6. AIR QUALITY

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features. The primary factors that determine local air quality include the locations of air pollutant sources and the amounts of air contaminants emitted. Atmospheric conditions, such as wind direction, wind speed, and air temperature gradients, interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, that consequently affect air quality.

6.1 Introduction

This chapter of the Background Report describes existing regional topography and climate, federal and state ambient air quality standards, local air quality planning and management, and existing air quality conditions.

As will be discussed in greater detail in this Chapter, although Tulare County does currently meet federal and state air quality standards for pollutants such as Carbon Monoxide (CO) and Sulfur Dioxide, the County does not meet Ozone and PM10 standards at the federal level. In addition, the County contains the Sequoia and Kings Canyon National Parks, which is designated a Class I area (Class I areas are subject to strict air quality requirements by the Federal Clean Air Act). According to the National Park Service, this park periodically experiences some of the worst air quality in the National Park Service. In June 2004, the National Parks Conservation Association ranked SEKI number 1 in ground-level ozone production out of all the National Parks. This was based on National Park Service air quality data.

Methods

The information contained in this section was obtained from various sources, including the 2001 Tulare County General Plan Background Report. Additional information is based on printed reports and monitoring data from the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) and the California Air Resources Board (CARB).

Key Terms

The following key terms are used throughout this section to describe air quality conditions and the framework of regulations that pertain to these resources.

- **San Joaquin Valley Air Basin**. An air basin is a geographic area that exhibits similar meteorological and geographic conditions. California is divided into 15 air basins to assist with the statewide regional management of air quality issues. The SJVAB extends from San Joaquin County (northern boundary) to Kern County (southern boundary).

- **PM_{10}**. Dust and other particulates exhibit a range of particle sizes. Federal and state air quality regulations reflect the fact that smaller particles are easier to inhale and can be more damaging to health. PM10 refers to dust/particulates that are 10 microns in diameter or smaller.

- **$PM_{2.5}$**. The federal government has recently added standards for smaller dust particles. $PM_{2.5}$ refers to dust/particulates that are 2.5 microns in diameter or smaller.

- **Ozone Precursors**. There are several chemical steps in creating ozone. Ozone precursors are chemicals that lead to the eventual creation of ozone. Ozone precursors occur either naturally or as a result of human actives such as the use of combustion engines such as cars. Ozone is a pungent, colorless, toxic gas created in the atmosphere rather than emitted directly into the air. Ozone is produced in complex atmospheric reactions involving oxides of nitrogen and reactive organic gases with ultraviolet energy from the sun in a photochemical reaction.

- **Stationary Source**. A non-mobile source of air pollution such as a power plant, refinery or manufacturing facility.

- **Mobile Source**. A moving source of air pollution such as on road and off-road vehicles, boats, airplanes, lawn equipment and small utility engines.

- **Sensitive Receptors.** Sensitive receptors are defined as land uses that typically accommodate sensitive population groups such as long-term health care facilities, rehabilitation centers,

retirement homes, convalescent homes, residences, schools, childcare centers and playgrounds.

- **Sensitive Groups**. Sensitive groups are a subset of the general population that are at greater risk than the general population, to the effects of air pollution. These groups include the elderly, infants and children, and individuals with respiratory problems such as asthma.
- **Ambient Air Quality Standards** These standards measure outdoor air quality. They identify the maximum acceptable average concentrations of air pollutants during a specified period of time. These standards have been adopted at a state and federal level.
- **Reactive Organic Gases (ROG)** Reactive organic gases are photochemically reactive and are composed of non-methane hydrocarbons. These gases contribute to the formation of smog.
- **Nitrogen Oxides (Oxides of Nitrogen, NOx)** Nitrogen oxides are compounds of nitric oxide (NO), nitrogen dioxide (NO_2) and other oxides of nitrogen. Nitrogen oxides are primary created from the combustion process and are a major contributor to smog and acid rain formation.
- **Class 1 Designation.** As defined in the Clean Air Act "Class 1" areas are international parks, national wilderness areas (greater than 5000 acres), national memorial parks (greater than 5,000 acres), and national parks (greater than 6,000 acres) that existed on August 7, 1977.

Regulatory Setting

Air quality in a defined location is described as the concentration of various pollutants in the atmosphere, generally expressed in units of parts per million (ppm) or in micrograms per cubic meter (ug/m3). The type and amount of regulated air pollutants emitted into the atmosphere, the size and topography of the regional air basin, and the prevailing meteorological conditions, contribute in determining the air quality conditions of a particular location.

The significance of a particular pollutant's concentration is determined by its comparison with federal and state ambient air quality standards. Both the State of California and the federal government have established ambient air quality standards for

several different pollutants, expressed as maximum allowable concentrations. The standard for some pollutions varies in its measurable time period. Generally these standards have been set to protect public health, although for some pollutants, standards have been based on other values (such as the protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of state and federal ambient air quality standards is shown in Table 6-1.

Federal Regulations

- **Federal Clean Air Act**. The federal Clean Air Act, adopted in 1970 and amended twice thereafter (including the 1990 amendments), establishes the framework for modern air pollution control. The act directs the Environmental Protection Agency (EPA) to establish ambient air standards for six pollutants: ozone, carbon monoxide, lead, nitrogen dioxide, particulate matter, and sulfur dioxide. The standards are divided into primary and secondary standards; the former are set to protect human health with an adequate margin of safety and the latter to protect environmental values, such as plant and animal life.

  Areas that do not meet the ambient air quality standards are called "non-attainment areas". The federal Clean Air Act requires each state to submit a State Implementation Plan (SIP) for non-attainment areas. The SIP, which is reviewed and approved by the EPA, must demonstrate how the federal standards will be achieved. Failing to submit a plan or secure approval could lead to denial of federal funding and permits for such improvements as highway construction and sewage treatment plants. For cases in which the SIP is submitted by the state but fails to demonstrate achievement of the standards, the EPA is directed to prepare a federal implementation plan.

Table 6-1. State and National Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone	1 Hour 8 Hour	0.09 ppm –	0.12 ppm 0.08 ppm	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases and nitrogen oxides react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
Carbon Monoxide	1 Hour 8 Hour	20 ppm 9.0 ppm	35 ppm 9 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
Nitrogen Dioxide	1 Hour Annual	0.25 ppm –	– 0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
Sulfur Dioxide	1 Hour 3 Hour 24 Hour Annual	0.25 ppm – 0.04 ppm –	– 0.5 ppm 0.14 ppm 0.03 ppm	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
Respirable Particulate Matter (PM_{10})	24 Hour Annual	50 $\mu g/m^3$ 20 $\mu g/m^3$	150 $\mu g/m^3$ 50 $\mu g/m^3$	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).
Fine Particulate Matter ($PM_{2.5}$)	24 Hour Annual	– 12 $\mu g/m^3$	65 $\mu g/m^3$ 15 $\mu g/m^3$	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including nitrogen oxides, sulfur oxides, and organics.
Lead	Month Quarter	1.5 $\mu g/m^3$ –	– 1.5 $\mu g/m^3$	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.

Note: ppm = parts per million; µg/m3 = micrograms per cubic meter.

Source: California Air Resource Board,http://www.arb.ca.gov/aqs/aaqs2.p

- **Prevention of Significant Deterioration (PSD)** provisions within the Clean Air Act require that measures be taken to "preserve, protect and enhance the air quality in national parks, national wilderness areas, national monuments, national seashores, and other areas of special national or regional natural, recreation, scenic or historic values." There are strict requirements for areas designated as "Class 1".
- **Visibility Protection.** One of the goals of the Clean Air Act is to protect visibility in Class 1 areas. To implement this goal, the EPA has created Regional Haze Regulations for Protection of Visibility in National Parks and Wilderness Areas.
- **Sequoia and Kings Canyon National Park (SEKI).** SEKI is mandated by the Clean Air Act (SEKI has a Class 1 designation) and the National Park Organic Act to protect the air quality-related values and resources within the SEKI. As a result of these regulations, the SEKI Air Resources program has been involved in air quality monitoring for approximately 20 years. The program currently includes implementation of a daily air quality advisory for SEKI; research into the effects of air pollutants on the decline of amphibians; research and monitoring of ozone, nitrogen, and particulates; monitoring of ultraviolet (UV) radiation, synthetic chemicals, PM10, and air quality effects on visibility. The air program also includes cooperation with the federal, state, and regional governmental agencies that address air quality including the Environmental Protection Agency, the California Air Resources Board, and the San Joaquin Valley Unified Air Pollution Control District.

State Regulations

- **California Clean Air Act**. The California Clean Air Act (CCAA) of 1988 establishes an air quality management process that generally parallels the federal process. The CCAA, however, focuses on attainment of the state ambient air quality standards, which, for certain pollutants and averaging periods, are more stringent than the comparable federal standards. Responsibility for meeting California's standards is addressed by the California Air Resources Board (CARB) and local air pollution control districts (such as the eight county SJVAPCD, which administers air quality regulations for Tulare County). Compliance strategies are presented in district-level air quality management plans that are incorporated into the State Implementation Plan (SIP).

The CCAA requires that air districts prepare an air quality attainment plan if the district violates state air quality standards for carbon monoxide, sulfur dioxide, nitrogen dioxide, or ozone. Locally prepared attainment plans are not required for areas that violate the state PM_{10} standards. The CCAA requires that the state air quality standards be met as expeditiously as practicable but does not set precise attainment deadlines. Instead, the act established increasingly stringent requirements for areas that will require more time to achieve the standards.

The air quality attainment plan requirements established by the CCAA are based on the severity of air pollution caused by locally generated emissions. Upwind air pollution control districts are required to establish and implement emission control programs commensurate with the extent of pollutant transport to downwind districts.

- **California Air Resources Board**. The CARB is responsible for establishing and reviewing the state ambient air quality standards, compiling the California SIP and securing approval of that plan from the U.S. EPA. The California SIP is periodically modified by the CARB to reflect the latest emission inventories, planning documents, and rules and regulations of various air basins. The CARB produces a major part of the SIP for pollution sources that are statewide in scope; however, it relies on the local air districts to provide emissions inventory data and additional strategies for sources under their jurisdiction. The SIP consists of the emission standards for vehicular sources and consumer products set by the CARB, and attainment plans adopted by the local air agencies as approved by CARB. The EPA reviews the air quality SIPs to verify conformity with Clean Air Act mandates and that they will achieve air quality goals when implemented. If EPA determines that a SIP is inadequate, it may prepare a Federal Implementation Plan (FIP) for the nonattainment area, and may impose additional control measures.

  In addition to preparation of the SIP, the CARB also regulates mobile emission sources in California, such as construction equipment, trucks, and automobiles, and oversees the activities of air quality management districts, which are

organized at the county or regional level. The county or regional air quality management districts are primarily responsible for regulating stationary emission sources at industrial and commercial facilities within their jurisdiction and for preparing the air quality plans that are required under the federal Clean Air Act and California Clean Air Act.

- **California Environmental Quality Act.** Appendix G of the CEQA Guidelines establishes significance criteria for certain specified air quality impacts. These criteria are presented below and are also discussed in the Guide for Assessing and Mitigating Air Quality Impacts. Conflict with or obstruction of implementation of the applicable air quality plan;

  Violate any air quality standard or contribute substantially to an existing or project air quality violation;

  Result in a cumulatively considerable net increase of any criteria pollutant for which the project is non-attainment under applicable federal or state ambient air quality standards (including releasing emissions which exceed quantitative thresholds for ozone precursors);

  Expose sensitive receptors to substantial pollutant concentrations; or

  Create objectionable odors affecting a substantial number of people

Local Regulations

- **San Joaquin Valley Air Pollution Control District**. Tulare County is located in the lower sub-region of the San Joaquin Valley Air Basin (SJVAB). The SJVAB is currently designated as extreme non-attainment for federal and state ozone standards and serious non-attainment for PM_{10} standards at the federal level and non-attainment at the state level.

  As noted above, federal and state air quality laws require regions designated as non-attainment to prepare plans that demonstrate how the region will attain individual air quality standards or that demonstrate reasonable improvements in local air quality conditions. As a result, a series of resolutions have been developed for the SJVAB which will be discussed later in this Chapter.

The SJVAPCD is primarily responsible for regulating stationary source emissions within Tulare County and preparing the air quality plans (or portions thereof) for its jurisdiction. SJVAPCD's primary approach of implementing local air quality plans occurs through the adoption of rules and regulations. Stationary sources within the jurisdiction are regulated by the SJVAPCD's permit authority over such sources and through its review and planning activities. The district has published a "Guide for Assessing and Mitigating Air Quality Impacts"(GAMAQI), an advisory document that provides lead agencies, consultants, and project applicants with uniform procedures for addressing air quality in environmental documents. A major part of the GAMAQI includes a discussion of air quality control measures that are recommended for use in mitigating construction and operation impacts in environmental documents. The district has also published "Air Quality Guidelines for General Plans" (2003), which provides guidance to local officials and staff on developing and implementing local policies and programs to be included in local jurisdictions' general plans.

Environmental Setting

The topography of Tulare County significantly varies in elevation from its eastern to western borders which results in large climatic variations, ultimately affecting air quality. The western portion of the county is within the low-lying areas of the San Joaquin Valley Air Basin. This portion of the county is much dryer in comparison to the eastern portion that is located on the slopes of the Sierra Nevada Mountains. The higher elevation contributes to both increased precipitation and a cooler climate.

Wind direction and velocity in the eastern section varies significantly from the western portion of the county. The western side receives northwesterly winds. The eastern side of the county exhibits more variable wind patterns, but the wind direction is typically up-slope during the day and down-slope in the evening. Generally, the wind direction in the eastern portion of the county is westerly, however terrain differences can create moderate directional changes.

Existing Emission Sources

Unlike other air basins in California, the pollution of the San Joaquin Valley Air Basin is not produced in large urban areas. Instead emissions are generated in many moderate sized communities. Emission levels in the valley have been decreasing overall since 1990. This can be primarily attributed to motor vehicle emission controls, reducing the amount of vehicle emissions.

The main source of Carbon Monoxide (CO) and Nitrogen Oxides (NOx) emissions occurs from motor vehicles. The largest contributor to reactive organic gases (ROG) emissions focuses on the oil and gas production area located in the lower part of the San Joaquin Valley Air Basin, which includes Tulare County. ROG emissions have been decreasing since 1985 due to stricter standards even though the vehicle miles have been increasing. The ozone issue in the SJVAB has been ranked the 2nd worst in the U.S.A. even though data shows that overall ozone has been decreasing (between 1982-2001). Direct PM_{10} emissions have decreased between the years 1975 and 1995 and have remained relatively constant since 2000. The source of PM_{10} in the San Joaquin Valley Air Basin is created by vehicles traveling on unpaved roads, and agricultural activities.

Air Quality Monitoring and Existing Emission Levels

Geographic areas and air basins are classified for each pollutant as either attainment or non-attainment. In general, "non-attainment" means that the federal standard has been exceeded more than twice per year anywhere within the air basin (Table 6-1). Measured ambient air pollutant concentrations determine the attainment status within an area. There are several ambient air monitoring stations in Tulare County, three of which are located in mountainous areas at Sequoia National Park: Lower Kaweah; Sequoia and Kings Canyon National Park; and Lookout Point at Sequoia National Park. Air monitoring stations are also located in low-lying areas of the county in Visalia (North Church Street) and Visalia Airport. The air monitoring station at SEKI typically records the highest levels of ozone in Tulare County. According to the National Parks Conservation Association, SEKI ranked number 1 in ground-level ozone production out of all the National Parks in 2004. This ground-level ozone is responsible for hazy conditions that SEKI often experiences. As a result, SEKI does conduct visibility monitoring. Table 6-2 shows ambient air quality data for maximum concentrations of the non-attainment pollutants at each of the monitoring stations in SEKI and Visalia.

Table 6-2. Selected Air Quality Monitoring Data by Monitoring Station – Number of Days Above the State Standard for Years 1991-2003

Station	Pollutant and Averaging Time	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Visalia N Church Street	Ozone, Max, 1-hour concentration (ppm)	31	23	60	52	48	53	24	54	52	46	36	35	43
	Ozone Max, 8-hour concentration (ppm)	*	*	*	*	*	*	*	*	*	*	*	*	*
	PM10 Max 24-hour concentration (ug/m3)	36	27	30	26	29	25	11	18	30	30	27	29	17
	Carbon Monoxide, Max 8-hour concentration (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0
Sequoia NP-Lower Kaweah	Ozone, Max, 1-hour concentration (ppm)	36	46	53	52	22	50	24	34	36	8	21	69	44
	Ozone Max, 8-hour concentration (ppm)	*	*	*	*	*	*	*	*	*	*	*	*	*
	PM10 Max 24-hour concentration (ug/m3)	*	*	*	*	*	*	*	*	*	*	*	*	*
	Carbon Monoxide, Max 8-hour concentration (ppm)	*	*	*	*	*	*	*	*	*	*	*	*	*
Sequoia & Kings Canyon NP	Ozone, Max, 1-hour concentration (ppm)	*	*	*	*	*	*	*	*	48	41	58	72	69
	Ozone Max, 8-hour concentration (ppm)	*	*	*	*	*	*	*	*	*	*	*	*	*
	PM10 Max 24-hour concentration (ug/m3)	*	*	*	*	*	*	*	*	*	*	*	*	*
	Carbon Monoxide, Max 8-hour concentration (ppm)	*	*	*	*	*	*	*	*	*	*	*	*	*
Sequoia NP-Lookout Point	Ozone, Max, 1-hour concentration (ppm)	*	*	*	*	*	*	39	29	64	45	32	69	49
	Ozone Max, 8-hour concentration (ppm)	*	*	*	*	*	*	*	*	*	*	*	*	*
	PM10 Max 24-hour concentration (ug/m3)	*	*	*	*	*	*	*	*	*	*	*	*	*
	Carbon Monoxide, Max 8-hour concentration (ppm)	*	*	*	*	*	*	*	*	*	*	*	*	*
Visalia N Church Street	Ozone, Max, 1-hour concentration (ppm)	1	2	9	10	2	4	1	6	1	1	2	1	0
	Ozone Max, 8-hour concentration (ppm)	23	14	50	51	40	44	17	45	33	29	25	26	31
	PM10 Max 24-hour concentration (ug/m3)	1	0	0	0	0	0	0	1	0	0	0	0	0
	Carbon Monoxide, Max 8-hour concentration (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0
Sequoia NP-Lower Kaweah	Ozone, Max, 1-hour concentration (ppm)	0	0	2	1	0	0	0	1	0	0	0	1	0
	Ozone Max, 8-hour concentration (ppm)	34	50	48	58	18	50	26	27	39	8	27	73	42
	PM10 Max 24-hour concentration (ug/m3)	*	*	*	*	*	*	*	*	*	*	*	*	*
	Carbon Monoxide, Max 8-hour concentration (ppm)	*	*	*	*	*	*	*	*	*	*	*	*	*

Table 6-2. Selected Air Quality Monitoring Data by Monitoring Station – Number of Days Above the State Standard for Years 1991-2003

Station	Pollutant and Averaging Time	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Sequoia & Kings Canyon NP	Ozone, Max, 1-hour concentration (ppm)	*	*	*	*	*	*	*	*	2	0	0	1	2
	Ozone Max, 8-hour concentration (ppm)	*	*	*	*	*	*	*	*	52	40	61	80	72
	PM10 Max 24-hour concentration (ug/m3)	*	*	*	*	*	*	*	*	*	*	*	*	*
	Carbon Monoxide, Max 8-hour concentration (ppm)	*	*	*	*	*	*	*	*	*	*	*	*	*
Sequoia NP-Lookout Point	Ozone, Max, 1-hour concentration (ppm)	*	*	*	*	*	*	0	0	0	0	0	1	1
	Ozone Max, 8-hour concentration (ppm)	*	*	*	*	*	*	45	31	73	52	40	81	53
	PM10 Max 24-hour concentration (ug/m3)	*	*	*	*	*	*	*	*	*	*	*	*	*
	Carbon Monoxide, Max 8-hour concentration (ppm)	*	*	*	*	*	*	*	*	*	*	*	*	*

* No data available.

