a schedule of evaluations for the next year.

Existing Conditions

Solid Waste Hauling and Transfer Stations

Merced County does not operate solid or hazardous waste hauling operations. No transfer stations exist in the county; drop boxes and curbside collection are the primary mode of collection in the county. Two primary haulers, Gilton Disposal Services (GDS) and Winton Disposal (a subsidiary of Waste Management, Inc. (WMI)), provide waste hauling for residential and light industrial customers in the unincorporated areas of Merced County.

WMI collects the northeast franchise areas one through five, and the southern franchise areas six and seven are collected by GDS. Figure 7-1 provides a depiction of the franchise areas. Three additional haulers are permitted to place drop boxes anywhere in the unincorporated area of the county. All of these operations are permitted and inspected by the County Public Works, required by Merced Code Title 9.12. Inspections are completed on an as-needed basis. Over 12 additional private drop-box haulers and incorporated municipal collection operations collect and haul waste in incorporated areas.

Solid Waste Landfills

Within Merced County, there are two active solid waste disposal-landfill facilities owned by Merced County and operated by the Merced County Association of Governments (MCAG) Regional Waste Management Authority (MCRWMA): the Highway 59 Disposal site; and the Billy Wright Landfill (BWL). The MCRWMA is a Joint Powers Authority between the County of Merced, and the Cities of Merced, Dos Palos, Gustine, Los Banos, Atwater and Livingston. The MCRWMA was formed in 1972 and amended in 2000 in accordance with Government Code §6500. A second JPA amendment is to be finalized in the fall 2006.

The Highway 59 Facility, located six miles north of Merced, serves the cities of Merced, Atwater and Livingston, and the unincorporated communities in Eastern Merced County. The BWL primarily serves the cities of Dos Palos, Gustine, and Los Banos, and the unincorporated communities of western Merced County. The permit status of the active County facilities is set forth in Table 7-2. The Merced County Department of Public Works Solid Waste Division (SWD) is under contract from the MCRWMA to operate these two permitted, active solid waste landfill facilities that include limited composting, and other resource recovery activities. The Division of Environmental Health operates a Household Hazardous Waste Collection Facility at the Highway 59 Landfill that collects waste oil, batteries, household pesticides, antifreeze, e-wastes and other household hazardous waste.

**TABLE 7-7
CIWMB SWIS Landfill Sites**

Number	Name	Activity	Regulatory Status	Operational Status
24-AA-0001	Highway 59 Disposal Site	Solid Waste Landfill	Permitted	Active
24-AA-0002	Billy Wright Disposal Site	Solid Waste Landfill	Permitted	Active
24-AA-0007	City Of Los Banos Disposal Site	Solid Waste Disposal Site	Not Currently Regulated	Closed
24-AA-0008	Calaveras Materilas Inc. Western Stone DS	Inert Waste Disposal Site	Exempt	Closed
24-AA-0009	Bert Crane Landfill	Solid Waste Disposal Site	Pre-regulations	Closed
24-AA-0010	Merced City Municipal Dump	Solid Waste Disposal Site	Pre-regulations	Closed
24-AA-0011	El Nido Composting Facility- Synagro West	Composting Facility (Sludge)	Permitted	Active
24-AA-0017	Foster Farms Manure Storage Facility	Composting Operation (Ag)	Notification	Active
24-AA-0018	Atlas Materials Inc. - White Crane Ranch	Composting Facility (Green Waste)	Permitted	Active
24-AA-0019	Stone Family El Nido Composting Facility	Composting Operation (Ag)	Notification	Active
24-AA-0020	Highway 59 Compost Facility	Composting Facility (Green Waste)	Permitted	Active
24-AA-0021	Billy Grissom Fertilizer	Composting Operation (Ag)	Notification	Active
24-AA-0023	Valley Fresh Foods Inc.	Composting Operation (Ag)	Notification	Active
24-AA-0024	Kenneth Stone & Family Spreading Service	Composting Operation (Ag)	Notification	Active
24-AA-0028	A&D Transport	Composting Operation (Ag)	Notification	Active
24-AA-0029	Billy Wright Composting Facility	Composting Facility (Green Waste)	Permitted	Active
24-AA-0030	Highway 59 Research Composting Op.	Composting Operation (Research)	Notification	Active
24-AA-0031	Nakashima Farms Composting #1	Composting Operation (Ag)	Notification	Active
24-AA-0032	Nakashima Farm Composting #2	Composting Operation (Ag)	Notification	Active
24-CR-0001	Shaffer Road LF #1	Solid Waste Disposal Site	Pre-regulations	Closed
24-CR-0002	Shaffer Road LF #2	Solid Waste Disposal Site	Pre-regulations	Closed
24-CR-0003	Shaffer Road LF #3	Solid Waste Disposal Site	Pre-regulations	Closed
24-CR-0004	Snelling Disposal Site	Solid Waste Disposal Site	Pre-regulations	Closed

24-CR-0005	Stevinson Disposal Site	Solid Waste Disposal Site	Pre-regulations	Closed
24-CR-0006	East Avenue Disposal Site	Solid Waste Disposal Site	Pre-regulations	Closed
24-CR-0007	El Nido Disposal Site	Solid Waste Disposal Site	Pre-regulations	Closed
24-CR-0008	Gustine City Disposal Site	Solid Waste Disposal Site	Pre-regulations	Closed
24-CR-0009	Gustine Ingomar Disposal Site	Solid Waste Disposal Site	Pre-regulations	Closed
24-CR-0010	Hilmar Disposal Site	Solid Waste Disposal Site	Pre-regulations	Closed
24-CR-0011	Le Grand Disposal Site	Solid Waste Disposal Site	Pre-regulations	Closed
24-CR-0012	Livingston City Disposal Site	Solid Waste Disposal Site	Pre-regulations	Closed
24-CR-0013	Los Banos County Disposal Site	Solid Waste Disposal Site	Pre-regulations	Closed
24-CR-0014	Planada Disposal Site	Solid Waste Disposal Site	Pre-regulations	Closed
24-CR-0016	Los Banos Bottle Dump	Solid Waste Disposal Site	Not Currently Regulated	Clean Closed
24-CR-0022	Castle Vista Landfill A	Solid Waste Disposal Site	Not Currently Regulated	Clean Closed
24-CR-0023	Castle Vista Landfill B	Solid Waste Disposal Site	Not Currently Regulated	Clean Closed
	Castle AFB #1	Solid Waste Disposal Site	Not Currently Regulated	Clean Closed
	Castle AFB #2	Solid Waste Disposal Site	Not Currently Regulated	Clean Closed
	Castle AFB #3	Solid Waste Disposal Site	Not Currently Regulated	Clean Closed
	Castle AFB #4	Solid Waste Disposal Site	Not Currently Regulated	Closed
	Castle AFB #5	Solid Waste Disposal Site	Not Currently Regulated	Closed

Note:

1) Status - A "tiered permit" is a type of solid waste facilities permit obtained pursuant to procedures set forth by Titles 14 and 27. A tiered permit (notification) is a solid waste facilities operated under other than a full permit with reduced application and permit processing requirements (i.e., - Notification – is for a typical agricultural land application site that was not required to comply with CEQA.)

Source: Solid Waste Information System, California Integrated Waste Board, 2012

Compost and Recycling Programs

Municipal or privately operated recycling centers, material recovery or transfer facilities are used to control and reduce the waste stream going to landfills. Per the CIWMB web site details, there are several County unincorporated and incorporated city/countywide programs as follows: recycling (8 programs), source reduction (6 programs), green waste/composting (7 programs) and over 18 certified used oil centers. The facilities are used to reduce the volume of waste disposed at landfills. Electronic waste, household-hazardous waste, oil, and grease prohibited from landfills are stored at the two designated areas at the landfill and hauled to respective recycling or disposal sites outside the county.

The permitted landfills, green waste and agricultural waste compost facilities are detailed on Table 7-2. Compost and oil recycling/drop off locations are depicted on Figure 7-2. The household hazardous waste transfer program is detailed below.

Solid Waste Generation, Diversion, and Landfill Capacity

As set forth in the 2000 countywide profile compiled by the CIWMB, Merced County annually buries over 206,467 tons of solid waste while meeting a diversion rate of 25 to 49 percent. At existing and proposed disposal rates, the existing capacity of the Highway 59 Landfill is to the year 2030 with a remaining volume of three million cubic yards; and the existing capacity of the BWL facility is to the year 2008. However in the case of the BWL facility, an approved five-acre expansion planned for November 2011 is expected to extend the life of the landfill an additional 20 years (Pride 2011).

Table 7-2 lists landfill sites within Merced County as described by the Solid Waste Information System (SWIS), which is maintained by the CIWMB. The active sites shown in the table are depicted on Figure 7-2.

Hazardous Waste And CUPA Programs

Hazardous Waste Landfills. There are no hazardous waste transfer, storage and disposal facilities in Merced County.

Hazardous Materials Program. A goal of the CUPA and Hazardous Materials Programs is to assure that all hazardous materials used by local industries and businesses are properly handled and stored. The following are major program elements of the hazardous material program:

- Proposition 65 Reporting
- Business Plans for Hazardous Material Storage
- Emergency Response

Hazardous Waste Program. Another goal of the CUPA program is to assure that hazardous waste generated by local industries and businesses are properly handled, stored and disposed of to protect the public, and the environment. The following are major program elements of the hazardous waste program:

- To identify all generators of hazardous waste in Merced County
- To inspect all generators for the proper handling, storage, use, and disposal of hazardous waste.
- To create an inspection program for the routine inspection of all hazardous waste generators.
- To educate all generators in the proper handling, storage, use, and disposal of hazardous waste.
- To enforce all applicable laws and regulations to ensure that compliance is achieved.

Household Hazardous Waste. Merced County also provides a receiving site for Household Hazardous Waste (HHW) disposal. The HHW facility is located at 6049 N. Highway 59, the Highway 59 Landfill site. Household Hazardous Waste which includes: Car Batteries, Latex Paints, Used Oil and Oil filters, Antifreeze, Medically Prescribe Hypodermic Needles, Pesticides, Herbicides, Fungicides, Paints and Thinners and Pool Chemicals. Ammunitions, explosives, radioactive materials, medical waste or compressed gas cylinders are not included. Included in this Electronic waste, household-hazardous waste, oil and grease prohibited from landfills are stored temporarily and hauled to respective recycling or disposal sites outside the county. Each year the local communities in Merced County collect household hazardous waste. This is a free service for all residents of Merced County.

The maximum amount of wastes accepted per vehicle at the annual event is:

- 15 gallons of liquid HHW OR
- 125 pounds of solid HHW OR
- 20 gallons of used motor oil OR
- 3 car batteries

It is illegal to transport more than the listed amounts. No business wastes are accepted at the one-day events. Businesses that generate less than 220 pounds, 100 kilograms, or 27 gallons of hazardous waste in one month, qualify as a Small Quantity Generator (SQG). SQG businesses may dispose of their hazardous materials at the Highway 59 facility free of charge. To qualify as a SQG, businesses:

- Must have an EPA Identification Number;
- Must submit Form 1358 to DTSC (form to www.dtsc.ca.gov);
- Must not generate more than 27 gallons of waste per month, no single container greater than 5 gallons; and,
- Farm chemicals, radioactive waste, biohazardous waste or compressed gas cylinders are not accepted.

7.6 Utilities

Introduction

This section contains existing available information on the level of utilities provided in Merced County, focusing on natural gas, electric services, and communication systems. Utilities are important service providers that support the expansion of the region's economic base, serve available developable land, and maintain/increase infrastructure capacity.

Key Terms

Electricity. A natural phenomenon, either through lightening or the attraction and repulsion of protons and electrons to create friction, that forms an electric current or power.

Watt. An electrical unit of power equal to the rate of energy transfer produced in a circuit by one volt acting through a resistance of 1 ohm, a unit of measurement of resistance.