Note: Coverage varies year to year and by pollutant. In most cases coverage is not complete for the whole year.

Source: California Air Resources Board: Highest 4 Daily Maximum, website at: http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start

Tulare County did not meet the state or federal regulations for the Ozone one-hour concentration during 1991-2001. Ozone does not meet the federal standard for Ozone eight-hour for the same time period as well. (There is no state standard for the Ozone eight-hour maximum concentration.) During 1991-2000 the 24-hour maximum average PM_{10} concentrations were not within the state standard. The PM_{10} levels were also not in attainment with the federal 24-hour standard in years 1991, 1998, and 1999. Carbon Monoxide emissions have met regulations since 1991 for both the state standards and the federal standards.

Tulare County complies with all federal and state ambient air quality standards for carbon monoxide (CO) and sulfates (SO_3), and is therefore classified as an attainment zone for those pollutants. Hydrogen sulfide (H_2S) levels are unclassified. Ozone and PM_{10} concentrations are in non-attainment with the federal standards.

The federal non-attainment designation is further subdivided into five categories (listed in order of increasing severity): marginal, moderate, serious, severe, and extreme. The degree of an area's non-attainment status reflects the extent of the pollution and the expected time period required in order to achieve attainment. The county is currently considered in severe non-attainment with the state and federal standards for Ozone, and in serious non-attainment for PM_{10}.

Designated non-attainment areas are generally subject to more stringent review by CARB and EPA. In the endeavor to improve air quality to achieve the standards, projects are subject to more stringent pollution control strategies and requirements for mitigation measures (such as mobile source reduction measures). If the National Ambient Air Quality Standards (NAAQS) are not achieved within the specified timeframe, federal highway funding penalties (and a federally administered implementation plan incorporating potentially harsh measures to achieve the NAAQS) will result.

In summary, the attainment status of Tulare County is as follows:

- Ozone. Recently reclassified from severe non-attainment to extreme non-attainment by the EPA. Classified as severe non-attainment by the state.

- PM10. Classified as severe non-attainment at the federal level. Classified as non-attainment by the state.
- CO. Tulare County is in attainment with state standards.
- NO2. Unclassified/Attainment at the federal level. Classified attainment at the state level.
- SO2. Unclassified at the federal level. Classified attainment at the state level.
- Sulfates (no federal standard). Classified attainment at the state level.
- Lead (no federal designation). Classified attainment at the state level.
- H2S (no federal standard). Unclassified by the state.
- Visibility (no federal standard). Unclassified by the state.

Regulatory Solutions to Non-Attainment

Ozone

The San Joaquin Valley Air Basin (SJVAB) has severe ozone problems. The EPA has required the SJVAPCD to demonstrate in a plan, substantiated with modeling, that the ozone NAAQS could be met by the November 15, 2005 deadline. However, the district could not provide this demonstration for several reasons, including that its achievement would require regulation of certain source categories not currently under the jurisdiction of the district. According to the district, in order to meet the standard the SJVAB must reduce the total emissions inventory by an additional 30 percent (300 tons per day). Because attainment by the deadline could not be demonstrated by the mandated deadlines, the federal sanction clock was started. The clocks can be stopped if the SJVAPCD SIP can be demonstrated to comply with specified federal requirements by November 15, 2005. However, the district recognized that it could not achieve demonstration in time. Therefore, the district, through petition by the state on behalf of SJVAPCD, sought a change in the federal nonattainment classification from *severe* to *extreme* nonattainment with the ozone standard. An extreme nonattainment designation would effectively move the compliance deadline to year 2010 before federal sanctions would begin.

On February 23, 2004, EPA publicly announced its intention to grant the request by the State of California to voluntarily reclassify the SJVAB from a "severe" to an "extreme" 1-hour ozone nonattainment area. The EPA stated that, except for a demonstration of attainment of the ozone standard by 2005, the SJVUAPCD has submitted all of the required severe area plan requirements and they were deemed complete. EPA proposed that the state submit an extreme ozone nonattainment area [air quality] plan for the SJVAB by October 1, 2004, and that revised Indirect Source Review (ISR) rules and Title V program revisions for the areas within the District's jurisdiction be submitted to EPA within 12 months from the effective final reclassification date. It is anticipated that the effect of the proposed revisions to NSR and Title V within the SJVAB will be to lower the emission thresholds for which a stationary source is deemed as "major", and to subject to more stringent permit requirements a greater number of existing sources currently considered as non-major sources including more stringent offset requirements. Regulation of previously unregulated agricultural equipment is included.

In order to respond to the non-attainment designation for Ozone that the SJVAB has received, the Tulare County Board of Supervisors adopted the following resolutions in 2002 and 2004, respectively.

- **Resolution 2002-0157.** Resolution 2002-0157, as adopted on March 5, 2002, requires the County to commit to implementing the Reasonably Available Control Measures (RACM's) included in the Resolution. The following RACM's were included in the resolution:
    - Increasing transit service to the unincorporated communities of Woodville, Poplar and Cotton Center;
    - Purchase of three new buses and installation of additional bicycle racks on buses;
    - Public outreach;
    - Providing preferential parking for carpools and vanpools;

- Removing on-street parking and providing bus pullouts in curbs to improve traffic flow;
- Supporting the purchase of hybrid vehicles for the County fleet;
- Mandating that the General Plan Update implement land use policies supporting public transit and vehicle trip reduction; and
- Programming $13,264,000 of highway widening projects.

- **Resolution 2004-067.** As part of a follow up effort to Resolution 2002-0157 and to address the federal reclassification to Extreme non-attainment for Ozone, the County Board of Supervisors adopted Resolution 2004-067. The resolution contains additional RACM's as summarized below:
  - The development and implementation of recommended procedures, thresholds, and policies related to land use projects to help achieve air quality goals;
  - Encouraging land use patterns which support public transit and alternative modes of transportation;
  - Exploring concepts of Livable Communities as they address housing incentives and transportation;
  - Consideration of incentives to encourage developments in unincorporated communities that are sensitive to air quality concerns; and
  - Exploring ways to enhance van/carpool incentives, alternative work schedules, and other Transportation Demand Management strategies.

PM10

Due to the non-attainment designation for PM10 that the SJVAB has received and its failure to attain the PM10 standard by December 31, 2001, the EPA required that the SJVAPCD submit an

air quality plan by December 31, 2002 to achieve an annual reduction of 5 percent. In response to this requirement, Tulare County Board of Supervisors adopted Resolution 2002-0812 on October 29, 2002.

The resolution contains the following Best Available Control Measures (BACMs) to be implemented in order to reduce PM10 emissions in the County:

- Paving or stabilizing of unpaved roads and alleys;
- Paving, vegetating, chemically stabilizing unpaved access points onto paved roads;
- Curbing, paving, or stabilizing shoulders on paved roads;
- Frequent routine sweeping or cleaning of paved roads;
- Intensive street cleaning requirements for industrial paved roads and streets providing access to industrial/ construction sites; and
- Debris removal after wind and rain runoff when blocking roadways.

Please see next page.

7. PUBLIC SERVICES AND UTILITIES

7.1 Introduction

This chapter of the Background Report summarizes the current state of public services and utilities within Tulare County. The methodology for assessing current conditions and future expansion potential is provided. In addition, key terms that are relevant to this discussion and a summary of local, state, and federal regulations that apply are covered.

This chapter is divided into the following Sections:

- Domestic Water Infrastructure (Section 7.2);
- Sanitary Sewer Infrastructure (Section 7.3);
- Storm Drainage Infrastructure (Section 7.4);
- Solid and Hazardous Waste (Section 7.5);
- Gas and Electric Service (Section 7.6);
- Law Enforcement (Section 7.7);
- Fire Protection (Section 7.8);
- Schools (Section 7.9);
- Communications (Section 7.10);
- Court Services (Section 7.11);
- Libraries (Section 7.12);
- Hospital and Ambulance Services (Section 7.13); and
- Social Services (Section 7.14).

7.2 Domestic Water Infrastructure

Introduction

The purpose of this section is to summarize existing information regarding Tulare County's domestic water infrastructure. This section focuses primarily on water treatment (including general discussions pertaining to water quality), current demand (no. of connections), current supply capacity (wells, pumps, reservoirs, etc.), storage and distribution infrastructure, and the condition of these facilities. Other water supply issues including groundwater levels, groundwater recharge, and irrigation are addressed in Section 10.2, Water Resources and in Appendix C, Water Resources.

Methodology

Current water infrastructure within Tulare County is described in terms of agency's providing service, as many of the domestic water systems are isolated and serve only individual small communities within the County. There are a multitude of domestic water service providers (both public and private) in Tulare County including community service districts (CSDs), irrigation districts (IDs), public utility districts (PUDs), sanitary districts, County Service Areas (CSAs) and mutual water companies. These Districts are self governing and are not subject to County control. The County must coordinate its plans for growth and development with these districts in order to assure that services can be provided on a timely basis to areas planned for development, including areas within designated Urban Development Boundaries (UDBs).

Data reported in this section includes the following:

- Number of connections to system (metered, non-metered);
- Maximum delivery and storage capacities (if available);
- Backup system capacities (if present);
- Water treatment processes and capacities (if applicable);
- Age and current condition of system (tanks, pipelines, pumping stations, and treatment facilities);
- Current population served by system; and

- Pressure requirements (domestic and fire flow).

The data reported in this section of the report was collected from a number of sources including but not limited to special districts that provide water service (including special district websites), the Tulare County Resource Management Agency, the California Department of Water Resources, the California Regional Water Quality Control Board (Central Valley Region), the State Department of Health Services Division of Drinking Water, and the U.S. Census Bureau.

Key Terms

- **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-ft is equal to 325,851 gallons or 1,233 cubic meters.

- **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.

- **Appropriated Right.** That right to put to reasonable beneficial use a quantity of water subordinate to the use thereof by prior appropriators and defined riparian diverters.

- **Central Valley Project.** The water supply project in California owned by the United States and managed by the Department of the Interior, Bureau of Reclamation.

- **Commercial Water Use.** Water used for motels, hotels, restaurants, office buildings, other commercial facilities, and institutions. Water for commercial uses comes 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 it and it is 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 the 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, dogs, flushing toilets, and watering lawns and gardens.

- **Drawdown.** A lowering of the ground-water surface level caused by pumping.

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

- **Groundwater Overdraft.** The condition of a groundwater basin in which the amount of water extracted (through pumping) exceeds the amount of water that recharges the basin.

- **Groundwater Recharge.** The natural or intentional infiltration of surface water into the zone of saturation (groundwater).

- **Industrial Water Use.** Water used for industrial purposes in such industries as steel, chemical, paper, and petroleum refining. Nationally, water for industrial uses comes mainly (80%) 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 causing a risk to human health.

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

- **Milligrams per Liter (mg/L).** A unit of the 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.

- **Riparian Right.** Riparian water rights apply only to lands that are traversed by or border on a natural watercourse. Riparian owners have a right (correlative with the right of each other riparian owner) to share in the reasonable beneficial use of the natural flow of water that passes the owners land. No permit is required for such use. Riparian water must be used reasonably, beneficially, and solely on riparian (adjacent) land and cannot be stored for later use.

- **Safe Yield.** The maximum dependable draft that can be made continuously on source of groundwater supply during a period of years during which the probable driest period or period of greatest deficiency in water supply is likely to occur.

- **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 is 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, state, and local 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. The California Water Code establishes the Department of Water Resources (DWR) as the primary research and supply development and management agency for water, and the State Water Resources Control Board for overall water quality policy development and for dealing with water rights issues. There are also nine Regional Water Quality Control Boards that are responsible for the regulation, enforcement, and protection of the beneficial uses of water.

Safe Drinking Water Act. The Safe Drinking Water Act (SDWA), administered by the EPA in coordination with the states, is the main federal law that ensures the quality of America's drinking water. Under the SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers that implement those standards. In 1996, Congress amended the Safe Drinking Water Act to emphasize sound science and 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.

Urban Water Management Planning Act. In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code Sections 10610 – 10656). The Act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet of water annually, should make every

effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Act 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 UWMP is submitted pursuant to the Urban Water Management Planning Act.

Agricultural Water Suppliers Efficient Water Management Practices Act of 1990 (AB 3616). AB 3616 establishes a relationship between DWR and agricultural water suppliers to develop and implement efficient water management practices. The intent of this act was to promote the implementation of voluntary, efficient water management practices (EWMPs) among agricultural water suppliers. It led to the creation of the Agricultural Water Management Council and the signing of a Memorandum of Understanding among agricultural water suppliers, environmental groups and other interested parties. As part of the EWMP evaluation process, a Net Benefits Analysis was developed that quantitatively and qualitatively evaluates technical, environmental, socioeconomic, financial, and third party impacts related to each EWMP. Accepted EWMPs are then included in an Agricultural Water Management Plan prepared by each water supplier. The following Districts serving areas within Tulare County have Water Management Plans that have been endorsed by the Agricultural Water Management Council:

- Alta Irrigation District;
- Orange Cove Irrigation District;
- Saucelito Irrigation District; and
- Terra Bella Irrigation District.

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 a 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 (SOI).

Senate Bills 610 and 221 (SB 610 and SB 221). New legislation took effect in January 2002 that requires increased efforts to identify and assess the reliability of anticipated water supplies and envisions increased levels of communication between municipal planning authorities and local water suppliers.

SB 221 requires that cities and counties impose a new condition of tentative subdivision approval, requiring that the applicant provide a detailed verification from the applicable water supplier that a sufficient water supply will be available before the final subdivision map can be approved. It applies to subdivisions of 500 units or more and projects that would employ 1,000 or more workers. This requirement also applies to increases of ten percent or more of service connections for public water systems with less than 500 service connections. The law defines criteria for determining *sufficient water supply* such as using normal, single dry, and multiple dry year hydrology and identifying the amount of water that the supplier can reasonable rely on to meet existing and future planned uses. Rights to extract additional groundwater if used for the project must be substantiated.

SB 610 amends the Urban Water Management Planning Act to require additional information in Urban Water Management Plans if groundwater is identified as a source available to the supplier. The information required includes a copy of any groundwater management plan adopted by the supplier, a copy of the adjudication order or decree for adjudicated basins, and if non adjudicated, whether the basin has been identified as being over drafted or projected to be over drafted in the most current DWR publication on that basin. If the basin is in overdraft, that plan must include current efforts to eliminate any long term overdraft. A key provision in SB 610 assures that water supply issues are thoroughly considered as part of the environmental review process, but only for the larger projects as described above. These projects must include a water supply assessment, containing specified information from the local public water supplier likely to provide water in the project area.

Assembly Bill 2572. This bill, passed in 2004, requires, with certain exceptions, that all urban water suppliers to install water meters on all municipal and industrial water service connections that are located in its service area on or before January 1, 2025. The provisions of the bill supersede and preempt all enactments, including charter provisions and amendments thereto, and other local action of cities and counties, including charter cities and charter counties, and other local public

agencies that conflict with the provisions of AB 2572, other than enactments or local action that impose additional or more stringent requirements. The bill authorizes urban water suppliers to recover the cost of providing services related to the purchase, installation, and operation of a water meter from rates, fees, or charges.

U.S. Environmental Protection Agency. 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.

State Department of Health Services. A major component of the State Department of Health Services (DHS), Division of Drinking Water and Environmental Management is the Drinking Water Program (DWP) that regulates public water systems. DHS is responsible for regulating public water systems and small water systems and monitoring them for compliance with the State Water Code and Federal Drinking Water Quality requirements. Additional regulatory responsibilities include the issuance of operational permits, routine water system inspections, evaluation of water quality monitoring data, and follow up compliance activities. DHS provides oversight and enforcement for those systems in Tulare County with more than 200 connections. Other functions include supporting and promoting 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.

Tulare County Health and Human Services Agency (HHSA). HHSA, which has been granted primacy by the DHS, is responsible for the administration and enforcement of the Safe Drinking Water Act involving those systems in Tulare County with less than 200 connections.

California Department of Water Resources. The California Department of Water Resources 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. It suggests

ways of managing demand and augmenting supply to balance water supply with demand.

Existing Conditions

Demands for water resources within Tulare County are met from 4 major sources. These sources include groundwater, local streams and rivers, imported surface water and imported surface water by exchange. The predominant water supply for domestic use within the unincorporated communities of Tulare County is the individual system. Principal among these systems are those that utilize groundwater that is, in most cases, untreated. Large and small water systems that provide domestic water service to unincorporated communities in the County are typically operated and managed by CSDs, IDs, PUDs, and mutual water companies. These Districts are self governing and are not subject to County control. Although these Districts are not subject to County control, the County must coordinate its plans for growth and development with these districts in order to assure that services can be provided on a timely basis to areas planned for development, including areas within designated Urban Development Boundaries (UDBs).

Figure 7-1 shows a map of Tulare County with the locations of unincorporated communities. Table 7-1 identifies the urban water supplier for each community (as shown on Figure 7-1) including source of water supply, whether service is metered or flat rate, and existing (2003) population.

Figure 7-1. Tulare County Unincorporated Communities

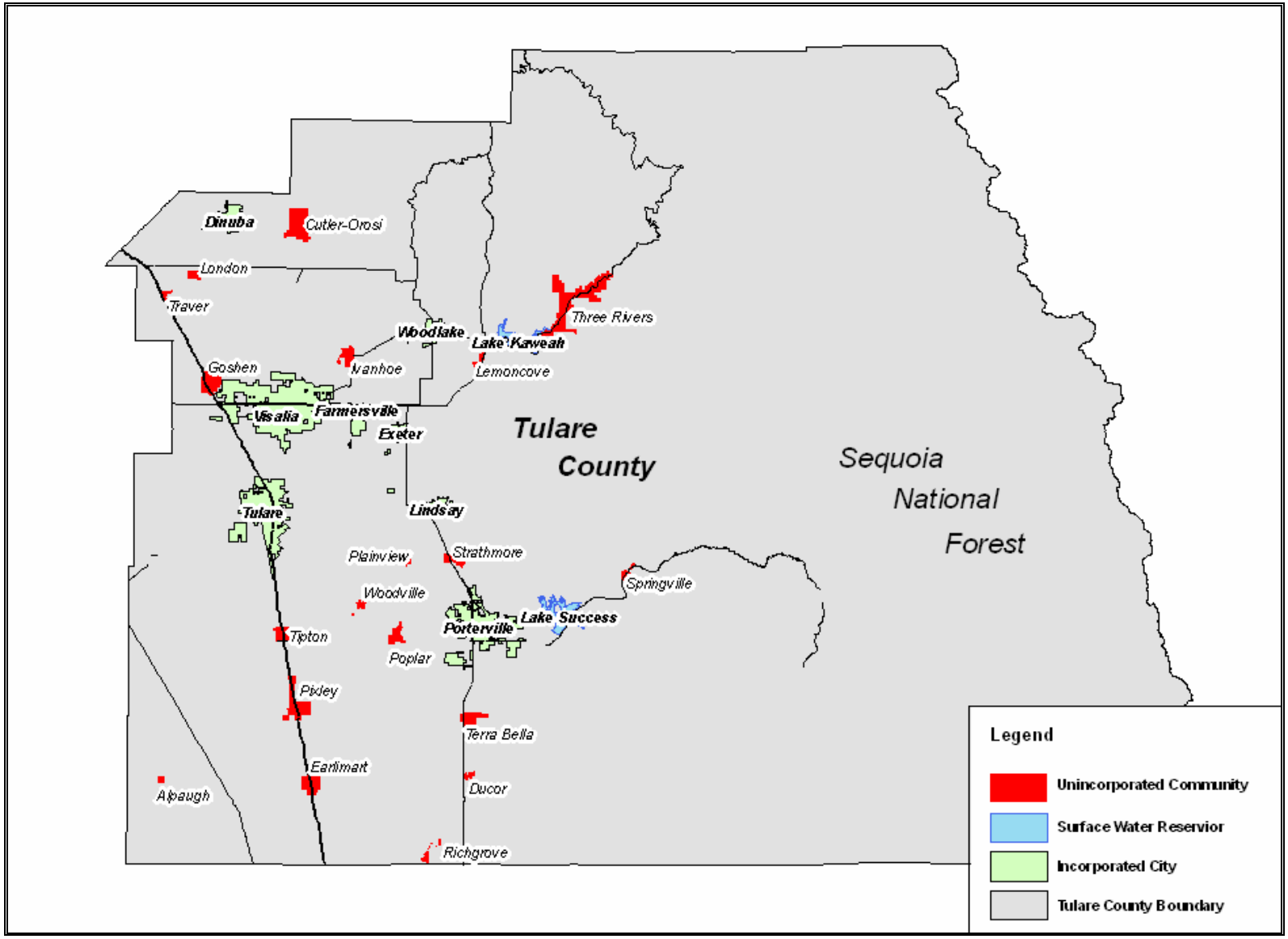


Table 7-1. Community Urban Water Suppliers

Community	Urban Water Supplier	Water Supply Source	Metered/ Flat Rate	Existing Population[1]
Alpaugh	Alpaugh JPA	Groundwater	Flat Rate	761
Cutler	Cutler PUD	Groundwater	Flat Rate	4,962
Orosi	Orosi PUD	Groundwater	Metered	8,086
Ducor	Ducor CSD	Groundwater	Flat Rate	504
Earlimart	Earlimart PUD	Groundwater	Flat Rate	7,393
Goshen	Cal Water (Private)	Groundwater	Metered	2,473
Ivanhoe	Ivanhoe PUD	Groundwater	Metered	4,524
Lemon Cove	Lemon Cove SD	Groundwater	Metered	251
London	London CSD	Groundwater	Flat Rate	1,848
Pixley	Pixley PUD	Groundwater	Flat Rate[2]	2,662
Plainview	Plainview MWC	Groundwater	N/A[3]	822
Poplar-Cotton Center	Poplar CSD	Groundwater	Flat Rate	1,789
Richgrove	Richgrove CSD	Groundwater	Flat Rate[4]	2,723
Springville	Springville PUD	Surface Water	Metered	2,755
Strathmore	Strathmore PUD	Groundwater/ Surface Water	Metered	2,800
Terra Bella	Terra Bella ID	Groundwater/ Surface Water	N/A[3]	3,714
Three Rivers	Three Rivers CSD	Groundwater/ Surface Water	Varies	2,300
Tipton	Tipton CSD	Groundwater	Flat Rate	1,809
Traver	County Service Area 1	Groundwater	Flat Rate	732
Woodville	Woodville PUD	Groundwater	Metered	1,623

Notes: 1) Source: Tulare County Association of Governments (TCAG).
2) Approximately 320 of 800 connections are metered according to District Staff.
3) Information Not Available.
4) Commercial connections (19) are billed under a metered rate structure. District is currently in the process of installing water meters on all connections.

In addition to the communities identified in Figure 7-1 and Table 7-1, there are additional unincorporated urban areas of Tulare County that are not formally designated as "communities". Some of these other unincorporated urban areas are listed below:

- Allensworth;
- Delft Colony;
- East Orosi;
- East Tulare Villa;
- Lindcove;
- Monson;
- Seville;
- Sultana;
- Teviston;
- Tonyville;
- Waukena;
- West Goshen; and
- Yettem.

The above areas, in addition to other unincorporated urban areas of the County, are provided water through various agencies including County zones of benefit, County service areas, CSDs, and mutal water companies, etc. Examples include the East Orosi CSD, California Water Service Company, River Island Water Company, Triple R Mutual Water Company, California Hot Springs Water Company, and Williams Mutual Water Company. Water infrastructure data for these smaller unincorporated areas is summarized where the information is available, i.e., provided by agency.

The following paragraphs describe the current state of domestic water infrastructure in the unincorporated communities of the county, as listed in Table 7-1. Water system information for the smaller urban areas of the County (not formally designated as communities) is provided where the information has been made available for the preparation of this report.

Alpaugh Joint Power Authority

Alpaugh's problems with water have long been documented. The Alpaugh community water system had ongoing water quality problems that included high levels of arsenic and was deemed unsafe for cooking and drinking. The Alpaugh Joint Powers Authority (AJPA) has since addressed many of the health issues in regard to unsafe drinking water and the Department of Health Services rescinded a boil water order as of January 10, 2005.

The current infrastructure for domestic water service is the result of two former systems, previously owned and operated by the Alpaugh Irrigation District and Tulare County Water Works District (TCWWD) No. 1. When the two Districts formed the AJPA, rights to the domestic water infrastructure were relinquished to the Authority, which is now a separate governing body. A new well, referred to as Well #10, was added to the AJPA system through funding obtained from a U.S. Department of Agriculture (USDA) grant and loan. The AJPA expects to have an additional well drilled, at which time Well #10 would function as the Authority's backup well.

Much of the AJPA water distribution system was constructed over 70 years ago. The pipeline system consists of steel, transite, and plastic pipe varying in size from 2 to 8 inches in diameter. Most of the AJPA water system is un-metered; only the Alpaugh School and Western Farms have water meters, although they are currently being charged flat rates. Although the water system is currently un-metered, AJPA staff has indicated that system will be metered in the future. Prior to the formation of the AJPA, the TCWWD requested funding from the Water Conservation Grant Program in order to install new water meters for all service connections, in order to better manage the amount of water use in the community. Currently water users are charged a flat monthly rate that does not promote water conservation.

The AJPA water system currently supports 295 connections including one industrial connection, a school connection, and 293 residential connections.

Since its formation, the AJPA has received over $4 million in grants and loans from the USDA, and the Department of Water Resources (DWR), to improve the community's water system. The funds are

being used to construct several improvements to the community's water system including drilling a new well, replacing several miles of water mains, and constructing a new water tank.

The new well on the edge of town, Well #10, produces water that is safe to drink by government standards as indicated by State health officials. The arsenic maximum standard became more stringent as of January 2006 (10 PPB, previously 50 PPB).

While the Authority is unable to support additional connections at this time, ongoing system improvements will improve the system capacity and allow for additional service connections within the time horizon of the General Plan.

Cutler Public Utility District

Cutler's water supply, which is chlorinated but not treated, is derived from two deep underground wells, referred to as well #5 and well #6. District staff indicated the total production efficiency for well #5 is 1,100 GPM and 1,000 GPM for well #6, for a total production capability of 2,100 GPM, or 3.024 MGD. The District also has an elevated water storage tank with a capacity of approximately 50,000 gallons. Currently, two wells (wells #3 and #4) are not in service due to high nitrate levels. Two new wells are expected to be brought online in the near future.

The District has 3 active grant/loan funding applications being processed, including an SRF Loan for which an NOFA has been issued. The District is securing funding for a water system rehabilitation project, a blending tank project, and to bring additional wells on-line. The blending tank project would mix water from one of the new wells (well #9) with wells #3 and #4 (which are currently not in service due to high nitrate levels). By mixing the water supply from wells that produce acceptable water quality with those which have contaminant levels which exceed maximum levels, the District's water supply capabilities will be increased, while bringing the water quality to within acceptable standards before entering the distribution system.

Lovell High School, which is operated by the Cutler-Orosi Joint Unified School District, has requested water service from the Cutler PUD. The District plans to provide the school with water service pending the approval and implementation of the blending tank project.

The District indicated the community water system (as of September 2004) supports 1,032 total connections, including 3 industry packing houses and one box plant. District staff has indicated that there are only thirteen connections that have a water meter; the District currently charges a flat rate for residential water service connections.

The District currently has a water conservation plan that limits when residents can water lawns and wash vehicles. Residents who violate the water conservation rules are warned on the first offense and fined for any additional offenses.

Based upon available information, the District's water system is currently operating at or near its capacity and cannot support additional connections at this time. The amount of developable land available, including the availability of infrastructure, are two factors that have limited community growth from occurring, i.e., affordable housing objectives and commercial enterprise. The District's plans to construct several upcoming water system improvement projects will significantly increase its ability to provide service to proposed development projects.

Orosi Public Utility District

Orosi's water supply is derived from 4 deep underground wells located at various sites throughout the community. Three of the wells discharge into 10,000 gallon hydro-pneumatic pressure tank, and one well discharges into a 750,000 gallon storage tank with booster pumps that discharge into a hydro-pneumatic pressure tank. The water from each supply source is chlorinated and then distributed throughout the system. Currently, 40% of the District's water distribution system consists of asbestos-concrete pipe ranging in size from 2″ to 6″ in diameter. Ultimately, the District has indicated the need to replace the existing AC lines with 8″ ductile iron piping. District staff also indicated the production efficiency of the wells ranges between 520 and 850 gallons per minute (GPM) and that the 4 wells have a total maximum production efficiency of approximately 2,930 GPM, or 4.22 MGD. Two additional existing wells are currently inactive due to nitrate contamination. A new well (#10) is expected to be brought online in the near future.

The District indicated that the community water system (as of October 2004) supports 1,788 total connections including 1,639

residential connections, 132 commercial connections, 3 agricultural connections, and 14 connections which are inactive. The District's water system also supports 164 fire hydrants located throughout the community. The Orosi PUD water system has been fully metered as of January 1, 2005. Since then the District has billed customers based upon a metered usage. Water consumption data provided by District staff indicated that there was an immediate decrease in domestic water usage as a result of metering. Prior to water metering, the District experienced a peak month flow of 62.742 MG in July 2004 and a max day flow of 2.172 MGD. After metering was implemented by the District, a peak flow rate of 48.102 MG in July 2005 was observed with a max day flow of 1.706 MGD. This equates to a reduction of 23.3% in the peak month flow and a 21.5% reduction in the max day flow.

Based upon available information, it is evident that the water system has excess capacity to accommodate additional growth and development within the community. The construction of a regional water treatment plant would enhance the District's ability to accommodate future growth, assuming rights to the surface water would be available to the District.

Ducor Community Services District

The Ducor Community Service District water supply originates from 2 underground wells with no use of surface water. The community water system supports approximately 150 service connections including a mix of residential and commercial uses.

Based upon available information, it is estimated that the community water system is operating at or near its capacity. Based upon discussions with District staff, domestic water needs associated with projected General Plan population growth could be met with concerns. District staff indicated that capacity issues could be solved within the time horizon of the General Plan.

Information reported in an October 2003 Visalia Times Delta article describes recent problems Ducor has encountered with their water system. When residents noticed yellow, granite-filled water being pumped out of the main well, further inspection revealed that the well casing was cracked, leaving the districts primary well (south well) out of service. That well is one of 2 wells that supplies all water users within the district. A broken primary well forced the

district to rely on its sole backup well, which is very old, only operating at 25% of its initial capacity, and was considered as in "imminent danger of failing." The district had already spent thousands of dollars repairing the northern (backup) well, leaving no money left for emergency repairs to the south (primary) well.

To ensure the community did not go without water, it was reported that the Tulare County RMA issued a loan (approximately $35,000) for the district to make emergency repairs to Ducor's primary well. The loan was to pay to repair the well before Ducor received a $497,000 grant from the USDA to drill a new well. It was necessary to repair the cracked casing of the primary well, since the backup well needed to be out of service during the installation of the new well. The district also has a connection to a local industrial plant's (Dole Cold Storage) water well, that is available in emergency situations.

Upon the completion of the new well, the district abandoned the current backup well and relies on the repaired southern well for a backup. The district currently operates 2 wells, each with efficiencies of 200+ gpm. The district's water supply is automatically chlorinated but not treated. Water is pumped from the wells into two 220,000 gallon elevated tanks, that gravity feed water into the distribution system.

The district indicated that water lines in the community are old and are in need of rehabilitation and/or replacement. According to the district, leaks occur frequently and are repaired on an as needed basis. Meters are installed throughout the entire system, but are currently not in service, as the district cannot afford to have the meters calibrated and read, so flat rates for water are currently being assessed. The District indicated that additional service capacity is still limited and only expect to provide service to properties within their current district boundary.

Earlimart Public Utility District

Earlimart's water supply is derived from 4 600 feet deep underground wells, which pump at a consistent water level of approximately 250 feet. The 4 wells provide high quality water requiring no chlorination or treatment. The 4 wells have a total maximum production efficiency of 3,300 GPM, or 4.75 MGD.

The community water system supports 1,485 total service connections including 57 commercial connections, 1,424 residential connections, and 4 school connections. In 2000, Earlimart PUD started requiring water meters for all new development; however, very little development has occurred since then indicating that the majority of the Earlimart PUD's water system is un-metered. Water meters are also to be installed when properties change ownership.

Based upon available information, it is estimated that the community water system is operating at approximately 88% of its capacity. The Earlimart PUD's water system will need additional capacity to accommodate population increases associated with the build-out of the general plan. These additional supplies would likely come from additional groundwater wells.

California Water Service Company – Goshen Water System

The California Water Service Company (Cal Water) operates a water supply and distribution system that serves the community of Goshen. Cal Water's water supply is derived from over 70 deep water wells (including water delivered to the City of Visalia).

There are serious concerns for the water quality of the local Goshen wells. Cal Water operates 4 wells in or near the community of Goshen. Three of the 4 wells are out of service due to water quality issues. Nitrate levels have caused Cal Water to blend wells to keep them open. The Goshen water system is metered, which promotes water conservation.

Conversations with Cal Water staff exposed some concerns for future growth in the area. Water Company staff indicated that with the projected population growth, the water supply is adequate with concerns. The Goshen area has a maintenance program that should keep pace with current population growth. The concerns are in regard to higher than historic growth as well as water quality concerns. Additional water supply to accommodate future growth would likely be derived from additional groundwater wells.

Ivanhoe Public Utility District

The Ivanhoe PUD's water supply is derived from six deep underground wells that pump at a consistent water level between 250 and 350 feet. According to Ivanhoe PUD staff, the six wells

provide an ample excellent water supply requiring no chlorination or treatment. Ivanhoe PUD staff indicated that the production efficiency of the wells ranges between 500 and 1,000 GPM and that the six wells have a total maximum production efficiency of approximately 3,600 GPM, or 5.18 MGD. Wells are located at various sites throughout the community.

Ivanhoe PUD staff indicated that the community water system (as of August 2004) supports 1,114 single and multi-family residential connections. The Ivanhoe PUD was unsure exactly how many commercial connections were on the system, but estimated that there are approximately 1,200 total connections to the system. The Ivanhoe PUD water system has been fully metered since 1991. Since then the Ivanhoe PUD has billed customers based upon a metered usage. Water consumption data indicated that there was an immediate decrease in domestic water usage occured as a result of metering.