Kilowatthours (kWh). A unit of measurement for electricity equal to one thousand watt hours.

Megawatthours (MWh). A unit of measurement for electricity equal to one thousand kilowattwatt hours or one million watt hours.

Gigawatthours (GWh). A unit of measurement for electricity equal to one thousand megawattwatt hours or one billion watt hours.

Power Plants. Sources for generating electricity.

Generators. Entities that own, operate, and maintain generation assets to supply energy and ancillary services to the competitive market.

Transmission and Distribution Lines. Distribution networks for electricity and natural gas.

Cellular Telephone. A mobile telephone operated through a cellular radio network.

Digital Subscriber Line (DSL). Internet technology that uses existing 2-wire copper telephone wiring to deliver high-speed data services at speeds greater than basic internet dial-up.

Easement. A limited right to make use of a property owned by another; for example, a right of way across the property.

Internet. A network that links computer networks all over the world by satellite and telephone, connecting users with service networks such as e-mail and the World Wide Web.

Regulatory Setting

The Federal Energy Regulatory Commission (FERC) is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil. FERC also reviews proposals to build liquefied natural gas (LNG) terminals and interstate natural gas pipelines, as well as licenses hydropower projects. The Energy Policy Act of 2005 gave FERC additional responsibilities, including: promoting the development of a strong energy infrastructure; open access transmission tariff reform; and preventing market manipulation.

The California Public Utilities Commission (CPUC) is a State agency created by constitutional amendment to regulate privately owned telecommunications, electric, natural gas, water, railroad, rail transit, passenger transportation, and in-state moving companies. The CPUC is responsible for assuring California utility customers have safe, reliable utility services at reasonable rates while protecting utility customers from fraud. The CPUC regulates the planning and approval for the physical construction of electric generation, transmission, or distribution facilities; and local distribution pipelines of natural gas (CPUC Decision 95-08-038).

Power is delivered from generating facilities over the utilities' transmission lines and distribution wires. The Independent System Operator (ISO), whose governing board is appointed by the Governor, manages most of California's transmission system. The ISO's primary function is to balance electricity supply with demand and maintain adequate reserves to meet the needs of California homes and businesses. FERC regulates the ISO. The California Electricity Oversight Board monitors and reports on the activities of the ISO.

The CPUC regulatory program is grounded in the philosophy that cost-effective energy efficiency is the state's first line of defense against power shortages, and this strategy is supported through \$2 billion in energy

efficiency funding for 2006-2008. The CPUC's Renewables Portfolio Standard program requires an annual increase in renewable generation by the utilities equivalent to at least 1 percent of sales, with an aggregate goal of 20 percent by 2010.

Title 20, Public Utilities and Energy, contains the regulations related to power plant siting certification. Title 24, California Building Standards, contains the energy efficiency standards related to residential and nonresidential buildings. Title 24 standards are based, in part, on a State mandate to reduce California's energy demand.

The CPUC regulates rates and charges for basic telecommunication services, such as how much you pay for the ability to make and receive calls.

Existing Conditions

Electric services are provided by Pacific Gas and Electric (PG&E), Merced Irrigation District (MID), and Turlock Irrigation District (TID). PG&E provides all the natural gas services within Merced County.

Telecommunication services are primarily provided by SBC/AT&T, with a wide range of other service providers in the market for wireless and long distance services.

Electrical Services

The supply of power for Merced County no longer involves simply plugging into the existing electrical transmission network and extending the natural gas lines. Implementation of new development within Merced County will involve decisions as to which electrical supplier and alternative energy sources to use; the extent of dependency upon electrical and natural gas; and the degree that energy demand can be reduced through efficient building designs, site planning and other conservation measures.

The California Legislatures restructured California's electricity market in 1996 through AB 1890, opening the generation of electricity to competition (transmission and distribution systems remained a regulated monopoly). The utilities are now required to purchase all their electricity needs from the wholesale market. The Legislature expected competitive energy markets to drive down the cost of electricity. AB 1890 gives customers of investor-owned utilities, such as Pacific Gas and Electric (PG&E), the ability to choose who provides their electric energy just as they can choose long distance telephone companies.

Electric Service Providers (ESP), created as a result of the 1996 restructuring of the California electrical industry, are non-utility retail service providers. ESPs, such as brokers and aggregators, buy all of their power from generators and distributors, and sell the electricity to consumers. ESPs provide service only through existing transmission lines.

California has experienced a number of problems since the electricity industry was restructured. California's population has increased 13 percent between 1990 and 2000, and many power plants were sold to privately owned, out-of-state energy companies. California has been producing only part of its electricity needs (78 percent in 2005), the balance of which must be purchased from other western states. At the same time, the Pacific Northwest has experienced dramatic growth in energy demand, which has reduced the amount of energy available from that area. Because most power plants in California are powered by natural gas, the cost of making electricity has increased dramatically as the price of natural gas has increased.

The demand for electricity has grown faster than expected during the 1990s in California due to a number of factors, including:

- Rapid growth in the state's economy;
- Spreading of computer technology;
- Lack of new power plants since the mid 1980s; and
- Lack of widespread conservation due to relatively low electricity costs to consumers.

The CPUC and the California Energy Commission created an Energy Action Plan in 2003 (updated in 2005) to ensure that adequate, reliable, and reasonably-priced electrical power and natural gas supplies, including prudent reserves, are achieved and provided through policies, strategies, and actions that are cost-effective and environmentally sound for California's consumers and taxpayers. Energy agencies in California intend to achieve this goal through six specific means:

- Meet California's energy growth needs while optimizing energy conservation and resource efficiency and reducing per capita electricity demand;
- Ensure reliable, affordable, and high quality power supply for all who need it in all regions of the state by building sufficient new generation;
- Accelerate the State's goal for renewable resource generation to 2010;
- Upgrade and expand the electricity transmission and distribution infrastructure and reduce the time before needed facilities are brought on line (currently it takes at least 7 years to develop a new transmission facility);
- Promote customer and utility owned distributed generation; and
- Ensure a reliable supply of reasonably priced natural gas.

Generation Facilities

Merced County has at least eight power plants generating electricity, with their output varying by year (California Energy Commission, 2006). The California Energy Commission keeps a database of power plant generating greater than 0.1 MW. In 2002, eight plants reported generating 344,222 MWh within Merced County; only four of those plants reported their annual power generation of 269,021 MWh in 2005 (Table 7.6-1). The other four plants did not report in 2005, but may still be operational but operating at less than 0.1 MW. Three other power plants (two hydroelectric and one oil and gas) are listed in the California Energy Commission's power plant database, but have not reported generating power: United Hydro-Wolf, United Hydro #2, and San Joaquin Power Co (oil and gas). Currently (2006), no power plants are being planned for or are under construction in Merced County.

TABLE 7-8
Merced County Power Plants

Plant Name	Owner	Fuel Type	Net MWh reported	
			In 2002	In 2005
JR Wood incorporated	Dole Packaged Frozen Foods	Landfill Gas	332	-
JRW Associates LP	Ridgewood Power Management LLC	-	27,898	16,417
Reta (Canal Creek)	Merced Irrigation District	Hydro	1,317	-
Fairfield	Merced Irrigation District	Hydro	1,966	-
Merced Falls	PG&E	Hydro	10,206	13,879
Parker	Merced Irrigation District	Hydro	6,844	-
O'Neil	US Bureau of Reclamation	Hydro	6,667	28
WR Gianelli	CA Dept of Water Resources	Hydro	288,992	238,697
TOTAL Electricity Generated			344,222	269,021

Source: California Energy Commission 2006

Pacific Gas & Electric

PG&E delivers approximately 81,923 GWh of electricity to its 13 million customers throughout the 70,000-square-mile service area in Northern and Central California. In 2006, PG&E delivered 533 GWh to 68,292 residential accounts and 504 GWh to 8,154 commercial and industrial accounts in Merced County.

PG&E is the primary (though not the sole) supplier of electricity on Merced County. PG&E is also responsible for maintenance of most of the transmission and distribution systems in the county.

Merced Irrigation District

The Merced Irrigation District (MID), under the authority of the California Water Code, has the authority to operate as an electric utility. During the past 70 years, MID has provided wholesale power to PG&E. As a result of AB 1890, MID is now able to sell power at the retail level. MID distributes electricity through the Atwater/Merced transmission loop. Historically, MID has served the area generally from the city of Livingston to the city of Atwater. MID has expanded its power delivery area in recent years, and in 2000 it completed the extension of its network to the city of Merced with a series of underground lines. Electrical service, including maintenance, at the Castle Airport site is provided by MID. PG&E, however, is responsible for the maintenance of the MID delivery system.

MID serves over 3,000 customers and has signed contracts for over 9,000 new residential units. MID also sells electricity generated at its New Exchequer Hydro-electric power plant (located on the Merced River in Mariposa County), under a long-term contract expiring in 2014, to PG&E for its customers in Northern California.

MID has constructed a substation near Livingston that distributes power purchased from third parties. This substation is tied into a distribution system that serves Livingston area customers, and is the starting point for

the transmission system that serves the Atwater and Merced areas. MID has a long-term, fixed-price agreement with the Modesto Irrigation District that provides most of the power distributed. MID also has an agreement with the Turlock Irrigation District (TID) that allows them access to power on a short-term basis.

Electricity from MID is generated by the McSwain and New Exchequer Dams in Mariposa County. Powerhouses at both dams generate an average total of 332,992,155 kilowatt hours (kwh) of electricity per year. MID is pursuing a larger electricity generating role Merced County.

Turlock Irrigation District

The Turlock Irrigation District (TID) has been providing power to a growing customer base since 1923. Currently (2006), they provide power to 88,000 homes, farms, businesses, industries, and municipal accounts. TID's service area covers 662 square miles in Merced, Stanislaus, Mariposa, and Tuolumne counties. The utility provides service to the communities of Delhi and Hilmar in Merced County.

Telecommunications

The telecommunications and digital industries have experienced phenomenal growth in the past decade, both in the number of services provided and dependency upon those services. Services include basic phone services, long distance services, internet services, and wireless communication services (e.g. cellular phone service, enhanced specialized mobile radio (ESMR), personal communication services (PCS) and paging systems).

Because telecommunications require above ground facilities, policies will be required to ensure that these facilities blend into the natural and built environment to the extent possible.

Antennas

Telecommunication services require antenna structures which are typically accompanied by equipment buildings or boxes. Cellular and ESMR equipment buildings are generally less than 12-feet by 24-feet. PCS equipment facilities are self-contained weatherproof cabinets about the size of a vending machine. Some providers propose an integration of antennas with light poles, while others attach their facilities to buildings or other structures. Building mounted antennas are unnoticeable if they are hidden from view on the roof or painted to match the color and texture of the building. Lattice towers are the least common type of antenna, range from 60 to 200 feet in height, and generally accommodate a variety of uses. They are found where great height is needed and where multiple microwave antennas are required. Although they can accommodate many users they pose serious visual impacts.

SBC

SBC, which recently acquired AT&T, is a company well-equipped to provide all the telecommunications needs, including local phone service, long distance telephone service and high-speed Internet. SBC is the largest telecommunications corporation in the United States and is uniquely positioned to lead the industry in service and quality.

SBC provides local telephone services to Merced County. County residents in most urbanized areas are eligible for Digital Subscriber Line (DSL) high speed internet access. Cable television services are provided by Comcast who is in the process of renovating local facilities to offer high speed internet access through the cable system and other products. Wireless internet access is also available in some areas with services

provided by a variety of local providers including Clearwire and Valley Tech Logic. Internet access in rural areas is generally limited to dial-up service or satellite connections.

Natural Gas

PG&E supplies natural gas to Merced County and owns an 8-inch gas transmission line that runs parallel to State Route 99 through Merced County. In 2006, PG&E delivered 25,346,044 therms to 63,515 residential accounts and 77,883,331 therms to 3,375 commercial and industrial accounts in Merced County. In the past, electric supply problems became gas supply problems as well. This resulted from the increased demand of a growing economy, colder than normal winters, and the state's population growth. California produced only 15 percent of its natural gas needs in 2005 and must import the rest.

7.7 Law Enforcement

Introduction

This section describes the general characteristics of law enforcement facilities and services provided within Merced County by the Sheriff's Office and the divisions for which it is responsible.

Key Terms

There are no key terms for this section.

Regulatory Setting

Section 24000 of the Government Code mandates the Office of Sheriff be established in each county in California. Merced County Ordinance #1479 consolidates the office of Coroner with Sheriff pursuant to Government Code Section 24304 and 27491. Legislation AB 2928 enacted in 2002 authorized the Board of Supervisors to consolidate the Merced County Marshal with the Merced County Sheriff-Coroner. The Board of Supervisors authorized the consolidation of the following into the Sheriff Department: warrant/civil staff during Fiscal Year 2001/02; and, Court Security during Fiscal Year 2002/03.

Existing Conditions

The Sheriff's Department has the primary responsibility for protecting the life and property of the citizens living in the unincorporated areas of Merced County as well as providing other law enforcement services as needed. The Sheriff's Department is also responsible for investigation of all criminal activities occurring in unincorporated areas and apprehension of individuals who have violated the law. The Board of Supervisors consolidated the Office of Coroner with the Office of Sheriff In October 1993. In 2005, the Court Security Division became a separate department under the Sheriff.

The Sheriff's Department provides officers and services to a variety of County departments and facilities. The Sheriff provides service to educational facilities in the county through individual contracts with school districts. These school districts include Weaver, Winton, Franklin, Planada Elementary, LeGrand Elementary and High School, and Delhi Schools. In 2005/2006, the north station of the Sheriff was moved from Hilmar to Delhi and named the Charles F. Bludworth Sub-Station, situated at the Delhi Educational Park. In 2004, the Sheriff also established a partnership agreement with Merced College providing a law enforcement manager to supervise the campus's Security and Safety Division. In 2004, an officer was placed at the

Human Services Agency (HAS) to assist in law enforcement matters that may occur in the Safety and Support Division of HSA. Both contracts will continue in 2006/2007.

Overview of Law Enforcement Services

The coverage area of Merced County Sheriff's Department (MCSD) encompasses the entire unincorporated area of the county. The department maintains stations in Merced, Los Banos, and Hilmar and operates the John Lotorraca Correctional Center in El Nido. MCSD also maintains a total of six Sheriff's Community Law Enforcement Office stations throughout the county, in Merced, Planada, Santa Nella, Delhi, Hilmar, and Winton (MCSD 2004).

The MCSD employs approximately 101 total sworn officers and maintains 22 patrol vehicles and four additional unmarked non-patrol vehicles. Specialized members of the Sheriff's Department also serve on additional units including a narcotics task force, an investigation unit, a major-crimes unit, and a federal drug trafficking task force. Merced County also has a 34-member Special Weapons and Tactics Unit (SWAT) and a four-member Sheriff's Tactical and Reconnaissance Team (STAR Team) (Bradford 2012).

Currently, MCSD maintains a ratio of approximately one officer per 1,000 residents in unincorporated areas. The average response time is below 10 minutes on emergency calls, increasing to approximately 30 minutes on non-emergency calls.

The Sheriff's Department, in cooperation with the California Department of Forestry and Fire Protection (CDF), also provides disaster planning and implementation of emergency evacuation plans. The response time provided in the event of an emergency is dependent on the location of the nearest deputy at the time of the call. There are currently (2006) no plans to expand existing police facilities or services. Capital facilities and personnel for the department are funded through tax revenues collected by the County.

The California Highway Patrol (CHP) office handles all traffic enforcement and automobile accident investigations for the unincorporated parts of Merced County. The office is fully staffed and currently employs 37 patrol officers, four sergeants, one lieutenant, one captain, three clerks, one clerical supervisor, 22 dispatchers, and two dispatch supervisors. The Merced CHP coverage area is patrolled by six to 10 officers throughout the day. Officers are assigned to coverage areas based a call volume ratio determined by the CHP Office of Research and Planning in Sacramento. The CHP responds to an average of 150 accidents per month within Merced County.

Department Financing, Grant-Funded Programs, and Training

The Sheriff's efforts to obtain grant funding have enabled an increased law enforcement presence in the unincorporated areas of the county. Methamphetamine continues to be a prevalent problem, with approximately 70 percent of all felony drug charges in Merced County involving the use, sale, transportation, and/or manufacture of methamphetamine.

Grant funding has enabled the Sheriff to add additional positions; purchase law enforcement equipment and technology; and educate county school children and the public on the dangers of drugs. In late 2003, the Sheriff entered into a collaborative agreement with the City of Merced and the Merced City Chief of Police to participate in the Federal Methamphetamine Grant programs administered by the city. Since 2004, the Sheriff's Department has received federal funding from the following programs:

- The Federal DEA Domestic Cannabis Grant Program;
- The National Drug Control Policy (Drug Trafficking Intradiction) Program;
- The Edward Byrne Memorial Justice Assistance Grant Program;
- Homeland Security Funding;
- Department of Justice Bulletproof Vest Funding Program; and
- The 2005 Federal Methamphetamine Grant Program.

During 2005/2006, the Sheriff with Trust Funding sponsored six Reserve Officers to receive training at the Basic POST Academy. This action will assist with future staffing levels in a highly competitive market by investing in individuals interested in pursuing a career in County law enforcement.

Financing the operation of correctional facilities continues to be a major funding issue for most counties. In recent years, tougher attitudes and policies on crime combined with mandatory sentencing laws have left counties struggling to keep up with the space and programs needed to keep the justice system in balance. During 2005/2006 inmate population was at its highest level in Merced County history. Population caps for the jails often require the release of inmates after serving only a portion of their sentence. However, this alternative is becoming less feasible as the population of inmates awaiting trial becomes a greater percentage of the total.

The “Three Strikes” initiative has resulted in a growing number of persons arrested for felonies electing to be tried rather than to plead. From FY 2003/04 to FY 2004/05, 32 additional beds were added to the John Latorraca Center. Electronic monitoring devices and other work furlough programs help mitigate the impact of high jail populations. The Sheriff will request expansion of the John Latorraca Correctional Center in 2007/2008 for an additional 100 beds, with a total of 300 additional beds by 2009/2010. Since the adoption of the “Three Strikes” initiative the County’s inmate population has grown significantly, resulting in a need for increased staffing and facilities to ensure officer safety and inmate welfare.

Based on the population growth in the unincorporated areas of Merced County, including many new housing developments, the Sheriff in fiscal year 2006/07 requested additional staffing to meet public demand for service. The Sheriff’s request included the addition of two Sheriff Senior Sergeant/Sheriff Sergeant; five Deputy Sheriff I/II; and two Sheriff Dispatcher I/II positions.

Court Security Services

The Superior Court of California County of Merced contracts with the Sheriff to provide Deputy Sheriff support for the courts. Additional full time positions are requested based on the staffing and security requirements of the new court house, the continued current court rooms that will remain after the opening of the new court house, juvenile hall, and Westside court room and the security needs of the courts, court employees, public and inmates.

Correctional Services

The Corrections Division of the Merced County Sheriff’s Department is responsible for the care and welfare of adult inmates lawfully committed to the custody of the Sheriff. Operations of these facilities are governed by the California Penal Code, the California Government Code, and by other applicable State and Federal laws. Two facilities currently (2012) operate to meet this responsibility: the Main Jail located at 700 W. 22nd Street, and the John Latorraca Correctional Center (formerly known of as Sandy Mush Adult Correctional Facility) located on Sandy Mush Road west of El Nido.

Video arraignment from the John Latorraca Center to the Los Banos Court system was added during FY 2002/03. During FY 2003/04, additional video arraignment systems were added to the main Merced Courts for connection to both the Main Jail and the John Latorraca Center. This change has provided more efficient and effective safety measures for staff and inmates by reducing the need to transport inmates to the court facilities.

The kitchen facilities at the adult correctional facility are out-dated and must be replaced. Due to the fact that the John Latorraca Adult Facility serves three County Departments at four different sites, freezer storage must be increased. An additional Non-Perishable Inventory Warehouse must be added to store inmate issued items such as clothing, freeing up other areas of the jail thereby decreasing associated safety issues.

The Sheriff's Department purchased an additional Correctional Transport Van during FY 2005/2006. Two more of these vehicles are needed. The transportation unit of corrections not only transports inmates between jails and court rooms, this staff also transports within the State to State and Federal prisons, and provides inmate extradition services throughout the country. Transport vehicles must be available and road worthy to ensure officer and inmate safety. Finally, a non-law enforcement vehicle must be replaced due to age and mileage. This vehicle is driven by the Commander and must be available for 24/7 emergency response.

Services and supplies must be increased due to the unknown variable of inmate growth. During 2005/2006, budget line items such as food, medical, household expense, and maintenance equipment were reduced below than the 2004/2005 levels, even though the Corrections Department services three County Departments. Based on existing interdepartmental agreements, the Sheriff must have the tools to perform and provide adequate issue to all inmates, staff and services.

In 2005/2006, in collaboration from Merced College, the Sheriff and the college established a Correctional Core Academy. This academy will provide in-county mandated training for new correctional officers.

Inmate Welfare Services

The Sheriff maintains and operates an inmate supply store. Profits from the sales of goods and services to inmates for items such as candy bars, cigarettes, and telephones calls are maintained in a separate fund in accordance with Section 4025 of the Penal Code. The Inmate Welfare Trust Fund is used for the benefit, education, and welfare of the inmates, and to maintain the facility and personnel.

In addition, the Inmate Welfare Division supports two Correctional Officer I/II positions. One position offers canine patrol and contraband detection to the jails and the Work Furlough program, the other position supervises the Work In Lieu program and inmates from the Main Jail. A request has been made to add one Farming Utility Vehicle used by the inmates in preservation of the grounds at both the John Latorraca and Iris Garrett correctional facilities.

County Coroner

The Coroner, acting under the authority of the California Penal Code, Government Code, and Health and Safety Code, provides a preliminary inquiry into any death reported. This hearing is recorded and if circumstances warrant, a full investigation into the cause of death is done.

During FY 2003/04, Riggs Ambulance Service donated an ambulance and in FY 2004/2005 the Health Department transferred an ambulance to the Sheriff Coroner Division. The Sheriff Coroner has had both

ambulances converted to assist with the pickup of the deceased and to provide support to other law enforcement agencies as needed. This action has saved on the costs of contractual pickup services.

The number of coroner cases continues to increase with over 859 cases in 2005 due to the growth of population in Merced County. Efforts to increase revenues have not been able to keep up with rising operational costs, specifically autopsy services.

7.8 Fire Protection

Introduction

The purpose of this section is to summarize the existing information regarding Merced County fire protection services. The following evaluation describes the Merced County Fire Department, the concepts of mutual and automatic aid as they relate to facility planning, the County's land use categories as they apply to the Fire Department's Level of Service goals, and a summary of the Department's existing and future needs.

Key Terms

Automatic Aid. The process whereby the closest piece of emergency apparatus is dispatched to a call for assistance, regardless of jurisdiction.

Flashover. The point at which all the contents of an enclosed space reach combustion temperature, and ignite simultaneously.

Insurance Services Office Ratings. Public protection classifications are designated by the Insurance Services Office (ISO). The ISO bases its classifications on a number of factors, including fire department location, equipment, staffing, water supply, and communications abilities. Ratings range from 1 to 10, with 1 being the best possible fire protection, and 10 being the worst.