Based upon available information, it is estimated that the community water system is operating at approximately 50% of its capacity. The community water system has excess capacity to accommodate projected general plan growth. Additional water supply needed to accommodate future growth would likely be derived from additional groundwater extractions.

In 2004, the Ivanhoe PUD received a $2 million State Revolving Fund (SRF) loan, a portion of which was used to replace old water lines with new water lines and relocate the lines from alleys to streets. Approximately $1.4 million in water line replacements has been completed. The remaining $600,000 was to be used to bring one new well online. Since the Ivanhoe PUD's water system has sufficient capacity, the Ivanhoe PUD's Board voted not to drill a new well at this time. It is anticipated that the $600,000 that was to be used for a new well will be returned to the State.

Lemon Cove Sanitary District

The Lemon Cove SD's water system consists of a single well with a two horsepower submersible pump, a 30,000 gallon storage tank, booster pump, a 4,000 gallon pressure tank, and the water distribution system. The water system has no permanently installed treatment at this time. In addition, there is no backup water supply

on the Lemon Cove SD's system. There are approximately 50 active domestic water service connections within the Lemon Cove SD.

According to the Sanitary Survey Report completed by the County of Tulare Health and Human Services Agency (HHSA), the water system appears adequate to meet the needs of the Lemon Cove SD. The County Health Department is unaware of any complaints concerning water shortages or pressure problems. Fire hydrants on the Lemon Cove SD's system are used to fill tanker type fire trucks with no apparent negative effect to the system.

Items that were brought to the attention of the operator to bring the water system into compliance during the 2001 inspection by the County Health Department included repairing the leak at the turbine pressure tank site.

According to the Lemon Cove SD's 2004 Consumer Confidence Report, water samples taken in December 2004 contained nitrate levels of 55 mg/L, which exceeds the maximum contaminant level (MCL) of 45 mg/L. The Lemon Cove SD has been issued a compliance order (No. 04-95) to address the elevated nitrate levels,.

The Lemon Cove SD's water system is fully metered. The Lemon Cove SD's implementation of a metered water rate structure is indicative of the Lemon Cove SD's desire to promote water conservation, and continue to provide effective water service to its residents.

Based upon available information, improvements to the community water system would be needed in order to support growth associated with the build-out of the general plan. These improvements would include addressing existing water quality problems, the installation of a backup well, and additional supply and distribution system improvements. Additional water supplies would likely be derived from groundwater sources.

London Community Services District

The London CSD water system consists of three active wells and one hydro-pneumatic pressure tank. The water system has no permanently installed treatment at this time, as it currently meets federal drinking water standards. London CSD staff has indicated that there are approximately 430 connections to their water system.

London CSD staff has indicated that the water system was constructed in 1952 and experiences minor leaks. Water system leaks have the potential for causing cross contamination problems. The district continues to make repairs on an as needed basis. The district's water deliveries are currently billed under a flat rate structure.

The London CSD received Proposition 13 funding in the amount of $98,156 to prepare an infrastructure rehabilitation feasibility study to detect and evaluate leaks and to determine the feasibility of replacing the distribution system. The feasibility study initiated a grant/loan proposal through the State Revolving Fund Program for construction of a new domestic water well and hydro-pneumatic tank, along with distribution system improvements. The London CSD water system is currently un-metered.

Specific capacity information for the community's water system is not available; however, it is likely that the London CSD would need to expand its water supply and improve the distribution system to support any significant growth associated with the build-out of the general plan.

The districts ability to provide water to support future development appears to be limited by the condition of the current infrastructure. However, the district is currently addressing this issue through applying for State funding to improve its water system. The district is confident that their water supply (three wells) could support additional development; however, the availability of the infrastructure to deliver the water is limited until improvements are implemented. Water needed to accommodate growth in the community would likely be derived from groundwater sources.

Pixley Public Utility District

Pixley PUD's water supply is derived from 4 deep underground wells. The 4 wells in operation have a total maximum production efficiency of approximately 2,700 GPM, or 3.88 MGD.

As indicated by the Pixley PUD's Engineer, 3 of the existing 4 wells exceed the acceptable arsenic level for drinking water that became effective January 2006 and the water supply system will require treatment or replacement of wells to meet current water quality standards.

Pixley PUD staff indicated that there are slightly more than 800 hookups to the water system including 25 commercial connections. Approximately 320 of the residential connections are metered.

Based upon available information, there is only sufficient water supply to meet existing domestic demands without considering fire flow requirements. The Pixley PUD Engineer indicated that no additional connections could be supported by the water system when considering fire flows and the possibility of the maximum producing well being out of service. For this reason, the Pixley PUD Engineer concluded that additional wells will be required in order to increase capacity and that fire flow requirements could be met with storage tanks. The Pixley PUD Engineer also noted that the existing water system includes many 4-inch and 6-inch diameter lines, that may not be suitable for peak and fire flows.

Plainview Mutual Water Company

The Plainview Mutual Water Company (Plainview MWC) is a small organization that provides water for the residents of Plainview, located west of Strathmore. Based upon discussions with Plainview MWC staff, there are significant concerns with respect to population growth in the future. The Plainview MWC is currently rebuilding their system as funds become available. Many of the existing pipes and water supply facilities are dated. The concern for future growth is due in part to the existing capacity issues and deterioration of the current water system.

Plainview MWC's water is derived from groundwater sources. Information regarding the number of wells and associated production efficiencies has not been provided. It is likely that the Plainview MWC will continue to rely on groundwater sources to support any future growth.

Poplar Community Services District

Poplar CSD's water supply, which is chlorinated but not treated, is derived from 3 active underground wells with a total maximum production efficiency of 2,280 GPM or about 3.3 MGD. The Poplar CSD also has an elevated water storage tank with a capacity of 300,000 gallons.

Water meters were installed in 1979, but the Poplar CSD has indicated that they need to be serviced before being put back into use. For this reason, the Poplar CSD uses a flat rate structure to bill its customers. Based upon information provided by Poplar CSD staff, there are approximately 640 connections to the Poplar CSD water system.

Based upon the District's 2004 Annual Drinking Water Quality Report, there are no indications that the Poplar CSD's water supply has contaminant levels exceeding the maximum contaminant levels. There is no evidence suggesting that the Poplar CSD's water supply does not meet Federal drinking water standards.

Based upon available information, the community water system has apparent excess capacity to accommodate projected general plan growth. It is likely that the Poplar CSD would continue to rely on groundwater sources in order to accommodate growth in the community.

Richgrove Community Services District

The Richgrove CSD water system consists of 3 active wells (upon the completion of an additional well recently constructed). The Richgrove CSD's water is chlorinated at the well sites, but has no permanently installed treatment at this time. Richgrove CSD staff has indicated that there are 523 connections to their water system. There are 19 commercial customers that receive metered water from the Richgrove CSD. Residential connections are currently un-metered; however, the Richgrove CSD received a water meter retrofit grant in the amount of $119,000 from the Department of Water Resources and is currently working to install meters throughout the community. A fully metered water system will help with water conservation and minimize over usage and/or wasting of water.

Specific capacity information for the community's water system is not available; however, a new well was recently added to the system. For this reason, it is likely that the community water system has excess capacity, but the level that it will meet projected growth associated with the build-out of the general plan cannot be determined at this time. It is likely that the Richgrove CSD would continue to rely on groundwater sources in order to accommodate future growth in the community.

Springville Public Utility District

The Springville PUD water supply is derived from surface water obtained from the Tule River. The Springville PUD operates and maintains a domestic water treatment facility that processes the surface water before entering the Springville PUD's distribution system. The water system supports about 410 total connections (about 390 are currently active), all of which are metered.

Based upon information provided by the Springville PUD, current water system demands average approximately 0.30 million MGD or 210 GPM. The Springville PUD estimates its current water system capacity at 1.5 MGD, or 1,040 GPM, indicating that there is excess capacity available for additional connections. The District's water system also includes 2 storage tanks with capacities of 150,000, and 200,000 gallons.

Based upon available information, it is estimated that community water system is operating at approximately 30% of its capacity. The community water system has excess capacity to accommodate projected general plan growth. Based upon information provided by the District Engineer, the District is currently pursuing the addition of more storage to its water system in an effort to optimize the water rights capabilities of the District. The District has sufficient surface water rights to continue using surface water in order to accommodate future growth in the community. For this reason, the District will continue to rely on surface water sources as its primary source of potable water deliveries to the community.

Strathmore Public Utility District

Strathmore's water supply is derived from a sub-contract through Tulare County for water made available from the Cross Valley Canal through an exchange with the Arvin Edison Water District. A water filtration plant was constructed in Strathmore for treatment of the surface water from the Cross Valley Canal. The Strathmore PUD constructed the plant in a joint venture with the Lindsay-Strathmore Irrigation District (LSID). LSID has 22.8% ownership of the plant, and the Strathmore PUD has the remaining ownership. The Strathmore PUD also has an underground water well that is used to supplement the District's surface water supply and as a back-up water supply. Based upon information provided by the District, during the peak month, the District's metered water

deliveries total about 0.62 million gallons per day (MGD), or 430 gallons per minute (GPM). Based upon information provided by Strathmore PUD staff, the water system supports about 455 connections.

As indicated by the District's Engineer, pending developments near Avenue 196 and S.R. 65 would max out the District's water system capacity, and further expansion of water service would require the District to acquire additional water rights. The District's continued reliance on surface water deliveries to support growth within the community will depend on the availability of additional water rights that can purchased by the District.

Terra Bella Irrigation District

Terra Bella ID operates 2 separate water systems, one system that receives surface water from the Friant Kern Canal, and is treated before entering the distribution system. This system is the primary source for domestic water service within the urban area of the Terra Bella ID. This system has 2 standby wells that are used for backup supplies. Based upon information provided by Terra Bella ID staff, there are approximately 700 connections which receive treated surface water. The Terra Bella ID water treatment plant was constructed in 1998 and was constructed to allow for additional capacity (approximately double according to staff) above and beyond what the expected 1998 demands would be. Terra Bella ID has a water contract with the U.S. Bureau of Reclamation to receive 29,000 acre feet of water per year from the Friant Kern Canal (water that is used for both domestic and irrigation purposes). Terra Bella's ID treated domestic water system is in good operating condition, and could be expanded to support 600 to 700 additional connections, according to staff.

Terra Bella ID also operates a second water system that has a primary function of providing irrigation water to the outlying rural areas of the community. Water for this rural water system is supplied from a series of underground wells and surface water from the Friant Kern Canal. This water is untreated. There are also domestic water connections to the Terra Bella ID's rural (irrigation) water system that primarily serve rural residential homes related to agricultural. The water supplied by this system does not meet Federal drinking water standards, and is therefore considered to be non-potable. The Terra Bella ID sends out a quarterly letter to all

residents that receive tap water from this system indicating that the water does not meet Federal drinking water standards, is considered to be non-potable, and shall not be used for drinking or cooking. The potable water source for such connections is considered to be bottled water.

Three Rivers Community Services District

There are over 35 private water companies in Three Rivers. Improvement District 1 (previously Alta Acres), which falls under the jurisdiction of the Three Rivers CSD, is the largest water district within the Three Rivers CSD boundary. Improvement District 1 has approximately 90 connections to their water system.

Improvement District #1 is operated by volunteers including parcel owners and residential users of the system. The ever increasing layers of regulations to protect the quality and availability of water is creating the inability of volunteers to comply with these regulations as a result of very complex licensing requirements imposed upon those who are certified to perform water quality tests and evaluate their results. During the summer the district is forced to access its river well which increases the layers of regulatory compliance and cost. The district is exploring ways to completely eliminate the use of its river well.

Improvement District #1 will need additional wells in the near future. All of the existing wells are on private land and all of the future wells will have to be on private land. Over the years just as the district has all benefited from the services of volunteer labors and committee members and has also benefited from the parcel owners who have allowed the district to drill wells on their property for the benefit of the entire district. The District will be identifying possible well sights in the future and looks forward in cooperation of the parcel owners on whose land these sights might lay. These new wells will continue the district's internal water independence and free it from the need to access its river well. This, in turn, will keep its increasing regulatory and compliance costs in check.

The District's pipelines, pumps, wells and storage facilities are all old and deteriorating rapidly. Some of the infrastructure is over 40 years old. It has been repaired and patched to the point of near exhaustion. Without grants, repairs could come to as much as

$10,000 dollars per parcel. The district, with support from Three Rivers' CSD, has applied for a $1.1 million loan/grant from the State of California and been designated a Level D priority, a relatively high priority.

Tipton Community Services District

Tipton's CSD water supply is derived from two active underground wells. The Tipton CSD has two additional wells which are currently inactive; one is currently non-operational due to oil contamination, and the other has been abandoned as a result of nitrate contamination. The two wells currently in use (referred to as well #2 and well #4) provide high quality water requiring no chlorination or treatment. Well #2 can produce water at a rate of 700 GPM, and well #4 can produce water at a rate of 800 GPM. Together the wells have a total maximum production efficiency of 1,500 GPM, or 2.16 MGD.

Tipton's CSD community water system currently supports 554 total service connections including 58 commercial connections and 496 residential connections. The Tipton CSD recently started requiring water meters to be installed for all new development projects although the Tipton CSD currently continues to charge a flat rate for water service. Based upon results other water districts have experienced by going to a metered water rate schedule, it is likely that metering will cause the usage to decrease.

Based upon available information, the community water system is operating at or near its capacity; however, Tipton CSD has plans to bring a new well online in the near future, in order to increase capacity. Tipton's CSD recently received a grant/loan in the amount of $1,833,865 that will be used to implement several water system improvements including well drilling, water line replacement, a pipeline replacement program, and maintenance and improvements to existing well sites.

County Service Area No. 1 – Traver Water System

Tulare County Zone of Benefit – Traver Water System is provided oversight by the County of Tulare Resource Management Agency. Traver is located in Tulare County Service Area No. 1 along with the communities of El Rancho, Delft Colony, Seville, Tonyville, and Yettem.

Based upon discussions with Resource Management Agency staff the future water supply for Traver, based on the projected General Plan populations, is adequate with concerns. The water supply for Traver is derived from groundwater sources, which will likely continue to the primary source of potable water deliveries in order to accommodate growth in the community.

Woodville Public Utility District

Woodville's PUD water supply is derived from two deep underground water wells, that have a total maximum production efficiency of approximately 1,500 gpm, according to information provided by the Woodville PUD. Based upon information provided by Woodville PUD staff, the Woodville PUD water system supports about 480 connections.

Woodville's PUD water system is 100% metered, which helps promote water conservation. Woodville's PUD water system has no elevated storage tank, and operates with hydro-pneumatic pressure tanks.

Based upon available information, the community water system has apparent excess capacity to accommodate projected general plan growth. It is likely that Woodville, PUD would continue to rely on groundwater sources in order to accommodate growth in the community.

Allensworth Community Services District

The water supply for the community of Allensworth comes from two wells located east of the town. The older well, referred to as well #1, was constructed in the late 1960s/early 1970's , and operates with a 10 hp pump, and acts as the system backup well. Well #2, constructed as a part of the 1994-2000 USDA water project, operates with a 20 hp pump and is the primary well providing water to the town. Well #2 was put into operation in 1999.

Water is pumped from wells to a storage tank with a capacity of 46,000 gallons. The district indicated that the tank was recently cleaned and removed of sediment at the bottom of the tank. Furthermore, the tank has been in operation for over 24 years and is showing signs of deterioration such as rust pockets; it will need additional maintenance in the near term. From the storage tank

water flows through 3 booster pumps into a 5,000-gallon pressure tank then into the distribution system that delivers the water to consumer's taps.

Allensworth CSD received grant and loan assistance from the USDA in 1994 to complete a water system rehabilitation project. The project consisted of construction of a new well with a 20 hp pump, new booster pumps and pressure tank, new service lines and water meters, new fire hydrants, and new PVC water mains, and other improvements. Most water mains were upsized from 2", 3", and 4" to 6". The district indicated that due to a shortage of funding, 2-inch water mains still exist along portions of Avenue 24, Avenue 28, and Avenue 32E. The new water system was designed to accommodate 10 years of growth at annual rate of 4%. Although Allensworth has historically had problems with arsenic contamination in their water supply, water quality tests on the current water supply have met County and State Health Department regulations pertaining to MCLs. The district does not regularly chlorinate their water supply but chlorinates on an as needed basis, such as when a break or leakage in the line is discovered.

The district indicated that testing of the new system revealed that fire-flow pressures ranging between 750 gallons per minute (gpm) and 1,000 gpm were observed, meeting the County standard of 500 gpm for single family residential dwelling units.

Although the water project has provided a plentiful and safe drinking water supply to the community, the district is currently encountering problems with the power supply to the well pumps. The district is currently investigating solutions including the installation of soft starters on the pumps to help correct the problem. The district indicated that the well pumps fail to operate approximately 3 to 5 times per month, requiring either a manual reset of the pumps, a site visit by the pump consultants to correct the problem, or a site visit by Southern California Edison Company (SCE) to correct any power supply problems. When the pumps fail to operate, the community is often left without water for hours at a time, which causes the local school to close in some instances. The district is currently under a building moratorium until the well pump failure problems are corrected.

There are currently 117 total metered connections to the water system, with 85 current users. The 32 meters that are not currently in service include potential service to undeveloped and/or vacant

properties. There are two major commercial water users on the ACSD water system: the local school and Colonel Allensworth State Historic Park. The Colonel Allensworth State Historic Park has constructed a private well for irrigation purposes, but still utilizes the districts water system for domestic use.

The district has indicated that there are several factors contributing to high amounts of water demand within the community including the use of the domestic water system for irrigation purposes, high dwelling unit occupancy rates (ranging between 5 and 7 persons per dwelling unit), and double dwelling (more than one mobile home or trailer using the same water meter including persons allowing another mobile home to use water temporarily by hose or other means).

Allensworth CSD has adopted policies prohibiting the use of domestic water supply for irrigation purposes, and implemented water overuse charges, although the district has indicated that this has been ineffective in detouring users from using water for irrigation purposes. The district also has adopted ordinance 81-1 article 4, section 4-01 (a) which states that every unit shall be required to have its own service connection. The district assesses double monthly basic rates for double dwellers.