Mutual Aid. The provision of resources (personnel, apparatus, and equipment) to a requesting jurisdiction already engaged in emergency operations which have exhausted or will shortly exhaust local resources.

Regulatory Setting

Section 10.301(c) of the Merced County Fire Code requires developers to provide approved water supplies capable of delivering adequate fire flow for fire protection to all premises upon which buildings or portions of buildings are constructed.

Existing Conditions

Merced County has consistently outpaced much of the State in population growth rate. Population increases translate directly to work load increases for the fire stations in the areas of the growth. The areas in the county where the Fire Department's workload show the greatest increase correspond with the areas with the greatest population increases. As development occurs in the county, increases in service demands are placed on the Fire Department.

The Merced County Fire Department (MCFD) provides a range of programs aimed at protecting the lives and property of the people of Merced County from the adverse effects of fires, sudden medical emergencies, exposure to hazardous materials, or other dangerous conditions.

These programs include comprehensive fire protection planning, fire prevention education, fire law and code enforcement, and fire suppression and recovery. MCFD provides first responder level Emergency Medical Services, including rescue and extrication, as well as control and mitigation of hazardous materials emergency incidents. MCFD personnel and equipment are also available to provide mutual aid fire/rescue/EMS services to cooperating agencies and participate in the State-wide fire and rescue mutual aid system. In addition, assistance and support are also provided for other non-fire emergencies such as floods, earthquakes, and other disasters.

County Fire Protection

The Merced County Fire Department (MCFD) is a full service fire department providing emergency services to all unincorporated areas of the county through a network of fire stations, personnel, and equipment. This network is comprised of 20 stations and a fleet of approximately 80 vehicles (Moore 2012). The MCFD is administered and suppression personnel are provided through a contract with the California Department of Forestry and Fire Protection (CDF). Support personnel are Merced County employees. The department also provides fire protection to the cities of Gustine, Dos Palos, and Livingston through agreements with these cities. The locations of the fire stations in Merced County are shown on Figure 7-3.

The department is divided into three battalions, each administered by a Battalion Chief. These battalions are numbered 17, 18, and 19, and the stations within each start with a 7, 8, or 9 to differentiate their respective battalions. The Battalion Chiefs are supervised by a Division Chief, who reports to the Deputy Chief and the Merced County Fire Chief. The Merced County Fire Chief also acts as the Madera-Mariposa-Merced Ranger Unit Chief for the California Department of Forestry and Fire Protection. The department also includes a Fire Prevention Bureau, Mobile Equipment Management, and the County Coordinator of the State Office of Emergency Services (OES).

The fire stations are staffed 24 hours a day by a full-time career Fire Captain or Fire Apparatus Engineer and emergency response is augmented with over 227 Paid Call Firefighters (PCFs) or volunteers. The PCF's are organized into engine companies by the station's response area within which they reside. Station response areas vary from 16 to 325 square miles, and the service area of the Department is over 2,000 square miles.

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Based on standard operating procedures, the MCDNF responds to calls for service in an effective manner by systematically using all components of the network. For example, at least two engines are automatically dispatched to all reports of a fire in a residential structure. If the engine from that initial response area is already committed to another emergency response, the next closest, staffed engine is dispatched to the call. If it is likely that an emergency will last longer than an hour, engines or other equipment can be moved to provide the best possible coverage of the area. Larger incidents require more equipment and personnel and may make movement of a large percentage of the department's resources necessary. In cases where more equipment is needed than can be expected to arrive at the emergency incident in a timely manner, mutual aid resources can be requested from the cities of Merced, Atwater, and Los Banos. Automatic and Mutual Aid resources are also available through C.D.F. and the State Office of Emergency Services.

All fire department response is received through and dispatched from the Emergency Command Center in Mariposa. The Emergency Command Center is staffed by C.D.F. Fire Captains and Dispatcher-clerks. A computer aided dispatch system is used to determine the proper type and number of apparatus to send to the particular emergency at hand. The Emergency Command Center has radio and telephone contact with resources throughout the state and can request assistance when the need arises.

Office of Emergency Services

The Office of Emergency Services (OES) was established as part of the Governor's Office in 1950 as the State Office of Civil Defense. The agency became more involved in natural disaster operations, and the name was changed to the California Disaster Office in 1956. Adoption of the Emergency Services Act in 1970 changed the agency's name to the Office of Emergency Services.

The Governor's Office of Emergency Services (OES) serves as the lead State agency for emergency management in California. To ensure the most effective use of all resources for dealing with any emergency, OES makes every effort to include government at all levels, businesses, community based organizations, and volunteers into this process.

The OES mission is to ensure the State is ready and able to mitigate against, prepare for, respond to, and recover from the effects of emergencies that threaten lives, property, and the environment. OES coordinates the activities of all state agencies relating to preparation and implementation of the State Emergency Plan. OES also coordinates the response efforts of state and local agencies to ensure maximum effect with minimum overlap and confusion. Additionally, OES coordinates the integration of federal resources into state and local response and recovery operations.

The Merced County Office of Emergency Services was established in 1971 in compliance with the California State Emergency Services Act and State OES standards. It is operated under the direction of the Fire Department. The coverage area of the OES encompasses all of Merced County and involves the support of federal, state, and local law enforcement agencies; fire departments; hospitals; ambulance services; and the County Health Department.

To prepare for a potential emergency, the County OES has an Emergency Operation Plan that serves as a response and recovery coordination plan for the entire county. This plan assesses potential emergency incidents and identifies procedures needed to remove the county's population from harm in the event of an emergency.

County Emergency Medical Services

The County Department of Public Health includes the County Emergency Medical Services (EMS) Agency, which provides oversight and regulation of the delivery of emergency medical services throughout Merced County. The County does not have an established emergency medical service level ratio, however, it currently provides emergency medical staff at a ratio of approximately 0.3 emergency medical technician (EMT)/paramedic per 1,000 residents.

Ambulance Service

Riggs Ambulance Service is the exclusive ambulance transport provider in Merced County, with a fleet of 17 ambulances, six support vehicles, and a staff ranging between 85 and 90. Approximately 60 to 65 staff members are certified EMTs and paramedics, while the remainder are support staff and dispatchers (Moore 2012).

Riggs Ambulance has divided Merced County into five service zones with separate required response times for each general location. The County Emergency Ground Transport average response time for rural areas is 40 minutes. In accordance with its September 2003 contract, Riggs Ambulance is required to respond in less than 40 minutes in rural areas a minimum of 90 percent of the time. As of 2002, Riggs Ambulance service was in compliance with required response times within the proposed project vicinity approximately 93 percent of the time. In addition, the Merced County Fire Department (MCFD) staff provides first-responder emergency medical service within the county. The County's paid-call firefighters are also certified EMTs.

Mutual and Automatic Aid

Mutual Aid is defined as the provision of resources (personnel, apparatus, and equipment) to a requesting jurisdiction already engaged in emergency operations, which have exhausted or will shortly exhaust local resources.

Mutual aid was designed as a cost effective solution to help mitigate this shortage of resources as well as providing for those rare major emergencies that border upon or are actual disasters. Mutual Aid is simply a plan designed to allow fire agencies to assist each other during situations when an agency cannot muster sufficient resources to bring a successful completion to the incident.

Mutual Aid is provided using a progressive system, commencing with the closest neighboring agencies and working out from the incident until all resource needs are fulfilled. This strategy has been designed to minimize delays for agencies needing additional help when calling for Mutual Aid.

Automatic aid is a relatively new concept in the fire service. It is the process whereby the closest piece of emergency apparatus responds to a call for assistance regardless of jurisdiction. As city boundaries continue to expand, County fire stations find themselves surrounded by annexed neighborhoods and in a position to assist the cities with response in the area surrounding them. Conversely, the city fire stations constructed to mitigate the development allow the County Fire Department to relocate its equipment and stations to locations better serving the county residents by automatically responding to county areas to which they are closer. In this way, automatic aid also helps agencies become more cost effective by doing away with duplication of services.

The Merced County Fire Department currently (2012) has agreements with the fire departments of Atwater, Merced, and Los Banos. An Automatic Aid agreement exists with the Atwater Fire Protection District, and

Mutual Aid agreements are in force with Merced and Los Banos. Mutual and Automatic Aid have become an integral part of the fire service and will grow in importance as the population continues to grow.

Land Use and Level of Service Categories within Merced County

The 1999 Merced County Fire Master Plan defines Level of Service in terms of five land use categories within Merced County. These categories are High Urban, Urban, Rural, Outlying, and Basic Level of Service and correlate with the Land Use chapter of the 2000 Merced County General Plan. Each land use category has its own response requirements and the level of service provided varies accordingly.

The level of service delivered by a fire department can be measured in many ways. The criteria most often used include fire flow delivery capability, response times of apparatus, number of firefighters per capita, square footage of facilities per capita, staffing levels on apparatus, and reserve capacity.

It is generally considered that to be even minimally effective in controlling a fire, the first due apparatus must arrive on the scene of the emergency before flashover occurs. This generally occurs within six to twelve minutes after the ignition of the fire. Beyond this point, a successful interior fire attack is not probable. This means that any response time over five minutes for the initial attack engine jeopardizes the chances of a successful outcome to the incident.

The Insurance Services Office (ISO), the body that rates fire departments and assigns public protection classifications for the establishment of fire insurance rates, suggests that “the built upon area of a city should have a first due engine company within one and one-half (1 ½) miles.” This would be consistent with the MCFD’s category of Heavy Urban Level of Service. The present ISO ratings for Merced County are a Level 5 for areas with fire hydrants and a Level 8 for areas without hydrants but within five miles of a fire station. The remainder of the county has a Fire Insurance Rating of 9. The higher the Insurance Rating number the lower the level of service and the higher the cost for a homeowner’s fire insurance. An area with no organized fire protection services is assigned a Class 10 rating.

Land Use Categories and Level of Service Objectives

The land use category of a given area determines the Level of Service required to adequately protect the residents of that area and their property from the threat of fire, and to provide other emergency response as necessary. People in like land use areas should receive equal levels of service. To assure that these services are provided, specific criteria must be set for the Level of Service in each land category. These goals can be used as part of the basis for fire station placement and staffing levels.

Category I – Heavy Urban - Population Density above 500 persons per square mile: The Heavy Urban Category is characterized by the inclusion of regional and community commercial centers, heavy industrial uses, and residential densities from eight to 20 dwelling units per acre. Fire protection objectives for the Heavy Urban category are to apply extinguishing agent to all fires within seven minutes of dispatch; have full first alarm assignment in operation within 10 minutes; and control 90 percent of all fires with first alarm assignment.

Category II – Urban - Population Density 250-500 persons per square mile: The Urban Category of land use represents a broad mix of uses, including medium industrial, commercial, neighborhood commercial centers, and residential densities of two to eight dwelling units per acre. Fire protection objectives for the

Urban category are to apply extinguishing agent to all fires within 10 minutes of dispatch; have full first alarm assignment in operation within 15 minutes; and control 90 percent of all fires with the first alarm assignment.

Category III – Rural Population Density 100-249 persons per square mile: This category includes the widest range of uses and variety of occupancies. Agriculture, Merced County’s biggest industry, makes its first major appearance in this category of land use. Light manufacturing, small scale commercial, light industrial, and service commercial all appear in this category. Residential densities range from one dwelling unit per acre to one per five acres. Fire protection objectives for the Rural category are to apply extinguishing agent to all fires within 14 minutes; have first alarm assignment in full operation within 20 minutes; and control 80 percent of all fires with first alarm assignment.

Category IV – Outlying- Population Density 1-99 persons per square mile: The Outlying Land Use Category encompasses the large tracts of land that usually surround wildland and recreational areas. Land use includes agriculture and related industries, mining, and residential occupancies at a density of one dwelling unit or less per five acres. Fire protection objectives for the Outlying category are to initiate suppression activities on 90 percent of all fires within 15 minutes of dispatch; apply extinguishing agent to all fires within 20 minutes; have full first alarm assignment in operation within 30 minute; and control 80 percent of all fires with first alarm assignment.

Category V – Basic Level of Service -Population Density 1-99 persons per square mile: The most remote land in the county and is mostly range and wildland. Some areas may have roads that are unimproved and impassable in winter. Much of this land is publicly owned or recreational in use. Fire protection objectives for the Basic Level of Service category are to apply extinguishing agent to all uncontrolled fires within 30 minutes of dispatch; have full first alarm assignment in operation within 45 minutes; and control 80 percent of all fires with first alarm assignment.

Average response times vary greatly between service area categories. The Fire Department consistently meets level of service response goals in most of the urbanized areas, and in rural areas where stations are close together and can provide mutual aid. Meeting response goals and providing services in sparsely populated rural and rapidly developing areas continues to be a challenge.

Figures 7-4 through 7-8 depict the Level of Service in Merced County by land use category and fire station locations, as provided by the Fire Department.

Existing and Future Needs

The Merced County Fire Master Plan addresses existing and future fire protection needs in the county in addition to establishing priorities and setting level of service standards. According to the plan, many of the Department’s facilities are inadequately staffed and equipped. Many of the County’s stations and equipment repair facilities are 40-50 years old and designed when fire apparatus were smaller and much less complicated. These facilities are in need of remodeling or replacement in order to meet current safety standards and provide adequate space for routine Department activities. In addition, response times in the county have increased due to rapid growth without a correspondent growth in fire protection facilities and staffing. Therefore, as the county continues to grow, the risks of injury, loss of life, and property damage will also increase.

In an assessment prepared for the MCFD in February of 1991 for the Interim Fire Facilities Impact Fee, a combination of the square footage of facilities and the cost of replacement equipment was used to determine the basic level of service and project future needs. As an alternative measure, the report stated that the department provided one fire station per 6,000 service population. The service population is defined as the total of residents and employees within the department's service area. Levels of service in 2005 had diminished to 9,100 service population per station. The report called for the construction of twenty new fire stations by the year 2010. Underserved County areas include the unincorporated areas surrounding the U.C. Merced campus and the Beachwood/Franklin/McSwain area. In spite of constraints, the County is currently (October 2006) constructing its first new station in 30 years. This station will be located in McSwain at Guerr Road and State Route 140, and is expected to be ready for occupation by the fall of 2007.

Providing adequate staffing for stations in order to meet response times continues to be a challenge. Most of the Department's stations are staffed by a single person with response provided by volunteers on call. Often, the paid employees must respond to incidents alone without the support of volunteers. The provision of adequate staffing for is becoming increasingly difficult as the number of volunteers continues to declines. In 2006, the Department retained approximately 227 paid call volunteers (PCFs). This number has declined from 325 paid, or approximately 30 percent, since 2004. The decline in the number of PCFs can be attributed to several factors, including that State and Federally mandated training has increased to over 120 hours before a volunteer can respond to calls. This training must be re-certified every year. Additionally, changes in lifestyle, with many people commuting or working multiple jobs, has reduced the number of people willing to make the sacrifice of time and effort required.

Adequate staffing cannot be accomplished without appropriate training and education for career and paid-call volunteers. Training cannot be delivered without appropriate facilities. State and Federal mandates require in excess of two hundred hours of training per year for all career firefighters. Although, the Department has acquired training facilities and offices at Castle Airport, certain topics requiring facilities such as burn buildings and training tower, are not presently available in Merced County.

The Fire Department is presently funded through a percentage of Merced County's property tax revenues taken from the General Fund. As these revenues fluctuate, so does the budget of the Fire Department. This budget fluctuation makes it difficult to manage the department efficiently and plan for the future. The Master Plan identifies the lack of funding as the main obstacle to improving fire protection. To address the need for additional service, the County in 2005 amended its Fire Facilities Impact fees to: \$591 per single family unit, \$533 per multi-family unit, and \$0.272 per square foot to \$0.635 per square foot for commercial uses, depending on density and type.

As development occurs in the unincorporated and underserved areas, the County must ensure that increases in demand for service protection caused by increased development and population growth are accommodated. Mitigation measures may take the form of donated land and equipment or fees in an amount sufficient to pay for needed infrastructure improvements. The Fire Facilities Impact Fee, even as amended, does not produce sufficient revenue to completely mitigate the effects of development.

Please See Next Page

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7.9 Schools

Introduction

This section describes the general characteristics of Merced County's school facilities.

Key Terms

Mello-Roos Bonds (Also known as Special Local Bonds). Schools Districts may form special districts to sell bonds for school construction projects. The bonds, which require approval of two-thirds of the voters, are repaid by property owners located within the special district.

Regulatory Setting

Education Code Section §17620.

Section 17620 authorizes any school district to levy a fee on development projects within the district for the construction or reconstruction of school facilities (subject to the limitations set forth in Government Code §65995) provided the district can show justification for levying the fees.

Government Code Section §65995.

This section governs the consideration of impacts and mitigation related to schools conducted pursuant to CEQA. This section limits the County to charging no more than the statutorily required impact fees, authorized under Section 17620 to offset school impacts, unless the school district conducts and School Facilities Needs Assessment and meets specific conditions. Section 65995 states that the payment of fee, pursuant to Education Code § 17620 and according to the amount specified in §§ 65995.5 or 65995.7 of the Government Code are deemed to fully and adequately mitigate the provision of school facilities related to new development. This section also prohibits the County from disapproving a project based on the inadequacy of school facility fees or the project applicant's refusal to provide school facilities mitigation.

State of California Proposition 1A/Senate Bill 50

Proposition 1A/Senate Bill (SB) 50 (Chapter 407, Statutes of 1998) was a school construction measure that was approved by the voters on the November 3, 1998 ballot. It authorized the expenditure of State general obligation bonds totaling \$9.2 billion through 2002, primarily for the modernization and rehabilitation of older school facilities and the construction of new school facilities related to new growth. Of the \$9.2 billion, \$2.5 billion was targeted for higher education facilities and the remaining \$6.7 billion was targeted for K-12 facilities, throughout the state.

Of the \$6.7 billion for K-12 schools, \$2.9 billion was for new construction, \$2.1 billion was for modernization of older schools, \$1.0 billion was for districts in hardship situations, and \$700 million was for class size reduction. The new construction money is available through a 50/50 State/local match program. The modernization money is available through an 80/20 State/local match program. There are a number of other program reforms that are not summarized here.

Proposition 1A/SB 50 also implemented significant fee reform by amending the laws governing developer fees and school mitigation in a number of ways:

- It established the base (statutory) amount (indexed for inflation) of allowable developer fees at \$1.93 per square foot for residential construction and \$0.31 per square foot for commercial construction.
- It prohibited school districts, cities, and counties from imposing school impact mitigation fees or other requirements in excess of or in addition to those provided in the statute.
- It also suspended, for a period of at least eight years, a series of court decisions allowing cities and counties to deny or condition development approvals on grounds of inadequate school facilities when acting on certain types of entitlements.

The School Facilities Law of 1986 limited the amount of any fee or other requirement imposed on a development project for the mitigation of impacts on school facilities. Although the law appeared to prohibit denial of a project on the basis of inadequacy of school facilities, three subsequent court decisions held that this prohibition applied only to administrative land use approvals (such as tentative maps, use permits, and building permits), not to legislative land use approvals (such as general plan amendments and rezoning). These court decisions became known as the Mira-Hart-Murietta trilogy.

In reliance on these decisions, many cities and counties required payment of school fees in excess of the statutory limits as a condition to granting approval of general plan amendments, specific plans, rezoning, and other legislative approvals.

SB 50 overturned the Mira-Hart-Murietta cases by expressly prohibiting local agencies from using the inadequacy of school facilities as a basis for denying or conditioning approvals of any “legislative or adjudicative act . . . involving . . . the planning, use, or development of real property” (Government Code 65996(b)). In other words, the regulations also explicitly prohibit local agencies from imposing school impact fees in excess of those provided by the statute in connection with approval of a project. Additionally, a local agency cannot require participation in a Mello-Roos for school facilities; however, the statutory fee is reduced by the amount of any voluntary participation in a Mello-Roos.

Proposition 1A/SB 50 has resulted in full State preemption of school mitigation. Satisfaction of the statutory requirements by a developer is deemed to be “full and complete mitigation” in compliance with the California Environmental Quality Act. The law does identify certain circumstances under which the statutory fee can be exceeded. These include preparation and adoption of a “needs analysis,” eligibility for State funding, and satisfaction of two of four requirements identified in the law including year-round enrollment, general obligation bond measure on the ballot over the last four years that received 50 percent plus one of the votes cast, 20 percent of the classes in portable classrooms, or specified outstanding debt.

Assuming a district can meet the test for exceeding the statutory fee, the law establishes ultimate fee caps of 50 percent of costs where the State makes a 50 percent match, or 100 percent of costs where the State match is unavailable. All fees are levied at the time the building permit is issued. District certification of payment of the applicable fee is required before the City or County can issue the building permit.

Department of Education Standards

The California Department of Education has published the Guide to School Site Analysis and Development in order to establish a valid technique for determining acreage for new school development. Rather than assigning a strict student/acreage ratio, this guide provides flexible formulas that permit each district to tailor its answers as necessary to accommodate its individual conditions. The Department of Education then recommends that a site utilization study be prepared for the site, based on these formulas.

Existing Conditions

A total of 20 school districts with 90 schools, one community college, and one university provide education throughout Merced County. Of the 20 school districts, five are unified districts providing educational services for kindergarten through 12th grade. The remaining 15 districts consist of 13 elementary school districts and two high school districts. Some of the districts have only one school. Figure 7-9 depicts the school districts, all of which comprise Merced County's K-12 public education system.

Public education is overseen by the Merced County Office of Education (MCOE). The MCOE is a regional agency whose mission is to provide educational leadership, resources, and service to assist school districts to be effective facilities of learning for all pupils. The Merced County Office of Education also acts as an intermediary agency between the California Department of Education and the school districts in Merced County.

Please See Next Page

DRAFT

The instructional programs offered by the schools serving Merced County are aligned with the California State curriculum framework in eight core curriculum subject areas. These core subjects consist of history, social science, English, language arts, mathematics, sciences, visual arts, and performing arts. The school districts offer campuses with both traditional as well as year round schedules. In addition to the core programs offered, these districts provide many other social, health, and education-related programs and services for children, parents, and educators.

According to information developed by the Department of Education, an estimated 18,154 (32 percent) of the county's students are from homes where English is not the primary spoken language. The Department estimates that 10,066 (17.8 percent) of students do not speak English at a level adequate to be successful in their grade level. A majority, 15,366 (84.6 percent), of students in the language programs spoke Spanish; 2,026 (11.2 percent) spoke Hmong, Yao, Khmer, Lao, or Vietnamese; and the remaining 762 (4.2 percent) spoke some other language.

K-12 Public Education System

In 1856 William Nelson was appointed as the first County Superintendent of Common Schools and petitioned the Board of Supervisors to divide the county into three school districts, numbered 1, 2, and 3; thus the present system of schools in Merced County was started.

The 1860 census reported 1,141 persons in Merced County. In 1863 the County Superintendent reported 267 children on the school rolls and that the school's budget was \$1,000. In 1895 the first high school was established: Merced County High School with 27 students and two teachers, under the administration of the County Board of Education. In 1897 a new high school was completed on the corner of 22nd and M Street in Courthouse Square. The Merced Union High School District was founded in 1915 with an elected board of trustees and included 36 elementary school districts.