East Orosi Community Services District

The East Orosi CSD was contacted; however, the CSD was only willing to provide very limited information with regard to their water system. The districts water system currently supports 106 residential connections, and 2 commercial connections (the local store, and church). The district indicated that they were previously under a building moratorium and did not know if the moratorium was lifted. The district also indicated that the water system is currently at or near maximum capacity. It is not likely that the district can support additional connections to their system without significant research and further planning.

Ponderosa Community Services District

Current Ponderosa CSD water sources include 3 wells and a lake reservoir. Two of the water wells are located in the southern (Holby) portion of the community, one well is located in the

northern (Fawn) portion of the community, and the lake is located in the central area of the community.

The Ponderosa water system currently supports 123 service connections, with an estimated 173 water service connections projected for year 2025. Ponderosa CSD water users are billed under a flat rate structure.

The Ponderosa CSD adopted a long-range strategic plan in August 1999, with the latest revision completed in March 2004. With regard to water infrastructure, the following immediate needs were identified:

- Develop financial plans needs plan;
- Grant availability;
- Local and/or with external assistance;
- Needs and cost estimates;
- Future water source(s);
- Storage requirements (tanks);
- Infrastructure replacements/additions;
- Automation requirements;
- Structural additions/replacements;
- Equipment needs;
- Well casing replacements;
- Well depth adequacy;
- Need for dry barrel hydrants ($3,500 per unit, installed);
- Loan availability rates and origination costs; and
- Determine immediate system needs and prioritize.

The following short-term needs were also identified in the long-range strategic plan:

- Need for additional fire hydrants in system; and

- Complete grant preparation.

The following long-term needs were also identified in the long-range strategic plan:

- System upgrade and modernization;
- Future acquisition of water storage tank property; and
- Prepare/identify future financial requirements (needs/source).

Implementation of the long range strategic plan will be an ongoing effort by the Ponderosa CSD. Priorities may change based on several factors including demand, funding availability, needs of the community, etc. However, the long-range plan provides guidance in the operation of the needed services of the community.

Additional Considerations

This section summarizes additional considerations with regard to domestic water service within the unincorporated areas of Tulare County.

County Service Areas

In addition to the water systems that are operated by special districts that are separate governing bodies from the County, the County operates some small systems through County Service Area governance. There are two County Service Areas, designated as CSA No. 1 and CSA No. 2. CSA No. 1 includes seven zones of benefit (3 of which have water systems under the jurisdiction of the County). The 3 zones of benefit include Delft Colony, Traver, and Yettem. These water systems are isolated individual isolated systems and rely upon groundwater for potable water deliveries. These water systems are currently un-metered, and customers are billed under a flat rate structure. The Seville community is included in the Yettem water zone of benefit; however, it is served by a private mutual water company.

Tulare County Service Area No. 2 includes one zone of benefit known as the Wells Tract. Wells Tract water system is operated under the jurisdiction of Tulare County. Wells Tract receives water deliveries from the City of Woodlake water system through a

contract entered into by the City of Woodlake and the County. Wells Tract development is assessed taxes and fees through the County. Wells Tract water system is currently billed under a flat rate structure.

Assembly Bill 2572 (Metering Requirements)

As previously discussed, AB 2572 (passed in 2004) requires, with certain exceptions, all urban water suppliers to install water meters on all municipal and industrial water service connections that are located in its service area on or before January 1, 2025, (and must bill its customers under a metered rate structure within established time periods). Urban water suppliers that receive water from the Federal Central Valley Project are required to install water meters on all service connections to residential and nonagricultural commercial buildings constructed prior to January 1, 1992, on or before January 1, 2013, and must bill under a metered rate structure no later than March 13, 2013.

As defined in Section 10617 of the California Water Code, an "urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. At this time, many of the special districts that provide water for municipal uses do not meet the requirements of an "urban water supplier".

Under AB 2572, a water purveyor that becomes an "urban water supplier" on or after January 1, 2005, would be required to install water meters on all municipal and industrial water service connections within 10 years of becoming an urban water supplier. In addition, the purveyor would be required to charge each customer for which a meter has been installed, based on the actual volume of water delivered, as measured by the water meter, within 5 years of becoming an urban water supplier.

While most of the domestic water purveyors within Tulare County do not meet the definition of "urban water supplier" and will likely not meet the definition within the time horizon of the General Plan, many benefits are realized through the implementation of a metered rate structure. Hence, water purveyors should be encouraged to install water meters and implement volumetric pricing.

Water furnished or used without any method of determination of the quantities of water used by the person to whom the water is furnished has caused, and will continue to cause, waste and unreasonable use of water, and that this waste and unreasonable use should be identified, isolated, and eliminated. Water metering and volumetric pricing are among the most efficient conservation tools providing information on how much water is being used and pricing to encourage conservation.

Without water meters, it is impossible for homeowners and businesses to know how much water they are using, thereby inhibiting conservation, punishing those who conserve, and rewarding those who waste water. Existing law requires the installation of a water meter as a condition of water service provided pursuant to a connection installed on or after January 1, 1992, but the continuing widespread absence of water meters and the lack of volumetric pricing could result in the inefficient use of water for municipal and industrial uses.

Some of the domestic water purveyor's within the County have installed water meters, and implemented volumetric pricing. After implementation of volumetric pricing, districts encountered an immediate decrease in water demand, typically ranging between 20% and 30%. The decrease in water demand has also led to a decrease in operating expenses resulting from energy savings and in some cases reducing operation and maintenance costs by extending the useful life of system equipment.

"Can't Serve" Special Districts

The Tulare County Resource Management Agency maintains a list of special districts that provide sewer and/or water service that cannot currently meet the demand of new development projects. The list provided by Tulare County RMA (last updated April 30, 2007) indicates that following water and/or sewer districts are either under a temporary cease and desist order by the Regional Water Control Board prohibiting any new connections, or have other limitations for water and sewer connections.

- Alpaugh Joint Powers Authority Water District;
- Cutler Public Utility District;
- Delft Colony Zone of Benefit (County RMA);
- Earlimart Pubic Utility District;
- El Rancho Zone of Benefit (County RMA);

- Orosi Public Utility District;
- Pixley Public Utility District;
- Pratt Mutual Water Company;
- Richgrove Public Utility District;
- Seville Zone of Benefit (County RMA);
- Seville Water Company;
- Springville Public Utility District;
- Tooleville Zone of Benefit (County RMA);
- Traver Zone of Benefit (County RMA); and
- Wells Tract Zone of Benefit (County RMA).

In order to determine if a local utility district will be able to serve a proposed development project, a "Will Serve Letter" is required to be submitted with the building permit application. This requirement establishes whether or not a permit can proceed early in the application process and avoid application denials several weeks into the permit approval process.

Additional Reports & Water Information

Additional information regarding water resources within Tulare County, including water contracts, agricultural deliveries, groundwater recharge, major watersheds, and project development considerations can be found in the report entitled "*Water Resources General Plan Update County of Tulare*" prepared by Keller & Wegley Engineering.

7.3 Sanitary Sewer Infrastructure

Introduction

The purpose of this section is to summarize existing information regarding Tulare County's wastewater collection and treatment facilities. This section provides an overview of current treatment capacities, current flows, treatment processes, reclamation policies, current number of connections to system, and the general condition of the infrastructure. Sanitary sewer information is generally reported in terms of each individual district providing the service. A general overview, including a spreadsheet summarizing the current treatment facilities within each unincorporated community within the county is provided at the beginning of the section.

Methodology

Current sanitary sewer infrastructure within Tulare County is described in terms of each agency's providing service, as many of the sanitary sewer systems are isolated and serve only individual small communities within the County. There are a multitude of sanitary sewer service providers in Tulare County including CSDs, PUDs, sanitary districts, sewer maintenance districts, and County Service Areas (through zones of benefit). Many of the Districts are self governing and are not subject to County control. The County must coordinate its plans for growth and development with these districts in order to assure that services can be provided on a timely basis to areas planned for development, including areas within designated Urban Development Boundaries (UDBs).

Data reported in this section includes the following:

- Number of connections to system;
- Existing (2006) average dry weather flow at WWTF;
- Maximum treatment capacities (as permitted by the RWQCB);
- Treatment processes (including reclamation); and
- Age and current condition of collection system;

The data reported in this section of the report was collected from a number of sources including but not limited to special districts that provide sanitary sewer collection and/or treatment (including special district websites), the Tulare County Resource Management Agency, the California Regional Water Quality Control Board (Central Valley Region), and the U.S. Census Bureau.

Key Terms

- **ADWF.** Average dry weather flow, or flow during dry seasons, 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 storm water 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.

- **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.

- **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 storm water 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 infiltration and inflow 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.** 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.

- **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.
- **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 the wastewater industry in California include the 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 are responsible for establishing and implementing specific design criteria related to sanitary sewer systems.

U.S. Environmental Protection Agency. 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 and other programs on storm water runoff, and underground and above ground storage tanks.

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 (MSR) for specified public agencies under their jurisdiction. One aspect of a municipal service review is to evaluate an agency's ability to provide public services within its ultimate service area. A MSR is required before an agency can update its sphere of influence.

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.

Funding through the SCWG Program is provided only to local public agencies. Priority is given to those agencies who seek to install or repair sewer systems in communities that lack adequate sewer systems and to assist the expansion of systems in communities with population growth pressures. The SCWG Program Guidelines were adopted by the State Water Resources Control Board on June 17, 2004. In 2004, the SWRCB developed the initial Statewide Competitive Project List (CPL) to determine which projects will be able to compete for SCWG funding. The current CPL will be amended to include new potential projects to facilitate timely expenditure of SCWG funds. Projects on the current CPL will remain on the list. Agency's interested in seeking funding through this program should contact the RWQCB Grant Coordinator to be considered for placement on the CPL.

Clean Water Act (CWA). The CWA is the cornerstone of surface water quality protection in the United States (this act does not deal directly with ground water nor with water quantity issues). 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.

Existing Conditions

Most of the sanitary sewer systems within the unincorporated areas of Tulare County serve individual small communities, and in some cases communities effectively share wastewater treatment facilities. Sanitary sewer service within the county is generally operated and managed by special districts including CSDs, PUDs, sanitary districts, sewer maintenance districts, and County Service Areas (through zones of benefit). Some agencies provide sewer collection service only, and contract with surrounding agencies for wastewater treatment. Many of the Districts (except for County Service Areas) are self governing and are not subject to County control. Although these districts are not subject to County control, the County must coordinate its plans for growth and development with these districts in order to assure that services can be provided on a timely basis to areas planned for development, including areas within designated Urban Development Boundaries (UDBs). Some of the unincorporated urban areas within Tulare County are lacking sanitary sewer infrastructure, and are served by individual or community septic systems; these communities/urban areas are listed below.

- Allensworth;
- Alpaugh;
- Alpine Village – Sequoia Crest;
- Ducor;
- East Tulare Villa;
- Lindcove;
- Monson;
- Plainview;
- Ponderosa;
- Three Rivers;
- Teviston;
- Waukena;
- West Goshen; and
- Other unincorporated areas not listed in Table 7-2.

The Three Rivers CSD provides various services to its residents with regard to septic system maintenance and inspection. Some of the specific services provided by the Three Rivers CSD include the following:

- Septic system inspections and certification for transfers of property;

- Voluntary septic system inspection at owners request;
- Investigate and take appropriate action on complaints regarding septic problems; and
- Provide homeowners with information about how a septic system works, including a homeowners guide.

In the remaining communities that are on septic systems, property owners are generally responsible for maintenance and improvements to individual or community septic systems.

Most unincorporated communities within Tulare County, with the exception of those listed above, have sanitary sewer infrastructure in place; however, in many cases the facilities are several years old and are in need of rehabilitation and/or reconstruction to meet current standards.

Table 7-2 provides an overall summary of the special districts that provide sanitary sewer service within Tulare County. The table outlines the agency providing service, services provided, contracted treatment agency (if applicable), permitted capacity (as set forth by Waste Discharge Requirements issued by the RWQCB), ADWF, percent capacity currently utilized, treatment level, and effluent disposal method.

Table 7-2 Summary of Sanitary Sewer Service Providers

Service Provider	Services Provided	Contracted Treatment Agency	Permitted Capacity (MGD)	ADWF (MGD)	% Capacity	Treatment Level	Effluent Disposal
Cutler PUD	Collection & Treatment	-	See Note 1	See Note 1	See Note 1	Secondary	Ag Irrigation
Earlimart PUD	Collection & Treatment	-	0.800	0.800	100%	Advanced Primary	Disposal Ponds
East Orosi CSD	Collection Only	Cutler-Orosi JPWA	0.060	0.053	88%	Secondary	Ag Irrigation
Goshen CSD	Collection Only	City of Visalia	0.500	0.315	63%	Secondary	Ag Irrigation
Ivanhoe PUD	Collection & Treatment	-	0.560	0.360	64%	Secondary	Pasture Irrigation
Lemon Cove SD	Collection & Treatment	-	0.020	0.012	60%	Primary	Disposal Ponds
London CSD	Collection & Treatment	-	0.300	0.200	67%	Secondary	Disposal Ponds
Orosi PUD	Collection & Treatment	-	See Note 1	See Note 1	See Note 1	Secondary	Ag Irrigation
Pixley PUD	Collection & Treatment	-	0.290	0.298	103%	Primary	Disposal Ponds
Poplar CSD	Collection & Treatment	-	0.310	0.220	71%	Advanced Primary	Ag Irrigation
Porter Vista PUD	Collection Only	City of Porterville	See Note 2	See Note 2	See Note 2	Secondary	Ag Irrigation
Richgrove CSD	Collection & Treatment	-	0.220	0.250	114%	Primary	Ag Irrigation
Springville PUD	Collection & Treatment	-	0.060	0.056	93%	Secondary	Disposal Ponds
Strathmore PUD	Collection & Treatment	-	0.400	0.150	38%	Primary	Ag Irrigation
Sultana CSD	Collection Only	Cutler-Orosi JPWA	See Note 1	See Note 1	See Note 1	Secondary	Ag Irrigation
Terra Bella SMD	Collection & Treatment	-	0.300	0.280	93%	Advanced Primary	Ag Irrigation
Tipton CSD	Collection & Treatment	-	0.400	0.190	48%	Secondary	Ag Irrigation
Woodville PUD	Collection & Treatment	-	0.330	0.120	36%	Secondary	Disposal Ponds
CSA #1 - Delft Colony	Collection & Treatment	-	0.057	0.045	79%	Advanced Primary	Disposal Ponds
CSA #1 - El Rancho	Collection Only	City of Lindsay	0.012	0.012	100%	Secondary	Disposal Ponds
CSA #1 - Seville	Collection Only	Cutler-Orosi JPWA	0.050	0.048	96%	Secondary	Ag Irrigation
CSA #1 - Tonyville	Collection Only	City of Lindsay	0.060	0.028	47%	Secondary	Disposal Ponds
CSA #1 - Tooleville	Collection & Treatment	-	0.035	0.028	80%	Advanced Primary	Disposal Ponds
CSA #1 - Traver	Collection & Treatment	-	0.088	0.070	80%	Advanced Primary	Disposal Ponds
CSA #2 - Wells Tract	Collection Only	City of Woodlake	0.030	0.022	73%	Primary	Pasture Irrigation
CSA #1 - Yettem	Collection Only	Cutler-Orosi JPWA	0.042	0.015	36%	Secondary	Ag Irrigation

Notes: 1) The Cutler PUD and Orosi PUD are allocated capacity in terms of Equivalent Single Family Dwellings (ESDs). Current allocations are as follows: Cutler PUD=1,255 ESDs, Orosi PUD=2,162 ESDs. East Orosi, Seville, and Yettem have contracted capacities of 0.060, 0.050, 0.042 MGD, respectively. The contracted capacity for the community of Sultana is unknown.

2) The contracted capacity for the Porter Vista PUD is unknown. The ADWF from the Porter Vista PUD system is estimated at 0.400 MGD.

3) Permitted capacities were obtained from WDR Orders issued by the RWQCB and other available data. Current Average Dry Weather Flows (ADWF) were obtained from the Wastewater User Charge Survey Report F.Y. 2005-06 prepared by the State Water Resources Control Board (SWRCB) and other available data.

A brief description of each community's sanitary sewer system identified in the above table is provided below in order to supplement the information presented in the table and to present a discussion of more specific issues pertaining to each community's sewage system.

Cutler-Orosi Joint Powers Wastewater Authority

The Cutler-Orosi Joint Powers Wastewater Authority operates a WWTF that serves the communities of Cutler, Orosi, East Orosi, Sultana, Seville, and Yettem. Construction of the WWTF, completed in 1983, was funded 75% from a cost grant from the EPA, 12.5% from a cost grant from the State Water Resources Control Board, and 12.5% from proceeds of revenue bonds sales.

The WWTF operates under the provisions of Waste Discharge Requirements (WDR) Order No. R5-2006-0092 issued by the RWQCB. Order No. R5-2006-0092 prescribes that the monthly average discharge shall not exceed 2.0 MGD. The current ADWF at the WWTF is 1.40 MGD, while the historical high flow recorded at the WWTF was 1.89 MGD. In September 2006, the RWQCB rescinded a Cease and Desist Order after improvements to the WWTF were completed and a registered civil engineer submitted written certification that the WWTF would operate satisfactorily to a flow of 2.0 MGD.

The Cutler PUD and Orosi PUD are allocated capacity at the WWTF in terms of equivalent single family dwellings (ESDs) through an agreement between the two districts. Current allocations are 1,255 and 2,162 ESDs for the Cutler PUD and Orosi PUD, respectively. Other communities served by the WWTF are allocated capacity in terms of maximum month ADWF. ADWF capacities for the East Orosi and Seville communities are currently 0.050 and 0.060 MGD, respectively. ADWF capacity allocations for the Sultana and Yettem communities are unknown.

According to Cutler PUD and Orosi PUD staff, their sewer collection systems are very old and pipe leaks and breaks cause significant problems including groundwater inflow/infiltration and cross contamination with groundwater. During dry months, the sewer collection system experiences ex-filtration and during winter months the collection system experiences inflow/infiltration of storm water. The Orosi PUD is implementing a phased sewer collection system rehabilitation/replacement project, and has awarded a contract for the

construction of the Phase 1 improvements. The Cutler-Orosi JPWA will be able to more accurately predict the remaining capacity at the WWTF once repairs are made to leaking pipes throughout the collection systems that discharge to the WWTF.

The Cutler PUD, Orosi PUD, and other Districts that discharge to the Cutler-Orosi Joint WWTF are currently under a sewer connection moratorium, and have waiting lists for additional sewer connections.

The Tulare County Redevelopment Agency (TCRA) is working with the Cutler PUD and Orosi PUD to correct deficiencies that would increase the capacity of the treatment facility. The TCRA, on behalf of the Cutler-Orosi JPWA submitted an application for Federal Assistance to construct improvements at the Cutler-Orosi WWTF. The United States Department of Agriculture (USDA) awarded $2.9 million to TCRA to begin improvements to the WWTF. The improvements will modernize the facility and add capacity to bring the serviceable operational limits to 2.4 MGD.

Earlimart Public Utility District

The Earlimart PUD operates a sanitary sewer collection, treatment, and disposal system that support's 1,485 connections, including 1,424 residential connections, 57 commercial connections, and 4 school connections.

The District operates a WWTF under the provisions of WDR Order No. 98-140 issued by the RWQCB. Order No. 98-140 prescribes that the monthly average discharge shall not exceed 0.8 MGD. The District indicated that recent improvements to the plant including the construction of additional oxidation ponds have brought the plants capacity up to 1.24 MGD. As prescribed by Order No. 98-140, when a California registered civil engineer has certified that the WWTF can reliably treat 1.24 MGD, the monthly average discharge shall not exceed 1.24 MGD. The District currently complies with the requirements specified in Order No. 98-140. Assuming the plant has been certified to reliably treat 1.24 MGD, it is operating at 65% of its capacity.

The District has indicated that the daily flow during summer months is higher than during winter months indicating that there is no significant inflow/infiltration into the collection system. This is an indication that the collection system is operating adequately. Although there is excess capacity at the WWTF, the District indicated

that the plant was constructed in 1956 and needs upgrading (including electrical upgrades).

Based upon *Waste Discharge Requirements (WDR) Order No. 98-140* (Regional Water Quality Control Board), the district indicated that currently all wastewater evaporates and percolates from the retention ponds. As flow increases, the district plans to recycle the wastewater on 140 acres of District owned land that would be converted into pastureland.

East Orosi Community Services District

The East Orosi CSD provides sewer collection service to its residents. The sewer is transported to the Cutler-Orosi wastewater treatment plant through a series of collection pipes and pump stations. The East Orosi CSD is currently having a sewer system study prepared to determine the feasibility of re-plumbing the hookups to the system. Prior to the installation of a sanitary sewer collection system, district residents were on septic systems. When sanitary sewer collection lines were installed, they were connected directly into septic tanks, which allowed the sewage to flow into the collection system from the septic tanks, thus eliminating flow through the leach lines. East Orosi contracts with the Cutler-Orosi JPWA for treatment of wastewater.

The Cutler-Orosi JPWA indicated that East Orosi is currently at maximum wastewater treatment capacity. For this reason, the East Orosi CSD is not currently allowing any new hookups to their wastewater collection system. The collection system currently supports 106 residential connections, 1 commercial connection (local store), and 1 church connection.

Without treatment plant improvements to increase capacity, the district's capabilities of supporting future growth would be limited. The district also indicated that it cannot currently afford to increase its treatment capacity at the facility.

Another factor limiting East Orosi's sewer capacity is the fact the community is the located the farthest from the treatment facility. This means that any collection lines or pumping stations down stream of the community would limit the capacity of all upstream collection lines. This is a significant limiting factor that the district has little control over, especially if dealing with overcapacity facilities that fall outside of the district boundary.

Goshen Community Services District

The Goshen CSD is responsible for the planning and construction of a sewage collection system. The main sewer system for the Goshen community is comprised of a collection system that was constructed in the mid to late 1990s. The Goshen CSD has a current Wastewater Service Agreement with the City of Visalia for treatment of the District's wastewater.

Connection from the District's sewer system to the City of Visalia's sewer system is through a 24-inch gravity sewer under Camp Drive. The 24-inch line connects to the existing City SR 198-Airport lift station. The District constructed the 24-inch line as a part of the Goshen Sewer Project, although the line is part of the City's Master Planned Sewer System. After the line was placed in operation, the City assumed responsibility for maintenance of the line as a part of the City conveyance system. The 24-inch line is planned to provide full capacity for the ultimate build-out of the Goshen UDB.

The District's wastewater collection system dumps into a lift station (owned and operated by the District) near the intersection of Avenue 305 and Effie Drive, which in turn pumps the wastewater into the 24-inch line in Camp Drive. The sewer lift station operates with two pumps, and has a design capacity of 500,000 gallons per day (GPD). The Wastewater Service Agreement between City of Visalia and the Goshen CSD allows for a current contracted average daily discharge to the City's treatment plant of 335,000 GPD. The Wastewater Service Agreement provides for the purchase of additional capacity to be charged on a percentage increase basis.

The District is working towards the adoption of a Sewer System Master Plan that will assist the District in expanding its collection system in line with development trends and the needs of the community.

Ivanhoe Public Utility District

Ivanhoe PUD operates a sanitary sewer collection, treatment and disposal system that supports 1,114 single and multi-family residential connections. It is estimated that there are approximately 1,200 total connections to the system.

The District operates a WWTF under the provisions of WDR Order No. 98-090 issued by the RWQCB. Order No. 98-090 prescribes that

the monthly average daily discharge shall not exceed 0.56 MGD. With a current ADWF of 0.36, the plant is currently operating at 64% of its capacity.

Based upon a review of monthly monitoring reports submitted to the RWQCB, the District's wastewater inflows are typically higher during summer months than during winter months indicating that there is no significant inflow/infiltration into the collection system during the winter months. This is an indication that the collection system is in adequate operating condition.

Lemon Cove Sanitary District

The Lemon Cove Sanitary District operates a sanitary sewer collection, treatment and disposal system that support's approximately 50+ connections. A single 185 foot wide, 300 foot long, 4.5 foot deep bentonite sealed oxidation pond was constructed and planned disposal was by discharge to approximately 40 acres of adjacent pasture for non-milking cattle. The oxidation pond was later divided into two cells. The District has not discharged to the pasture since the facility was constructed because the flow has not exceeded the evaporation and percolation capacity of the treatment pond.

The District's WWTF is operated under the provisions of WDR Order No. 94-348, issued by the RWQCB. Order No. 94-348 prescribes that the monthly average dry weather discharge flow shall not exceed 20,000 GPD. With a current ADWF of 12,000 GPD, the plant is operating at 60% of its capacity. The District would need to expand the capacity of its WWTF to support any significant development projects within the community's urban development boundary.

London Community Services District

The London CSD operates a sanitary sewer collection, treatment, and disposal system that supports approximately 430 connections.

The District's WWTF is operated under the provisions of WDR Order No. 96-172 issued by the RWQCB. Order No. 96-172 prescribes that the monthly average discharge flow shall not exceed 0.3 MGD. According to WWTF records and the District Engineer, the average dry weather flow at the WWTF is 0.20 MGD. According to the district's engineer, improvements completed in 2000 with USDA Rural Development funding increased the plant's capacity to 0.50

MGD. Approximately 13.1 acres of District-owned peach orchards were converted to evaporation/percolation ponds as a part of the project.

The district has historically had capacity problems at the WWTF. In the early 1990s, un-disinfected effluent spilled into King Ditch (which runs along the eastside of the facility). On another occasion, the effluent overflowed into, and ponded in, the open field north of the facility. An engineering investigation report in 1993 revealed that the maximum capacity of the facility was limited by effluent disposal capacities of 0.31 MGD in the summer and 0.22 MGD in winter. The report also found the two pumps serving the influent lift station operating at capacity. At the direction of the District's Engineer, two additional disposal ponds were constructed north of the facility and the air diffusion system was rebuilt.

Orosi Public Utility District

Refer to discussion under "Cuter-Orosi Joint Powers Wastewater Authority".

Pixley Public Utility District

The Pixley PUD operates a sanitary sewer collection, treatment, and disposal system that supports approximately 800 connections, including 25 commercial connections. Raw sewage is transported to a WWTF which is located just west of the Pixley airport, which is owned and operated by the District.

The District's WWTF is operated under the provisions of WDR Order No. 5-00-096 issued by the RWQCB. Treated effluent is stored in evaporation/percolation ponds and/or applied on 43 acres of pastureland that is owned and operated by the District. Non-milking cattle graze on the pastureland. Order No. 5-00-096 prescribes that the monthly average daily discharge shall not exceed 0.29 MGD. With an ADWF of 0.298 MGD, it is concluded that the WWTF is currently operating above its permitted capacity. The WWTF is currently operating under a Cease and Desist Order.

The *Wastewater Treatment Facility Upgrade and Expansion Project – Project Feasibility Report* (Provost & Pritchard, February 2005) outlines a major reconstruction proposal for the District's WWTF. The improved WWTF would be capable of treating 0.5 MGD. The District

has applied for USDA grant and loan funding to implement the improvement plan. The project is currently listed as a Class B project on the statewide competitive projects list.

Poplar Community Services District

The Poplar CSD operates a sanitary sewer collection, treatment and disposal system that supports approximately 640 connections. Raw sewage is collected and transported to a WWTF located southwest of the community.

The District's WWTF is operated under the provisions of WDR Order No. 98-214 issued by the RWQCB. Order No. 98-214 prescribes that the monthly average discharge flow shall not exceed 0.31 MGD. With a current ADWF of 0.22 MGD, the plant is operating at 71% of its capacity. The District's WWTF is currently operating in full compliance with Order No. 98-214 issued by the RWQCB. Developments that have recently been approved within the existing District Boundary will use the remaining capacity at the WWTF. Based upon this realization, the District would need to expand the capacity of its WWTF to support additional growth associated with the build-out of the General Plan.

The Poplar CSD recycles its wastewater by irrigating 41-acres of alfalfa owned by the District. The land used for wastewater reclamation will increase in the near future as the District recently purchased additional acreage for this purpose. The District's wastewater reclamation activities promote water conservation, groundwater recharge, and demonstrate the District's desire to conserve its potable water sources.

Porter Vista Public Utility District

The Porter Vista PUD operates a sanitary sewer collection system that transports raw sewage to the City of Porterville WWTF. Current flows from the Porter Vista PUD are estimated at 0.40 MGD. The City of Porterville WWTF is currently operating under a Cease and Desist Order. The City is currently implementing improvements that would bring the WWTF into compliance with RWQCB requirements.

Richgrove Community Services District

Richgrove CSD operates a sanitary sewer collection, treatment and disposal system that support's approximately 523 connections. Raw sewage is collected and transported to a WWTF located northeast of the community.

The District's WWTF is operated under the provisions of WDR Order No. 83-088 issued by the RWQCB. Order No. 83-088 prescribes that the average daily dry weather discharge shall not exceed 0.22 MGD. With an ADWF of 0.25 MGD, it is concluded that the WWTF is currently operating above its permitted capacity, indicating that additional sewer connections cannot be supported at this time.

The District's wastewater collection and treatment facilities were constructed in 1984 and were funded by a USDA loan and grant package. The sanitary sewer collection and treatment facilities were built in order to correct sewage problems that were causing groundwater pollution and threatened health hazards. Since the District's collection system was constructed in 1984, it is likely that the system remains in good operating condition.

The District is in the process of evaluating wastewater treatment options to bring the plant into compliance regarding flow to the plant, and to address other WWTF related issues. Recently completed plans have identified improvements to bring the WWTF into compliance with the RWQCB, and increase capacity. The District is currently working to secure funding to implement planned improvements to the WWTF.

Springville Public Utility District

The Springville PUD operates a sanitary sewer collection, treatment, and disposal system that supports approximately 400 total connections, 375 which are currently active. Raw sewage is collected and transported to a wastewater treatment facility (WWTF) located southeast of the community adjacent to and west of the Tule River.

The District's WWTF is operated under the provisions of WDR Order No. 96-195 issued by the RWQCB. Order No. 96-195 prescribes that the monthly average dry weather discharge shall not exceed 0.06 MGD. With a current ADWF of 0.056 MGD, the WWTF is operating at 93% of its capacity. The RWQCB issued a Cease and Desist Order

to the Springville PUD in 1996 and required the District to find a way to reclaim treated effluent from its WWTF.

The District imposed a sewer connection moratorium back in 1980 due to the limited capacity of its WWTF, which effectively ended most new development within its boundaries, including the commercial and residential town center of Springville along Highway 190. To date, the Springville PUD has been unable to comply with the requirements of the Cease and Desist Order due to funding shortfalls and other setbacks. The Cease and Desist Order is still in effect as of the preparation of this background report.

In June 1998, the District developed a project that relied on irrigation as the primary means of effluent disposal. The District customers approved, through a Proposition 218 process, increased sewer fees to address United States Department of Agriculture – Rural Development (USDA-RD) loan repayment and increased maintenance cost requirements associated with the project. In March 1999, the intended recipient of the recycled water terminated its participation in the project leaving the District without a mechanism for disposal of the treated effluent.

Currently, a new proponent has been retained to accept the treated effluent that will be used for agricultural irrigation purposes. The current project cost reflects a significant increase that is primarily due to the increase in pipeline length and additional costs for the storage of a portion of the effluent. The pipeline that is required to deliver the effluent to the disposal property is about 3 times the length of the previously proposed transmission pipeline. The District had secured approximately $1.18 million in USDA-RD funding that was to be used for the 1998 project. The District intends on securing additional USDA-RD funding that will satisfy the increased construction costs of the new project. Construction of the proposed project is estimated to take about one year from start to finish.

Based upon correspondence from the District, it is estimated that the currently proposed project could support an additional 185 connections with allocations being based on capacity. District staff has indicated that there is currently a waiting list with 131 requests for sewer connections.

The District has issued permits to a few residents within the District Boundary to place septic tanks on the property with the provision that they would connect to the District's sewer system once additional

capacity becomes available. Other residences will be allowed to stay with septic tanks as the Springville PUD does not have sewer lines available in all areas of the District, such as Rio Vista Drive.

Strathmore Public Utility District

The Strathmore PUD operates a sanitary sewer collection, treatment, and disposal system that supports approximately 480 connections. Raw sewage is collected in a series of collection pipes ranging in size from 6 to 12 inches (including Vitrified Clay Pipe and Cast Iron Pipe) and then transported to a WWTF that is owned and operated by the Strathmore PUD.

The District's WWTF is operated under the provisions of WDR Order No. 85-024 issued by the RWQCB. Order No. 85-024 prescribes that the 30-day average daily dry weather discharge shall not exceed 0.40 MGD. With a current ADWF of 0.15 MGD, the WWTF is operating at 38% of its capacity.

Sultana Community Services District

Wastewater from the Sultana community is treated at the Cutler-Orosi WWTF. As previously discussed, the Cutler-Orosi JPWA owns and operates the facility, which is currently near maximum capacity. Sultana is located northwest of the treatment facility, meaning there are no downstream collection lines from other communities that could potentially limit their own collection systems capacity. Sultana's ability to expand its current sewer collection system is limited by the capacity of the WWTF, including the financial limitations of purchasing additional contract capacity at the facility.

According to the Wastewater User Charge Survey Report, published by the State Water Resources Control Board, the Sultana CSD estimates an ADWF of 85,000 from the community. The contracted capacity allocated to the Sultana CSD by the Culter-Orosi JPWA is unknown.

Terra Bella Sewer Maintenance District (TBSMD)

The Terra Bella Sewer Maintenance District operates a sanitary sewer collection, treatment, and disposal system. Raw sewage is collected and transported to a WWTF located north of the community.

The District's WWTF is operated under the provisions of WDR Order No. 95-029 issued by the RWQCB. Order No. 95-029 prescribes that the monthly average discharge flow shall not exceed 0.30 MGD. With a current ADWF of 0.28 MGD, the WWTF is operating at 93% of its capacity. This indicates that, at this time, there is very little to no capacity available for additional connections to the District's sewer system. Additional capacity will be needed in order to accommodate projected General Plan growth.

Tipton Community Services District

The Tipton CSD operates a sanitary sewer collection, treatment, and disposal system that supports approximately 554 connections including 496 residential connections and 58 commercial connections. Raw sewage is collected in a series of collection pipes ranging in size from 4 to 12 inches and then transported to a WWTF that is owned and operated by the Tipton CSD.

The District's WWTF is operated under the provisions of WDR Order No. 85-170 issued by the RWQCB. Order No. 85-170 states that the estimated design capacity of the plant is 0.48 MGD, but prescribes that the monthly average daily discharge shall not exceed 0.40 MGD. With a current ADWF of 0.19 MGD, the WWTF is operating at 48% of its capacity.

Woodville Public Utility District

The Woodville PUD operates a sanitary sewer collection, treatment, and disposal system that supports approximately 480 connections. Raw sewage is collected and transported to a WWTF located southwest of the community.

The District's WWTF is operated under the provisions of WDR Order No. 86-108 issued by the RWQCB. Order No. 86-108 prescribes that the monthly average daily dry weather discharge flow shall not exceed 0.33 MGD. With a current ADWF of 0.12 MGD, the WWTF is operating at 36% of its capacity.

County Service Area No. 1

County Service Area No. 1 (CSA #1) provides domestic water service and sanitary sewer service to residents in the unincorporated areas of

Tulare County that are not governed by an independent special district. The county's sewer infrastructure is divided into zones of benefit for rate structuring and functional purposes. The following seven zones of benefit within CSA #1 have been established for sanitary sewer infrastructure and contain a total service population of approximately 3,300 residents.

- El Rancho Sewer;
- Delft Colony Sewer;
- Seville Sewer;
- Tonyville Sewer;
- Tooleville Sewer;
- Traver Sewer; and
- Yettem Sewer.