Today there are 20 school districts with their own boards of trustees and superintendents serving over 56,000 k-12 students. Total enrolment in Merced County public schools has increased from about 47,462 to 54,489 students during a 15-year span from 1996 to 2011 (DOF 2011). On average, the growth rate has remained steady with annual increases approximating one percent. County schools anticipate a trend toward greater annual growth in proportion to build out of planned and proposed residential development.

The condition of school facilities in 2006 varied between excellent and adequate with respect to quality but not space. Most school classroom and administrative facilities are experiencing some form of overcrowding. Many schools lack adequate support facilities such as bathrooms, cafeterias, and recreational facilities. In 2006, all districts were applying for state funds to remodel and expand existing schools or build new school facilities.

The County's 1999 General Plan does not extensively discuss school facilities, and defers school planning to local school districts. However, the General Plan does recognize overcrowding as an important issue, and notes that "because school district boundaries overlap city and county territory, problems of overcrowding affect all county residents."

Overcrowding is most severe in the Los Banos, Gustine, Weaver, Livingston Elementary, and Merced Union High School Districts. Overcrowding is moderate in the Winton School District even though the District is opening a new school in the fall of 2006, due to continuing pressure from new residential development. The

failure of special local bond measures (Mello-Roos bonds) in recent years prior to 2006 has led to many districts struggling to maintain existing and develop new facilities to meet expected growth.

Statutory fees are not adequate to provide for maintenance of existing schools and the development of new facilities. In recognition of this, the Legislature proposed AB 127 (Proposition 1D, Kindergarten-University Public Education Facilities Bond Act of 2006) for consideration by the public during the November 7, 2006 General Election. This bond would provide nearly \$7.4 billion for K-12 school facilities modernization and new construction projects. Should this bond measure fail, Merced County school districts will continue to be severely restricted in their ability to meet existing and future facility needs.

Overcrowding continues to be an issue in many of the County's K-12 school districts. Although statutory fees continue to be inadequate to meet existing and projected facility needs, many school districts within have been successful in negotiating agreements with the development community for additional contributions to schools over and above statutory requirements. The terms of the agreements vary from district to district but most payments are based on either a dollar amount per square foot of home or a lump sum per housing unit. School district negotiated developer fees on new construction in Merced County are rapidly becoming a significant mechanism by which public K-12 schools are attempting to offset the effects of increasing population and urbanization in the county.

University of California, Merced

The University of California, Merced, opened on September 5, 2005, as the tenth campus of the University of California system and the first American research university to be built in the 21st century. Like all campuses in the UC system, UC Merced operates under the direction of the UC President and is governed by the Regents of the University of California, a 26-member board established under the California Constitution.

UC Merced offers a range of undergraduate and graduate programs and is projected to grow to a 25,000-student enrollment at full build-out by approximately the year 2030. UC Merced increases educational access and opportunities for Central Valley students and contributes to the economic growth of Central California.

Merced Community College District

Merced Community College was founded in 1962 and offers students the opportunity to obtain an associate degree, or to transfer academic credits to California State universities or the University of California. The College offers vocational certificates in various programs at two campuses, the main campus in Merced and a second campus in Los Banos.

The Merced Community College District is composed of most of Merced County, the area of the Chowchilla Union High School District in Madera County, and the Dos Palos Joint Elementary School District. The Governing Board is made up of seven elected members. The Merced Community College District was formed by a vote of the people of the Le Grand and Merced Union High School Districts on February 27, 1962 and became effective for all purposes July 1, 1963.

Merced Community College is fully accredited by the Western Association of Schools and Colleges, and is approved by the State Department of Education to train veterans under provisions of the G.I. Bill of Rights, and by the United States Immigration Service. The college offers a lower division program consisting of courses paralleling those of four-year colleges and universities, the credits for which are transferable to all other accredited colleges and universities.

On November 5, 2002, the Merced Community College District obtained authorization from the District's voters to issue general obligation bonds (up to \$53 million for the Merced Campus and up to \$11.9 million for the Los Banos campus) for facility improvements.

Major facility improvements include the construction of a new Learning Resources Center at the Merced Campus. The center will provide expanded learning opportunities for the students and staff of Merced College and the Merced Community. The 67,000 square foot facility will have a state of the art data network system that will allow visitors access to a wide range of electronic media as well as the resources of the World Wide Web through a high capacity Internet connection. The building is designed to provide numerous study areas as well as meeting rooms and group study rooms. The book stack area will provide space for 50,000 volumes. The facility is scheduled for occupancy in Spring 2007.

7.10 County Services

Introduction

This section describes the general characteristics of public services provided by the County. The county services categories presented here include: administrative and general services, public protection services, public assistance services, health and sanitation services, and educational services.

Key Terms

There are no key terms for this section.

Regulatory Setting

Section 6300 to 6350, Chapter 5, California Business and Professions Code. The statutes provide for a free county law library, a separate governmental entity, in each of the 58 counties of the State. The Merced County Law Library functions within the scope of these governing statutes.

Section 101000 et seq., California Health and Safety Code. These codes delineate the powers and responsibilities of the County Health Officer and his agents.

Sections 2400 through 24009, Government Code. Establish the Office of Auditors at the County level.

Section 25200, Government Code. Outlines the duties and responsibilities of the Board of Supervisors.

Section 26500, Government Code. Establishes the role and duties of the District Attorney's Office.

Sections 26900 through 26923, Government Code. Defines the duties of the Auditors office.

Section 27700, Government Code. Provides the statutory authority for the Public Defender's Office

Section 51200-51297.4 Government Code. The California Land Conservation Act of 1965--commonly referred to as the Williamson Act--enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. The assessed value of the land is reduced due to the development restriction, so that landowners enjoy the benefit of lower property taxes.

Section 5849, Part 3.6 Division 5 Welfare and Institutions Code - Mental Health Services Act (MHSA).

Provides for the Department of Mental Health (DMH) to provide increased funding, personnel and other resources to support County mental health programs and monitor progress toward statewide goals for children, transition age youth, adults, older adults and families. The Act addresses a broad continuum of prevention, early intervention and service needs and the necessary infrastructure, technology and training elements that will effectively support this system.

Assembly Bill 233. Effective January 1, 1998, this legislation shifted the responsibility for the trial courts from the counties to the State of California.

Senate Bill 2140. This legislation (the Trial Court Personnel Legislation) transferred employees in the courts from County employees to State of California courts employees.

California Tax and Revenue Code. Governs the duties of the Assessor's and Tax Collector's Offices.

Mental Health Services Act

In November 2004, the voters approved Proposition 63, the Mental Health Services Act (MHSA). The Goals of the MHSA are to:

- Reduce long-term adverse impact on individuals, families, state and local budgets due to untreated mental illness.
- Expand innovative service programs for children, adults and seniors.
- Reduce stigma associated with being diagnosed with a mental illness.

This Act imposes a 1 percent income tax on personal income in excess of \$1 million. Statewide, the Act was projected to generate approximately \$254 million in fiscal year 2004-05, \$683 million in 2005-06 and increasing amounts thereafter. Much of the funding will be provided to County mental health programs to fund programs consistent with their local plans.

Among the largest of the MHSA's proposed six components for creating a better program of mental health delivery system in California is called "Community Services and Supports (CSS)." To access MHSA funding, Merced County and other mental health programs in California were requested to develop and submit a complete CSS Program and Expenditure Plan describing programs and services to be developed during the first three years of implementation.

Merced County Department of Mental Health responded by launching a comprehensive needs assessment process that culminated in the creation of a CSS Program and Expenditure Plan, which was approved by the County Board of Supervisors on November 22, 2005. After County approval the Plan was submitted to the State Department of Mental Health, which approved the plan April 27, 2006

Existing Conditions

The Merced County Seat was established April 19, 1855. It is a general law county and a political subdivision of the State of California. The County must operate within the provisions of the California State law.

The County is located in the heart of California's central valley, the agricultural hub of the state. The County's abundant flat land and nearby sources of water support the County's agricultural economy. The County spans from the coastal ranges to the foothills of the Sierra Nevada, and occupies approximately 1,929 square miles. Merced County has a culturally diverse population and is the home to the University of California Merced, which opened in the Fall of 2005.

Persons of European heritage and Hispanics are the largest racial/ethnic groups within the county, but there is a substantial Asian American population. Of particular note, the year of 2000 Census showed that Hispanics are the most populace ethnic group in the county. This is the first official census to record the Hispanic population as the majority ethnicity in Merced County, and highlights the diversity in the county.

The 2000 Census showed Merced County population at 210,554. As of January, 2006 the California Department of Finance estimated the population for Merced County at 246,751, a 14 percent increase since the 2000 census. The population of Merced County is expected to continue to grow at a rapid rate over the next 20 years.

Merced County has twenty-four departments responsible for County operations. The County provides public services including public assistance services, health services, libraries, general government services, road maintenance, law enforcement, courts, and fire protection. All County functions and services are dependent upon Federal or State funding, bond issues, and other local revenues such as property and sales taxes, and direct service fees. Due to increased service demands resulting from population growth and additional State-mandated programs, coupled with a reduction in Federal and State financial support, the County is having a difficult time providing adequate levels of service in all departments. For a discussion of the law enforcement and courts, fire protection, transportation and road maintenance services provided by the County refer to sections 7.7, 7.8, and 6.1-6.8 respectively of this document.

Over the past few years, Merced County's fiscal situation has been a challenge of trying to provide more services with less money. Due to budget constraints, for fiscal year (FY) 2003/04 and FY 2004/05, each year the budget was developed based on a 10 percent reduction of the Prior Year's Budgeted Net County Cost. For FY 2005/06 and FY 2006/07, the budget was developed based on no increase to the prior years "Budgeted Net County Cost minus General Fund Fixed Assets" formula. To achieve balanced budgets, departments held positions vacant, adhered to a modified hiring freeze, decreased expenditures, and increased revenues where applicable to obtain a higher fund balance to assist in mitigating the State Budget impacts. During this period, the Board of Supervisors chose not to impose the adopted reduction to local public safety services.

An increasing and continued ethnically diverse population will continue to challenge the ability of County Departments to provide adequate service levels and culturally appropriate services. Many services are mandated by state and federal laws and transcend city/county boundaries. To maintain service goals, the County will need to determine what service levels are adequate for a variety of County functions and identify appropriate means of funding to achieve and maintain them. Cost and revenue sharing and cooperative

agreements between cities, stakeholder groups and the County should be encouraged. The use of new technologies to increase efficiency and save costs should also be encouraged.

County Administrative and General Services

The Board of Supervisors (BOS) is the governing body for Merced County. The County Executive Officer is appointed by the BOS and is exclusively responsible to the BOS for the general administration of Merced County. The County has twenty-four departments responsible for all county operations. There are five elected senior executives: Assessor, Auditor-Controller-Recorder-Clerk, District Attorney-Public Administrator, Sheriff-Coroner, and Treasurer-Tax Collector. The remaining senior executives are appointed by the County Executive Officer and must be confirmed by the BOS. General services and departments provided to county citizens include the offices of the Auditor-Controller-Recorder-County Clerk, Assessor, Tax Collector, County Spring Fair, and Commerce, Aviation, and Economic Development.

Auditor-Controller, Recorder, County Clerk Office

The Office of Auditor was created by the State legislature under Article II of the State Constitution. The Board of Supervisors with Resolution 64-83 added the function of Controller to the Auditor Office. The Auditor was incorporated with the Recorder in 1875 and recombined in 1955. The office of County Recorder was created by the State of California Constitution, Article II, Paragraph 5. In January 1995 the Auditor assumed the functions of County Clerk, Register of Voters, and Elections.

The Auditor is the chief accounting officer of the County and has general supervision over all officers, departments and institutions under control of the Board of Supervisors and all districts whose funds are in the County Treasury. The Controller's duties include auditing the accounts and records under the control of the Board and those of the dependent special districts. In addition, the Auditor-Controller is responsible for disbursement of claims and issuance of warrants for all County funds, special districts, County schools, school districts, and colleges; and apportions tax collections to taxing agencies such as County, cities, schools, and special districts.