El Rancho is an unincorporated Tulare County community of approximately 125 persons, located northeast of the Lindsay city limits. The El Rancho zone of benefit is bounded by East Fir Street to the north, Avenue 234 to the south, the Visalia Electric railroad tracks to the west, and North Strathmore Avenue to the east. The El Rancho sewer system is a collection system only that transports raw sewage to the City of Lindsay treatment and disposal facility. Currently, the average dry weather flow from the El Rancho collection system is 12,000 GPD. In 1998, a zone change to Agricultural Residential (AR) within the El Rancho zone of benefit was denied on the basis that sewer flows exceeded the maximum capacity agreed upon between the county and the City of Lindsay. On this basis, the current El Rancho sewer collection system is identified as being at full capacity, and unable to support any new connections, until further capacity improvements and/or negotiations can be completed.

The Delft Colony is an unincorporated community of approximately 500 persons. It is located about 4 miles southwest of the City of Dinuba. The Delft Colony sewer system includes a series of collection pipes that transport the wastewater to a treatment and disposal facility located approximately 500 feet south of the Delft Colony service area. The treatment facility consists of a bar rack/comminatory, aerated facultative lagoons, and recirculation with final disposal to evaporation/percolation ponds. The current average dry weather flow into the plant is approximately 45,000 GPD, and the design capacity of the plant is 57,200 GPD.

Seville is an unincorporated community of approximately 1,000 persons and is located southeast of Cutler. The Seville zone of benefit is an island within the Yettem zone of benefit and is generally bounded by SR 201 to the north, Inyo Avenue to the south, Road 152 to the west, and Road 156/irrigation canal to the east. The Seville sewer system is a collection system only that transports an average dry weather flow of approximately 48,000 GPD to the Cutler-Orosi treatment and disposal facility. The Cutler-Orosi Joint Powers Wastewater Authority is contracted with Tulare County to treat a maximum flow of approximately 50,000 GPD from the Seville zone of benefit.

Tonyville is an unincorporated community of approximately 150 persons that is located north of the Lindsay city limits. The Tonyville zone of benefit is bounded by the Visalia Electric railroad tracks to the northeast, Avenue 252 to the south, and Road 216 to the west. The Tonyville sewer system is a collection system only that transports an average dry weather flow of approximately 28,000 GPD to the City of Lindsay wastewater treatment and disposal facility. The City of Lindsay is contracted with the county to treat a maximum flow of approximately 60,000 GPD from the Tonyville zone of benefit.

Tooleville is an unincorporated community of approximately 300 persons, and is located about 1 ½ miles east of the City of Exeter. The Tooleville sewer system includes a series of collection pipes that transport the wastewater to a 20-acre treatment and disposal site adjoining the southern boundary of the Tooleville service area. The treatment and disposal ponds are set back approximately 300 feet from the service area boundary. The treatment facility consists of a bar rack/comminutor, aerated facultative lagoons, recirculation, with final disposal to evaporation/percolation ponds. The current average dry weather flow into the plant is approximately 28,000 GPD and the design capacity of the plant is 35,000 GPD.

The Traver sewer system includes a series of collection pipes that transport the wastewater to a treatment and disposal facility located approximately 2,000 feet east of the Traver service area. The treatment facility consists of a bar rack/comminutor, aerated facultative lagoons, and recirculation with final disposal to evaporation/percolation ponds. The current average dry weather flow into the plant is approximately 70,000 GPD, and the design capacity of the plant is 88,000 GPD.

The Yettem zone of benefit covers a wide area southeast of Cutler, and is generally bounded by Avenue 400 to the north, Avenue 376 to the south, Loper Ditch to the west, and Road 162/Friant Kern Canal to the east. The Yettem sewer system is a collection system only, that transports an average dry weather flow of approximately 15,000 GPD to the Cutler-Orosi treatment and disposal facility. The Cutler-Orosi Joint Powers Wastewater Authority is contracted with Tulare County to treat a maximum flow of approximately 42,000 GPD from the Yettem zone of benefit.

The sewer infrastructure for zones of benefit within County Service Area #1 is summarized in Table 7-3.

Table 7-3. County Service Area #1 Zones of Benefit Sewer Infrastructure Summary

Zone of Benefit	Treatment Facility	Current ADWF (GPD)	Treatment Capacity (GPD)	Contracted Capacity (GPD)
El Rancho	City of Lindsay	12,000	N/A	12,000
Delft Colony	Delft Colony	45,000	57,200	N/A
Seville	Cutler-Orosi	48,000	N/A	50,000
Tonyville	City of Lindsay	28,000	N/A	60,000
Tooleville	Tooleville	28,000	35,000	N/A
Traver	Traver	70,000	88,000	N/A
Yettem	Cutler-Orosi	15,000	N/A	42,000

Notes: GPD = Gallons per Day
N/A = Not Applicable
ADWF = Average Dry Weather Flow

County Service Area No. 2

County Service Area No. 2 (CSA #2) provides sanitary sewer service to residents in the Wells Tract zone of benefit. The Wells Tract zone of benefit community has approximately 200 residents and is located east of the City of Woodlake. The Wells Tract zone of benefit, which is consistent with the CSA #2 district boundary, is generally bounded by Avenue 346 to the north, Avenue 344 to the south, Road 220 to the east, and Webb Street to the west.

The Wells Tract sewer system is a collection system only that transports an average dry weather flow of approximately 22,000 GPD to the City of Woodlake treatment and disposal facility. The City of Woodlake is contracted with Tulare County to treat a maximum flow of approximately 30,000 GPD from the Wells Tract zone of benefit.

7.4 Storm Drainage Infrastructure

The purpose of this section is to summarize existing information regarding Tulare County's drainage facilities, specifically focusing on the County's current storm drainage planning/implementation strategies. Tulare County is the lead agency in providing storm drain infrastructure within the unincorporated areas of the county. Many of the unincorporated small communities have no underground drainage infrastructure, leaving only surface drainage which is more subject to flooding, and/or not properly functioning due to little or nonexistent facility maintenance. Surface draining also poses a potential threat to wildlife, farm animals, and groundwater supplies. This is because there is limited ability to treat the water before it flows into a basin, or other surface waters, such as a creek, irrigation ditch, or river. Surface runoff can pick up contaminants from paved surfaces including but not limited to oil, antifreeze, and rubber. Surface runoff is often treated to reduce the risk of contamination.

Methodology

Since the level of storm drainage infrastructure varies significantly throughout the unincorporated areas of the County, and due to the time intensive efforts of evaluating the storm drain infrastructure of each community (at a General Plan level), this background report focuses on the current planning efforts of the County as a whole, and identifies specific projects currently being undertaken by the County that would improve storm water drainage infrastructure within unincorporated areas.

Key Terms

- **APWA.** American Public Works Association
- **Basin.** A hydrologic unit consisting of 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 storm water runoff. BMPs include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material 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.
- **Culvert.** A short, closed (covered) conduit or pipe that passes storm water runoff under an embankment, usually a roadway.
- **CWA.** Clean Water Act
- **Detention Pond.** A storm water system that delays the downstream progress of storm water 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)
- **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 storm water runoff. Erosion occurs naturally but can be intensified by land clearing activities such as farming, development, road building, and timber harvesting.
- **Flood.** A temporary rise in flow or stage of any watercourse or Storm water conveyance system that results in storm water 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 storm water runoff.
- **Flood Plain.** Any land area susceptible to inundation by storm water from any source.
- **General Permit.** A permit issued under the NPDES program to cover a certain class or category of storm water discharges. These permits reduce the administrative burden of permitting storm water discharges.
- **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.

- **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 them into lakes, rivers, wetlands, coastal waters, and even our 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 them 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) that removes oil and grease from water entering the drain.

- **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 storm water runoff. TDML (Total Daily Maximum Loading) is the limiting of pollutant loading into a body of water, such as a lake or river.

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

- **Retention Pond.** A process that halts the downstream progress of storm water 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 storm water via percolation over a specified period of time. (As opposed to a more common Detention Pond.)

- **Runoff.** Drainage or flood discharge that leaves an area as surface flow or as pipeline flow. Has reached a channel or pipeline by either surface or subsurface routes.

- **Storm Water.** Precipitation that accumulates in natural and/or constructed storage and storm water systems during and immediately following a storm event.

- **Storm Water Facilities.** Systems such as watercourses, constructed channels, storm drains, culverts, and detention/ retention facilities that are used for the conveyance and/or storage of storm water runoff.

- **Storm Water Management.** Functions associated with planning, designing, constructing, maintaining, financing, and regulating the facilities (both constructed and natural) that collect, store, control, and/or convey storm water.

- **Storm Water System.** The entire assemblage of storm water facilities located within a watershed.

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

- **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 storm water.

- **Urban Runoff.** Storm water from urban areas that tends to contain heavy concentrations of pollutants from vehicles and industry.

- **Watercourse.** A lake, stream, creek, channel, storm water conveyance system, or other topographic feature, over which storm waters flow at least periodically.

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

- **Wetlands.** Land with a 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 storm water industry in California include EPA and SWRCB. These agencies are responsible for carrying out and enforcing environmental laws enacted by Congress. The need to protect our environment has resulted in a number of laws and subsequent regulations and programs. In the following paragraphs, various federal and state programs are discussed in relationship to the control of pollutants in storm water. Local government agencies are responsible for establishing and implementing specific design criteria related to storm drain systems.

Local Regulations (Tulare County Ordinance Code). Acquisition of land for and construction of storm drainage facilities in the unincorporated area is subject to County review for consistency with the Tulare County General Plan under Section 65402 of the Government Code. The Tulare County Ordinance Code provides the regulatory framework for implementing the County General Plan policies and programs. The Tulare County Code includes provisions covering well permitting and construction, water conservation and landscape water usages, storm-water quality management, and the design and construction of on site wastewater disposal systems, such as septic tank and leach field systems.

Current standards pertaining to the development of storm drainage systems, as prescribed by the existing County Ordinance Code; are identified as follows; (a) If it is not feasible to provide for an adequate system of drainage outside of a subdivision, a ponding lot or lots shall be required within the subdivision to provide for drainage of surface and storm waters generated in the subdivision or flowing across the subdivision. The ponding lot or lots shall be located adjacent to the probable route of any drainage facility that might be constructed in the future in order to facilitate connection to such drainage facility when it is constructed; (b) The area of the ponding lot or lots shall be established on the basis of one subdivision lot for each twenty lots in the subdivision if the subdivision lots average one half acre or less in area, and one lot or each thirty lots in the subdivision if the subdivision lots average more than one half acre in area. In determining the number of subdivision lots to be dedicated as a ponding lot or lots, the above computations shall be adjusted to the nearest full subdivision lot. The subdivision lot or lots provided shall

have an area equal to or greater than the average area of all the lots in the subdivision; (c) Ponding lots shall have one and one half feet of freeboard, a maximum water depth of 3 feet and a water surface elevation of one half foot below the grate flow line of the lowest catch basin in the system. Ponding lots shall be constructed in accordance with the improvement standards referred to in section 7-01-2025; (d) the sub-divider shall convey an easement to the County for the use of said ponding lot or lots, or he may convey fee title to the County if he prefers.

State and Federal Regulations. Storm water regulations are an outgrowth of the 1972 Clean Water Act and 1987 Water Quality Act, which established new standards and schedules for industrial and municipal storm water. Known as the National Pollutant Discharge Elimination System (NPDES), this national permitting program controls the discharge of pollutants from any point source to waters of the United States. In 1990, the U.S. EPA established regulations for permitting storm water discharges from industrial sites (including construction sites that disturb five acres or more) and from municipal separate storm sewer systems (MS4s) serving a population of 100,000 or more. These regulations, known as the Phase I regulations, require operators of medium and large MS4s to obtain storm water permits. In December 1999, U.S. EPA established additional regulations, known as Phase II, requiring permits for storm water discharges from small MS4s and from construction sites disturbing between one and five acres of land. Designated MS4s within the County are permitted under the Phase II requirements.

Federal regulations allow two permitting options for storm water discharges (individual permits and general permits). The State Water Resources Control Board (SWRCB) elected to adopt a statewide general permit for Small MS4s in order to efficiently regulate numerous storm water discharges under a single permit. The SWRCB adopted general permit Water Quality Order No. 2003-0005-DWQ for the discharge of storm water from small MS4s to provide permit coverage for smaller municipalities, including non-traditional small MS4s (i.e., military bases, public campuses, and prison and hospital complexes).

The MS4 permits require the discharge to develop and implement a Storm Water Management Plan/Program (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP). MEP is the performance standard specified in Section 402(p) of the Clean Water Act. The general permit requires

regulated Small MS4s to develop and implement a SWMP that describes Best Management Practices (BMPs), measurable goals, and timetables for implementation in the following six program areas.

- Public Education – Educate the public in its permitted jurisdiction about the importance of the storm water program and the public's role in the program;

- Public Participation – Comply with all State and local notice requirements when implementing a public involvement/participation program;

- Illicit Discharge Detection and Elimination – Adopt and enforce ordinances or take equivalent measures that prohibit illicit discharges, and implement a program to detect illicit discharges;

- Construction Site Storm Water Runoff Control – Develop a program to control the discharge of pollutants from construction sites greater than or equal to one acre in size within its permitted jurisdiction. The program must include inspections of construction sites and enforcement actions against violators; and

- Post Construction Storm Water Management – Require long term post-construction BMPs that protect water quality and control runoff flow, to be incorporated into development and significant redevelopment projects. Post construction programs are most efficient when they stress (1) low impact design; (2) source controls; and (3) treatment controls.

Existing Conditions

Storm drainage systems exist in various urban areas throughout Tulare County. Storm drainage infrastructure projects in the unincorporated areas the County are generally constructed through redevelopment projects, and/or in conjunction with transportation improvement and site development projects (i.e., residential subdivisions). Localized storm drainage systems in unincorporated areas discharge to various surface waters including streams, rivers, ditches, other surface water courses, and ponding basins. Storm drain infrastructure in smaller communities generally consists of underground and surface collection facilities that transport the water to local retention ponds and/or local streams. The most common

method of accommodating storm water runoff in smaller communities throughout the County is to construct retention basins that serve individual subdivisions. Generally, new subdivisions within the County are required to provide land for storm drain infrastructure purposes, which consist of 5-7 foot deep retention ponds with the area depending on the size of development. Drainage infrastructure is typically installed within County right of way, and is operated and maintained by the Tulare County Resource Management Agency (TCRMA).

The provision of ongoing storm water management is currently being accomplished through requirements set forth in the County Ordinance Code. In addition, efforts of the TCRMA to get a Storm Water Management Plan adopted and approved by the SWRCB will improve the County's ability to monitor and improve storm water quality.

Since the level of storm drainage infrastructure varies significantly throughout the unincorporated areas of the County, and due to the time intensive efforts of evaluating the storm drain infrastructure of each community (at a General Plan level), this background report focuses on the current planning efforts of the County as a whole. The report identifies the current storm drainage system development strategy within the County, and what current strategies have led to, and a possible shifting of strategies that could result in more community-wide and/or regional storm water facilities that promote mixed use recreational/storm water facilities.

The largest storm drain system within unincorporated Tulare County is the Cutler-Orosi system. In this system, runoff is collected through a series of pipes and pump stations, the majority of which is transported and discharged to Sand Creek. A portion of the Cutler-Orosi storm drain system connects to a state storm drain system that runs along S.R. 63. It should be noted that development that occurred prior to 1972 generally does not have storm drainage infrastructure installed, as is the case for most of the unincorporated areas of the County. This has led to a need to improve such areas that lack drainage through redevelopment funding or other sources of available funding.

Storm drainage infrastructure within smaller unincorporated communities generally consists of underground and surface collection facilities that transport the runoff to local (on-site) retention ponds and/or local streams. The County Ordinance Code requires that local

retention facilities be located adjacent to the probable route of any future (master planned) drainage facility that might be constructed in order to facilitate efficient connection to such drainage facility when it is constructed. However, only recently has storm drainage master planning been accomplished in some communities, which will eventually lead to more community-wide facilities, and the abandonment (and potential reuse) of local retention facilities.

The use of individual, on-site storm water controls for each development is the typical approach in most communities for controlling storm water quantity and quality. The developer finances the design and construction of these controls, while ongoing maintenance and operation is the responsibility of the County through a dedicated easement or fee title. A potential alternative approach is to install a single (or a few if necessary) strategically located regional (community-wide) storm water controls within a particular sub-watershed rather than require on-site controls. Community-wide storm water controls are facilities designed to manage storm water runoff from multiple projects and/or properties through a local jurisdiction-sponsored program, where the individual properties may assist in the financing of the facility, and the requirement for on-site controls is either eliminated or reduced. A summary of some the advantages and disadvantages of community-wide storm water controls is provided in Table 7-4.

Table 7-4 Advantages and Disadvantages of Regional (Community-Wide) Storm Water Management

Measure of Effectiveness	Advantages	Disadvantages
Performance	Community-wide facility may allow more space intensive, but superior performing technology such as constructed wetlands or bio-swales.	If soil permits, infiltration technologies can perform best if decentralized throughout the basin – performance relies on sound maintenance practices.
Planning	Municipality has an opportunity to strategically locate investments to address priority water body or known water quality issues.	The municipality must take on the responsibility of determining where to site a facility based on priorities and opportunities. Large regional facilities may be difficult to site in urban areas.
Funding	Partnering may open up additional revenue sources to fund more effective regional facility.	Partnering may complicate facility financing and not fully fund the facility.
Maintenance	The municipality allocates staff to maintenance of a single (or few) public facilities, rather than several on-site facilities. Less mobilization required and increased assurance of maintenance over time.	Would require plan (agreement) to defer existing maintenance obligations of on-site facilities that would be abandoned as the result of a community-wide storm drainage system.
Community	In facility sitting and design, municipality can assist in implementing community development plans for open space, aquatic health, and recreation.	Community disagreement about use of public resources and sitting. Issues would need to be considered at the community plan level.

As outlined above, major advantages of community-wide drainage facilities include more efficient and cost effective maintenance, less mobilization, and they are more conducive to recreational facilities. Given the pros and cons outlined above, community-wide drainage strategies are not advantageous in all circumstances. In general, if a community-wide facility can offer environmental, cost or community benefits that outweigh the disadvantages, then a regional approach should be considered.