The Recorder's Office records, indexes, and files documents such as property transfer records, financial statements, liens, deeds, certificates of discharge, maps (parcel, subdivision, highway, assessments, and surveys), notices, marriage, birth, and death certificates. In addition, the office is responsible for examining all documents for compliance with laws for recording and providing the public with general information and certified copies of records. Filing fees, micrographic fees, and documentary transfer taxes are also collected by the office.

The County Clerk issues marriage licenses, performs marriage ceremonies, accepts passport applications, fees, and files and indexes Fictitious Business Statements; administers oaths of office to Notaries as well as loyalty oaths to County employees and elected officials. In addition, the Clerk files powers of attorney for surety companies and files and posts public notices and environmental impact reports, certifies to the capacity of public officials.

The Auditor-Controller, Recorder, County Clerk Office serves as Registrar of Voters and Elections and is responsible for maintaining voter registration rolls and indexes, as well as conducting regular, special, and statewide election as prescribed by law. Primary and general elections are the financial responsibility of the County General Fund. Special elections are paid for by the entity requiring the election services, except in the cases where an election is ordered by the Board of Supervisors as a County cost.

Assessor

The Assessor's Office prepares an annual assessment roll showing all taxable real and personal property, except public utilities, in Merced County. Preparation is in accordance with the California Constitution and the State Revenue and Taxation Code. The Assessor oversees maintenance of the mapping service, administers and audit program as required by the State and provides appraisal data to LAFCo, the Planning Department, and other County departments as needed.

In July 2000, the Board of Supervisors approved the implementation of the "California Land Conservation Act (Williamson Act)," a program designed to provide an incentive for farmers and ranchers to remain in agriculture. The Act authorizes a city or county, by contract with the landowner, to limit the use of land to agricultural use or as an agricultural preserve in exchange for reduced property taxes.

Tax Collector

The duties of the Tax Collector's Office are governed by the Revenue & Taxation Code and include the billing and collection of all real and personal property taxes. In addition, the department collects the County's Motel/Hotel Transient Occupancy Tax and administers the Senior Citizen Postponement and Property Tax Assistance Program for seniors, the blind and the disabled. The Tax Collector is also responsible for the auction of all tax default properties.

Merced County Spring Fair

The Merced County Fair became a County department in 1981 when the Board adopted Ordinance 1039. The Fair is held annually during the first week of May as a county-wide educational, cultural, and recreational event. During the interim period between fairs, the buildings and grounds are rented to various groups and individuals for social, educational, and recreational activities.

Commerce, Aviation, and Economic Development

The Department of Commerce, Aviation, and Economic Development (CAED) was established in 1997 to develop and manage economic enhancement initiatives including development projects, entrepreneurial training, business outreach, business financing programs, and an array of other activities to stimulate overall economic progress in the county. Strategies have been implemented for start-up, retention, and expansion of businesses and industries in the county and to provide support and services required for maintaining an ongoing analysis of the Counties economies and trends for use in developing a stronger economic base. Additionally, grants are applied for on an ongoing basis to continue promoting business and economic growth within Merced County. In 2004, the department assumed responsibility for Castle Airport Aviation and Development Center and the County Redevelopment Program. The department continues to be in transition since assuming the responsibilities of Castle Airport Aviation and Development Center two years ago. Fiscal year 2006/2007 marks the activation of the County Redevelopment Agency and the Castle Airport project area.

County Public Protection Services

County services and departments designated as public protection services include the Courts, District Attorney and Public Defender offices, Probation, Juvenile Hall, Sheriff, Fire, Emergency Services, Agricultural Commissioner, Planning & Community Development, and Building Department. For a

discussion of the Sheriff and its divisions, and fire protection including emergency services, provided by the County refer to sections 7.7 and 7.8, respectively of this document.

Courts

In fiscal year 1997/98, State legislation (AB233) provided a comprehensive restructuring of the trial courts and their funding. The legislation shifted responsibility for the courts from the county to the State effective January 1, 1998. Assembly Bill 233 also established a Task Force on Trial Court Employees and Court Facilities. As a result, on January 1, 2001, employees in the courts were transferred from County employees to court employees. In 2002, the State finalized trial court funding reform and provided for the transferring of the responsibilities of the trial court facilities to the State.

The new Merced County Courthouse groundbreaking was held June 15, 2005. The 58,900 square foot two story building is designed to have six finished courtrooms and an additional shelled for a future seventh courtroom. The completion date is estimated at the end of 2006. Funds for this project are from debt financing and the Courthouse Construction Trust Fund (fines, fees, and assessments). The Board has a Financing Agreement and Facilities Memorandum of Understanding (MOU) between the State Administrative Offices of the Court (AOC) and Merced County, which will ultimately transfer the indebtedness from Merced County to the State.

Probation

The Probation Department provides coordinated services to the courts, other justice agencies within the county, and the community. The provided services include screening, investigation, disposition and treatment of juvenile status offenders and law violators; written probation reports and recommendations to the courts and correctional programming for those placed on probation; services to victims; and legally mandated and court ordered services in accordance with the appropriate sections of the Penal Code, Welfare and Institutions Code, Family Code, Civil Code, Code of Civil Procedure, Probate Code, and Government Code.

The Department, as part of a five-year plan initiated in 2006, is in the process of purchasing a scientifically validated assessment tool, which will determine each probationer's risk factor and supervision level. The first phase of the plan is to assess all 3,493 probationers currently on probation and then add probation officers to provide a commensurate amount of supervision. From both the public safety perspective as well as relieving jail overcrowding, this five-year plan provides due diligence on the part of Merced County.

Juvenile Hall

The Merced County Juvenile Hall, under direction of the Chief Probation Officer, provides temporary secure shelter, counseling, education, and care for minors detained or committed to the Juvenile Hall as status offenders or law violators.

On November 22, 2005, the Board of Supervisors approved Ordinance 1770 that designated 60 beds in the Detention Facility and 60 beds at the Camp Bear Creek Academy for Juvenile Hall use. Board approval of the new Camp Bear Creek Academy allows the department to provide rehabilitative programs for local youth and reduce out-of-county placements in group homes, probation camps, and the California Youth Authority. The Department will save money by reducing these costly placements as well as be more effective by working with juvenile offenders on a local level. In addition, the Camp designation allows the department to access statewide camps funding.

Fiscal year 2006/07 is the first entire year that the Juvenile Justice Correctional Complex will be in full operation. The increase in cost of the operation will be offset by the Juvenile Detention Facilities trust fund established for this purpose.

District Attorney's Office

The Office of District Attorney was established by the Constitution of the State of California, Government Code Section 26500, to provide prosecution and enforcement services in adult and juvenile criminal matters. The District Attorney's Office works with every component of the criminal justice system and the community to protect the innocent, convict and appropriately punish the guilty, and to protect the rights of victims and witnesses.

The general criminal division of the District Attorney's office conducts prosecutions for all public offenses, files complaints and petitions in adult and juvenile criminal matters, and assists the Grand Jury. The primary objective of Office is to obtain criminal convictions for criminal conduct occurring in Merced County. The Victim/Witness Program provides support and advocacy services for victims of violent crimes. The Child Abduction Unit provides enforcement for court ordered child custody and visitation. Through interdepartmental agreements/contracts the District Attorney's Office provides investigation and prosecution of Welfare Fund, Medical Assistance Program Fraud and fraudulent applications to the Housing Authority. Other specialized prosecution programs include Anti-Drug Abuse Enforcement, Insurance Fraud, Consumer Fraud, Environmental Protection, and the prosecution of career criminals, rural crimes, and gang violence.

Automation has played a vital role in the efficiency of the department. The District Attorney's Office is utilizing an imaging process to enhance case management and store files electronically. Expanding automation continues to be a goal of the department. The department has developed electronic exchange of information with the courts and law enforcement agencies in the county, and will continue to work with other agencies to facilitate automation progress.

Public Defender's Office

The Public Defender's Office represents indigent people in criminal and juvenile proceedings in all courts of the county. The statutory authority for this office is found in California Code Section 27700. From 2004 to 2006, adult criminal and juvenile crimes have increased slightly and the department expects a 2.5 percent caseload increase for the 2006/2007 fiscal year.

Effective January 1, 1998, as a result of Legislation (AB 233), the Board of Supervisors no longer has budget authority over expenditures related to the trial courts and their funding. However, indigent defense costs are a County obligation and cannot be funded by the Courts. Previously, indigent defense costs were associated with the Superior Court. In Fiscal Year 1997/1998, all costs related to indigent defense were combined into one budget, which includes all costs related to indigent defense outside the Public Defender's office.

In 2003, the County adopted a new procedure for providing indigent defense. The new procedure enables the County to contract with one legal firm rather than numerous individual private attorneys for cases the Public Offender's office is unable to represent. This change has achieved efficiencies and cost savings for the County.

The terms of the new indigent defense contract, as with the old, does not allow for capital cases. As a result, capital cases continue to have a significant impact on the County's general fund.

Agricultural Commissioner's Office

This department is committed to the protection and promotion of agriculture, Merced County's primary industry, as well as the enhancement and conservation of the environment and protection of the welfare of residents and consumers.

The department's programs focus on the following three goals:

- Preventing the introduction and spread of injurious insects, noxious weeds, and plant and animal diseases;
- Ensuring consumer satisfaction by standardization of packaging of fruits, nuts, vegetables, eggs, and honey;
- Enforcing laws relative to the use and sale of chemicals and pesticides.

Prior to 2005, the California Department of Food and Agriculture (CDFA) has contracted with the Agricultural Commissioner to conduct "high-risk" inspections of incoming plants and plant products to prevent introduction of new insects, disease, and weed pests into the county. Funding was provided by the State's general fund until State fiscal constraints forced a reduction to these contracts. Fortunately, the department's main source of State funding, the unclaimed gas tax, has increased sufficiently enough to allow the Agricultural Commissioner to continue the high-risk inspections. These inspections are critical to avoiding much more costly eradication efforts in the event that a pest enters and becomes established in the county. Not only do these inspections reduce the risk of potential infestation of Merced County agricultural crops, they also are the basis for establishing with other states and foreign countries the quality of the county's agricultural sector.

The Agricultural Commissioner's Office also has responsibility for enforcing State laws relative to businesses or the public who commercially use or are responsible for weighing and measuring devices and the accuracy of those devices. Activities are aimed at the protection of the public in their daily transactions involving weight, measure or count of any commodity or product purchased or sold in order to ensure equity in the market place.

Planning and Community Development Department

The Planning and Community Development Department provides professional and support staff to various commissions and bodies, including the Board of Supervisors, the Planning Commission, Municipal Advisory Councils (MACs), Local Agency Formation Commission (LAFCO), and Airport Land Use Commission (ALUC). The department implements land use policy plans and all functional elements, which bear on the physical development of unincorporated areas of the county. Through administration of the General Plan, Zoning Ordinance, conditional use permits, the Subdivision Map Act, code compliance, and the California Environmental Quality Act (CEQA), the department insures the orderly development of the county in conformance with the adopted policies of the Board of Supervisors. The Planning Department also administers affordable housing and housing rehabilitation programs using local, State, and Federal funding.

Building Division of the Public Works Department

The Public Works Department provides a Building and Safety Division, Professional Services, the Road Commissioner, Parks and Recreation, Fleet, Solid Waste, and Transit. The Road Commissioner, Fleet and

Transit Divisions are addressed in Chapter 6, *Transportation*. The Solid Waste Division is addressed in Section 7.5. The Parks and Recreation Division is addressed in Section 9.2.

The Building and Safety Division of the Public Works Department insures compliance with State and Federally mandated standards and Merced County codes to safeguard life and limb, health, property, and public welfare in relation to structures within the unincorporated areas of the county. This division manages the building permit process, which includes the Permit application, the Plan Check, Permit Issuance and Inspections. The County has experienced a substantial increase in the Building permit activity. This County division is self-supporting through revenue received from building permit and inspection fees. To assist the County in the issuance of building permits and the collection of new impact fees, new features have been implemented to the permit tracking software, TrakIt.

County Public Assistance Services

County services designated as public assistance services fall under the Human Services Agency and include such programs as assistance to the needy, aid to indigents, and programs for the aging.

Human Services Agency

The Merced County Human Services Agency (HSA) serves the community through 10 offices – five in Merced, three in Los Banos, one in Atwater, and one in Livingston.

The Merced County Human Services Agency provides immediate assistance in crisis situations to protect children and vulnerable adults from abuse, neglect, and exploitation. The Human Services Agency also provides assistance to people and families when they are temporarily unable to obtain food, clothing, and shelter.

The Department provides an array of programs that teach people how to avoid placing themselves at risk — and how to attain economic independence. This includes preventing child abuse and domestic violence, counseling for drug and alcohol problems, encouraging healthy lifestyles and training for jobs that can break the cycle of poverty and enable people to support themselves, and their families.

In addition, assistance is provided to senior citizens and disabled adults in achieving the greatest degree of independence possible, sponsoring services such as food deliveries, caregiver support, assistance with transportation, and help with home repairs.

In 2005, the Merced County Human Services Agency assisted more than 45,000 children, 28,000 families and 25,000 adults through state and federal programs that bring nearly \$315 million into Merced County annually. Providing culturally appropriate materials and services to Merced County's ethnically diverse populations continues to be a challenge.

County Health and Sanitation Services

County services designated as health and sanitation services include the programs overseen by the Public and Mental Health Services Departments.

Public Health Department

The Public Health Department derives its authority from Section 101000 et seq. of the California Health and Safety Code. These codes delineate the powers and responsibilities of the County Health Officer and his agents. Since 1990, medical responsibilities have been with the Health Officer while overall executive management of the Department functions has been under a non-physician administrator. The responsibilities of the different departmental functions include administration, clinical services, vital statistics, children's medical services, health education, environmental health services, public health nursing, maternal and child health, communicable disease control, medical emergency service management and planning and laboratory services.

Mental Health Services Department

A variety of mental health services and programs are available to mental health consumers in Merced County. Merced County is able to provide a selection of mental health services to children, youths, adults, and their families. Merced County also offers Drug and Alcohol Services. Both the inpatient and outpatient sites have staff that speak Spanish and several Southeast Asian languages. Staff also has access to the AT&T Language Line for additional help as needed. All interpreter services are available at no cost to consumers. Mental Health Services are available 24 hours a day and can be accessed by appointment, walk-in, or contacting Emergency Services.

Hospitals

Four hospitals provided medical services to the county in 2006. Merced County does not operate a county hospital but does lease the former County Hospital to Mercy Medical Center Merced. Mercy Medical Center Merced operates two hospital campuses in the city of Merced: Mercy Medical Center Dominican Campus, and Mercy Medical Center Community Campus. The two remaining hospitals in the county are the Memorial Hospital in Los Banos and the Dos Palos Memorial Hospital in Dos Palos.

The Dominican Campus provides 115 beds and an Urgent Care unit. The Community Campus provides 174 beds and 24-hour emergency services. These medical centers have a combined total of 230 physicians, 200 volunteers, and 1,200 employees. The two centers handle approximately 45,651 emergency service visits and 10,601 general admissions per year.

Mercy Medical Center Merced is planning a new medical campus in the city of Merced, which will essentially replace and augment the services provided by the existing Community Campus. The Dominican campus will remain in operation providing primarily outpatient services. The first phase of the new hospital will provide 185 beds upon build-out the hospital will provide over 400 beds. The new medical center is scheduled to open in 2009 and offer the latest in facility design and technology.

Memorial Hospital Los Banos is a community based, not-for-profit organization affiliated with Sutter Health. The facility provides 48 beds and a full continuum of care including: 24-Hour Emergency Care, Rural Health Clinic, inpatient and outpatient surgery, obstetrics, pediatrics, intensive care services and diagnostic imaging. In 1993, the facility opened their Helipad service. In 2002, a Portable MRI was added to meet the growing needs of Los Banos and the surrounding areas. In 2006, the Rural Health Clinic was newly remodeled and expanded, offering over seven clinics. In 2005 the hospital saw over 32,000 cases, approximately half of which were emergency service visits. In 2006, the Hospital employed 24 physicians, 279 employees, and 35 volunteers.

Dos Palos Memorial Hospital is a non-profit rural health clinic that provides general medical, skilled nursing and residential nursing services. The facility has a total of 29 beds: 27 for skilled nursing services and two for acute conditions. No emergency services are available at the hospital. In 2006, the hospital had approximately 50 employees and numerous volunteers drawn from local community groups. The hospital's physicians are provided through a contract with Interim Physicians group.

The Community Campus and the Dominican Campus, along with Memorial Hospital in Los Banos, provide medical services for all calls handled by Riggs Ambulance Service, with Mercy Community Campus and Mercy Dominican Campus serving the largest volume of patients by ambulance. Merced County does not currently have a Level One trauma center for critically injured patients within its boundaries. Merced County has an agreement with two Modesto hospitals, Doctors Medical Center and Memorial North Medical Center, designated as Major Trauma Patient Receiving Centers. The two Major Trauma Patient Receiving Centers admitted 242 patients during 2002.

University Medical Center-Fresno is the closest Level One Trauma and burn center, with 22 beds in the emergency room and 200 overall hospital beds. Two Level One trauma hospitals are located in San Jose and the Stanford Medical Center is located in Palo Alto. The next closest Level One facility would be at the University of California (UC) Davis Medical Center in Sacramento.

County Education Services

County services designated as education services include the County's Libraries and Cooperative Extension.

Libraries

The Merced County Library system was established in 1910. Since then, the Library has operated to provide a public service program addressing the informational, recreational, and cultural needs of all county residents. The County's public library facilities include the main branch in Merced and regional branches in Atwater, Dos Palos, Gustine, Livingston and Los Banos. These libraries lend books, records, cassettes and magazines to county residents. Computers are also available to residents for Internet and word processing services. The main branch is 44,050 square feet in size, and is open four days each week for an average of 7.5 hours per day. The regional branches are open five days each week for an average of 5.7 hours each day.

In January 2001, the Library acquired the operations of the Law Library from the Courts. The purpose of the County Law Library is to make the sources of the law available for legal research with the best law collection and supporting services possible within the scope of the funds available, and to provide free access for the judiciary, State, and County officials, members of the bar, and all residents of Merced County. The law Library is located in the city of Merced.

In January 1994, budget constraints resulted in the Library operations being reduced to a minimal level. Beginning that year library services in Merced County were scaled back and funding, programs, hours, and staff were reduced or terminated. In early 1997, the City and County adopted a property tax sharing agreement in which the County would receive a share of the tax increment from the City of Merced's Redevelopment Project Area 2 specifically for library purposes. While this agreement is currently in place, the County library system still lacks the funding necessary to provide adequate circulation and staffing for existing libraries. Compared to a State average library-spending rate of \$20.65 per capita, Merced County's per-capita expenditure in 1998 was \$4.03.

Efforts continue to fund restoration of hours and staffing. As of the fiscal year 2006-2007, the Library will begin implementing a five year plan to restore professional infrastructure of the County Library System and hours of Operation at the Main Library in Merced as well as the four larger branches (Atwater, Gustine, Livingston, and Los Banos).

Cooperative Extension

The programs of the University of California Cooperative Extension were developed to extend research-based information to rural areas through educational means. Cooperative extension works to provide local educational programs in the areas of agriculture, natural resources, youth development, family and consumer sciences, and community resource development. The system was established at the Federal level by the Smith Lever Act of 1914 and at the State and County levels by acts of the California Legislature in 1915. The cooperative effort in Merced County began with the opening of the Agricultural Extension office in 1917. The University of California provides the professional staff and Merced County provides funds for the clerical, support, operation, and maintenance of the program.

7.11 Major Findings

The following provides a summary of the major findings for this chapter.

Water Supply and Delivery

- In general, unincorporated areas rely on groundwater for a potable water supply.
- To ensure long-term availability of groundwater for municipal purposes, groundwater recharge and conversion of irrigation from groundwater to surface water are key elements of a countywide master plan.
- The County's 1990 General Plan defers water supply, treatment, and distribution planning to local service providers. Thus, there is little coordination between the service capacities and capabilities of local domestic water service providers and increasing demands for service as a result of land use decisions of private project proponents and Merced County.

Wastewater Collection/Disposal

- In general, unincorporated areas outside of major communities rely on individual septic systems for wastewater disposal.
- The unincorporated communities of Hilmar, Delhi, Santa Nella, Winton, Midway, and South Dos Palos receive sanitary sewer service from public utility districts.
- Treatment and disposal systems generally fall into two categories: treatment plants with subsequent land application or tertiary treatment for subsequent unrestricted Title 22 use/discharge to surface water.
- The County's 1990 General Plan defers wastewater transmission, treatment, and disposal planning to local service providers. Thus, there is little coordination between the service capacities and capabilities of local wastewater service providers and increasing demands for service as a result of land use decisions of private project proponents and Merced County.

Storm Drainage and Flood Control

- Storm drainage systems in Merced County must comply with the Merced County Department of Public Works Storm Drainage Design Manual.
- Approximately 380,010 acres of land within Merced County are subject to 100-year floods.
- Many unincorporated communities in Merced County are subject to flooding due to inadequate flood management systems.

Solid and Hazardous Waste

- At existing and planned disposal rates, the existing capacity of the Highway 59 landfill is to the year 2030, and the existing capacity of the Billy Wright landfill was stated to be 2011, but a recently approved expansion will likely extend the life of the landfill twenty more years
- No hazardous waste transfer, storage and disposal facilities are located in Merced County, although household hazardous wastes are received at the Highway 59 landfill site for treatment and disposal outside of Merced County.

Utilities

- Implementation of new development within Merced County will involve decisions as to which electrical supplier and alternative energy sources to use; the extent of dependency upon electrical and natural gas; and the degree that energy demand can be reduced through efficient building designs, site planning and other conservation measures.
- Demand for utility services will continue to increase with increasing population.

Law Enforcement

- Workloads for the Sheriff's Department and its divisions will continue to increase with increasing population.
- Correctional staffing, facility, and service needs continue to grow in order to meet the demand of an increasing inmate population impacting officer safety.
- Budgetary constraints are a primary barrier to improving and expanding facilities and services.

Fire Protection

- Many of the Fire Department's facilities are inadequately staffed and equipped. Most existing facilities are 40 to 50 years old and in need of remodeling or replacement.
- Planning and improvement efforts should focus on areas that are currently (October 2006) underserved.
- The fees collected from the County's Fire Facilities Impact Fee are inadequate to fund needed improvements and services.

Schools

- Existing statutory fees are inadequate to fund existing and new school facilities.
- Overcrowding is an issue that transcends County/City boundaries.
- Overcrowding is most severe in rapidly developing areas of the county

- Budgetary constraints are a primary barrier to improving and expanding facilities and services.
- An estimated 32 (18,154) percent of the county's students are from homes where English is not the primary spoken language. The Department estimates that 17.8 percent (10,066) of students do not speak English at a level adequate to be successful in their grade level.
- Total enrolment in Merced County public schools has increased from about 47,462 to 54,489 students during a 15-year span from 1996 to 2011.

County Services

- Merced County faces the challenge of trying to provide more services with less money.
- Workloads for all departments and services will continue to increase with increasing population.
- Providing culturally appropriate materials and services to Merced County's ethnically diverse populations is a challenge for all departments.
- Budgetary constraints are a primary barrier to improving and expanding facilities and services.