Municipalities play an important role in the shaping of communities through general and community planning processes. Community plans or other long term development plans typically specify areas targeted for future higher density development and other areas designated as green space to provide parks and protect environmental resources. Municipalities can often integrate open space goals with regional drainage facility design to meet multiple goals in limited space.

To successfully implement storm water management on a community-wide basis, a municipality must possess both (1) the authority to plan for and regulate development – typical of a local government, and (2) authority and responsibility for the quality and quantity of storm drainage, including compliance with any NPDES municipal storm water permit – typical of storm drain utility provider. Tulare County has this confluence of authority and responsibility. Several funding options may be available for funding of community-wide drainage facilities. The County might opt to build and fund regional drainage facilities using general municipal revenue or drainage-specific funds. Below is a summary of potential funding mechanisms.

- Use general municipal revenue, not associated with drainage rates or development options;
- Use general drainage utility rates. Costs could be spread over a larger service base;
- Create differential drainage utility rates reflecting the drainage service provided in geographical areas. Higher fees could be targeted to areas receiving or needing more intensive service; and
- Create drainage utility connection fees for new users of a community-wide facility. After a facility is built using

municipal authority and funds, drainage utility fees are charged to new users of the community-wide facility.

The following list identifies some the recent accomplishments of Tulare County in terms of improving storm water management in unincorporated areas primarily through Redevelopment Agency funding.

- In Cutler-Orosi, curb, gutter, and sidewalk design and construction was completed for the entire S.R. 63 alignment through the communities;

- A master plan for storm water drainage, air quality improvement, and recreation project was funded by a $35,000 CDBG Technical Assistance grant, including a biological study and some design work. Design work and construction of the storm water project was partially funded by CMAQ and USDA Rural Utility Services and Community Facilities. The project will be phased in 3 parts due to funding limitations but additional funds are being sought;

- A perpetually full storm water drainage basin was pumped and 11 ponding basins were cleared and disked, eliminating public nuisances in the Earlimart community;

- The Earlimart PUD has agreed to a joint powers storm water authority with the Richgrove CSD and the Poplar CSD to share resources, operations, maintenance and emergency response, pending a successful community-wide election approving the establishment of an assessment district;

- In the Goshen community, the Tulare County Redevelopment Agency completed a storm water drainage, air quality improvement and recreation project with a new ponding basin near the intersection of Betty Drive and Camp Drive. The ponding basin will be developed into a park. The park/ponding basin will also contain a baseball diamond and a football/soccer field;

- In the Pixley community, the Tulare County Redevelopment Agency completed an assessment of the existing downtown storm water system locating potential problems and developing potential solutions. Proposed improvements will alleviate existing safety hazards by reducing dust pollution

and by eliminating an unfenced collection/retention facility in the community; and

- A master storm water drainage plan was completed for the Poplar-Cotton Center community.

- In the Richgrove community, a multi-year storm water drainage, air quality improvement, and recreation project is being implemented. Pipelines, drainage inlets, catch basins, dual purpose storm water basin/recreation park and associated facilities are being funded with loans of $1.6 million from the USDA Community Facility and Rural Development programs, and a 2005 CDBG Public Works grant.

Tulare County can continue to strengthen its storm water management practices through the establishment of additional assessment districts or zones of benefit; continuing to work with the development community on the funding of infrastructure improvements on a community-wide level; identifying potential multi-use storm water/recreational sites through the community planning process; and continuing to aggressively pursue outside funding sources for the implementation of infrastructure improvements.

7.5 Solid and Hazardous Waste

Introduction

This section describes the general characteristics of the hazardous and solid waste facilities and service providers for the county.

Method

The information presented in this section is based on published reports and information provided by Tulare County.

Key Terms

- **Household Hazardous Waste.** Any unwanted or discarded materials that are disposed of in a separate waste facility (not a municipal solid waste facility) because of their potentially toxic composition. These include, but are not limited to: paints;

waste motor oil; non-commercial pesticides; aerosols; wood preservatives; and solvents.

- **Industrial Waste.** Process water discharged from industrial uses.
- **Municipal Waste.** Wastewater (sewage) flows produced by commercial and domestic types of uses.
- **Solid Waste.** Unwanted or discarded material that is not a liquid or gas. This includes organic uses; paper products; metals; glass; plastics; cloth; brick; rock; soil; leather; rubber; yard wastes; and wood, but not including: sewage and hazardous materials. Organic wastes and paper products comprise about 75 percent of the typical urban solid waste stream.
- **Solid Waste Generation Rates.** Generation rates used to determine the amount of solid waste in tons per year, generated by different land use types (residential, industrial and commercial).

Regulatory Setting

This section provides for the assessment of solid waste services in the county.

Existing Conditions

Solid Waste Facilities

Solid waste produced in Tulare County in 1999 was estimated to be 230,000 tons. The average estimated solid waste generation rates for residential, commercial, and industrial land uses in 1999 are as follows:

- **Residential.** 81,532 tons/year;
- **Commercial.** 116,086 tons/year; and
- **Industrial**. 36,575 tons/year.

Solid waste collection in Tulare County is divided into sections. These sections are determined by the Board of Supervisors with only one license for each section issued. Currently there are eight sections that

require a weekly pickup. The incorporated cities in Tulare County oversee solid waste collection within their city limits. Private companies offer solid waste collection services in other unincorporated areas of the county. Those companies currently are:

- Miramonte Sanitation;
- Pena Disposal, Inc.;
- Three Rivers Disposal;
- Allied Disposal;
- USA Waste (Waste Management);
- South Tulare-Richgrove; and
- Tule Trash.

Tulare County operates three active solid waste disposal facilities, or landfills: Visalia, Woodville, and Teapot Dome. These landfills serve all of Tulare County as well as parts of surrounding counties. Similarly, a small amount of solid waste from Tulare County is transported to surrounding county landfills. In addition, there are seven transfer stations located throughout the isolated rural areas of the county for the convenience of those residents who live outside of waste collection service areas. Figure 7-2 shows the locations of the landfills and transfer stations.

Teapot Dome (21063 Avenue 128, Porterville). The Teapot Dome disposal site is located on Avenue 128 east of Road 208. This site is attended and open to the public. It serves the City of Porterville and unincorporated areas of southern Tulare, and northern Kern Counties. The approximate amount of waste disposed at Teapot Dome in 2003 was estimated to be 63,000 tons.

Visalia (22466 Road 80, Visalia). The Visalia disposal site is located on the east side of Road 80 just north of Avenue 332. The site is attended and open to the public. It serves the Cities of Visalia, Farmersville, Dinuba, Exeter, Tulare, Woodlake, Fresno, and unincorporated areas of northern Tulare and southern Fresno Counties. The approximate amount of waste disposed at Visalia in 2003 was estimated to be 120,000 tons.

Woodville (19800 Road 152, Woodville). The Woodville disposal site is located on the east side of Road 152 south of Avenue 200. This site is attended and open to the public. It serves the Cities of Tulare,

Exeter, Famersville, Lindsay, Visalia, Woodlake, and unincorporated areas of central Tulare County. The approximate amount of waste disposed at Woodville in 2003 was estimated to be 68,000 tons.

Transfer Stations

The county also operates seven transfer stations that are located in rural areas for the convenience of the people who live near them. The transfer stations do not accept large volumes of waste. The county transports solid waste to the three landfills from the following transfer stations:

- Badger Transfer Station, east of Badger;
- Balance Rock Transfer Station, north of Balance Rock;
- Camp Nelson Transfer Station, northeast of Camp Nelson;
- Earlimart Transfer Station, north of Earlimart;

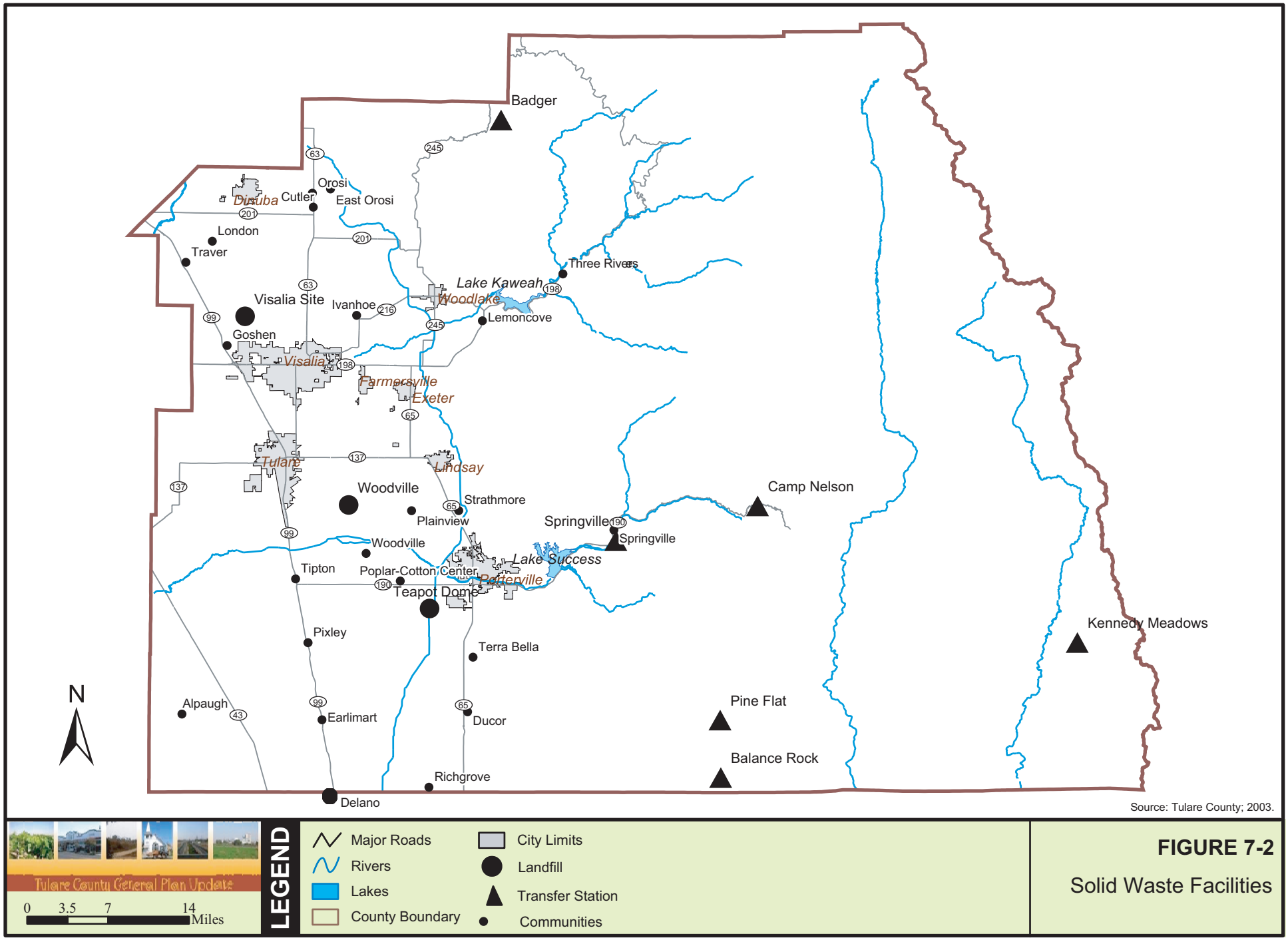


FIGURE 7-2

Solid Waste Facilities

- Kennedy Meadows Transfer Station, in the southeast region of the county;
- Pine Flat Transfer Station, north of Pine Flat; and,
- Springville Transfer Station, south of Springville.

Recycling Programs

In Tulare County, three jurisdictions have curbside recyclable collection and five have green waste collection service.

Tulare County landfills accept wood and green waste and tires for recycling purposes in addition to solid waste. In addition, the county maintains a list of active recycling sites for wood and green waste, glass, cans, paper, waste oil, concrete, asphalt, brick, ceramic tile and porcelain, iron & metal, usable furniture, clothing, house wares, appliances, and computer & television monitors.

Household Hazardous Waste Facilities

Household hazardous waste such as paint, waste motor oil, non-commercial pesticides, aerosols, wood preservatives, and solvents are collected through a public service program that provides education and services related to the reduction and collection of household hazardous waste. This Health and Human Services Agency Division provides services to all county residents through 50 or more weekly collection events held at the permanent collection facility in Visalia. The collection site for Tulare County is located at the Visalia City Yard, 335 N. Cain Street in Visalia. The locations, amounts, and other information on hazardous waste production and facilities is provided in Section 10.5.

7.6 Natural Gas and Electric Service

Introduction

This section describes the general characteristics of the natural gas and electrical services available to the county.

Methods

The information presented in this section is based on information provided by Southern California Edison, The Gas Company, and Pacific Gas & Electric.

Key Terms

There are no key terms for this section.

Regulatory Setting

This section provides for the assessment of natural gas and electric services in the county.

Existing Conditions

Southern California Edison provides electric service to the majority of Tulare County, including the majority of the San Joaquin Valley and the foothills. Natural gas service is primarily provided by The Gas Company (formerly Southern California Gas Company). Pacific Gas & Electric also serves northern Tulare County's electric needs on limited basis. The electrical facilities network includes both overhead and underground lines, with new development required to install underground service lines. All utility providers indicate that additional service should be available to new development, depending on the necessary load of the services requested.

7.7 Law Enforcement

Introduction

The purpose of this section is to summarize existing information regarding Tulare County law enforcement services and facilities.

Methods

The Tulare County Sheriff's Department provided the information for this section.

Key Terms

There are no key terms for this section.

Regulatory Setting

This section assesses the law enforcement protection services in the county.

Existing Conditions

The Tulare County Sheriff's Department currently has 448 sworn officers serving its unincorporated population (145,128), and generates a level of service ratio of 3.2 officers per 1,000 residents. The ratio is above the accepted standard of 2.0 officers per 1,000 residents set by the Federal Bureau of Investigation. The Sheriff's Department also has 186 non-sworn clerical and support staff amounting to a total Sheriffs Department staff personnel of 633 employees.

Law enforcement protection for the unincorporated county is divided into 22 areas with four stations. Table 7-4 shows the name and location of each station with the number of service areas that each station serves. As shown in the table, the Porterville substation serves the largest number of areas with 10 patrols, followed by the headquarters in Visalia with six, and Cutler-Orosi and Pixley, each with three areas.

Table 7-5. Sheriffs Department Patrol/Offices, Tulare County 2004

Number of Beat/Patrols	Station/Office	Address
3	Cutler-Orosi Substation	414 Road 128, Orosi, CA 93647
6	Headquarters Patrol	2404 W Buffel Ave., Visalia, CA 93291
3	Pixley Substation	161 N. Pine Street, Pixley, CA 93256
10	Porterville Substation	379 N Third Street, Porterville, CA 93257

Source: Tulare County Sheriff's Department; 2004

The Tulare County Sheriff's Department also operates four detention/corrections facilities. These are listed in Table 7-5 with their locations, average inmate populations, and the maximum inmate capacity. As shown in the table, over 90 percent of the available jail space is taken. In the case of the Men's Correctional Facility the available capacity is currently full. However there is unused capacity at the pre-trial facility and efforts are underway to find a user for that facility.

Table 7-6. Detention/ Correction Facilities in Tulare County

Facility	Address/Location	Average Inmate Population	Maximum Inmate Capacity	Existing Occupancy
Bob Wiley Detention Facility	36712 Road 112, Visalia, CA 93291	655	695	94.2%
Day Reporting Center	36000 Road 112, Visalia, CA 93291	601	-	-
Main Jail	2404 W Burrel Ave., Visalia, CA 93291	245	264	92.8%
Men's Correctional Facility	36168 Road 112, Visalia, CA 93291	302	302	100.0%

Source: Tulare County Sheriffs Department; 2004

7.8 Fire Protection

Introduction

The purpose of this section is to summarize existing information regarding Tulare County fire protection services.

Methods

The Tulare County Fire Department, the California Department of Forestry, and the Tulare County Geographic Information System provided the information for this section.

Key Terms

There are no key terms for this section.

Regulatory Setting

This section provides for the assessment of fire protection services in the county.

Existing Conditions

The California Department of Forestry and Fire Protection/Tulare County Fire Department (CDFFP/TCFD) serve 145,128 of Tulare County's population. As Table 7-6 shows, dispatchers reported 14,022

responses in 2002, averaging 38.4 calls a day. Fire occurrence data generated by the department indicate a direct relationship between high use areas of the county and fire occurrence. The population increase in the mountain areas have caused increased wildland urban interface problems as well. Structures are being built throughout wildland areas wherein vegetation fires can spread rapidly. Providing adequate fire protection to those structures has become a major undertaking.

The CDFFP/TCFD uses the 2003 Tulare Unit's Fire Management Plan to guide fire protection and prevention throughout the county.

Table 7-7. TCFD Service Calls (2002), Tulare County

Service Type	Number of Calls (2002)	Percent of Total
Fires	2,812	20.1
Public Assists	476	3.4
Medical Aid	7,353	52.4
Fire Menace Standby	449	3.2
Dispatch Incidents	1,142	8.1
Other Agency Assists	1,025	7.3
Ambulance	375	2.7
Smoke Check	390	2.8
Total	14,022	100.0

Source: Tulare County Fire Department

Service Response. As stated above, the Tulare County Fire Department responded to 14,022 calls for service in 2002. Table 7-6 organizes the total response calls by type and percentage. As the table shows, a majority of the calls were for medical emergencies (52 percent) followed by fire calls (20 percent). The remaining calls ranged from dispatch incidents (8.1 percent) to assisting other agencies (7.3 percent) to public assistance (3.4 percent).

In order to properly serve the county, the department must continually train its staff to respond to and provide emergency services as quickly as possible. The department uses an "attack" time protocol of less than 10 minutes to respond to 90 percent of the calls on the valley floor and less than 15 minutes on 75 percent of calls in the foothill and mountain areas.

Branch Operations. The Tulare County Fire Department operates conducts its operations from 35 stations throughout the county. Each

station is located in one of eight battalions. The entire department is operated from the Fire Department Administration Building located at 1968 South Lovers Lane in Visalia. The Tulare County Fire Department differentiates between regular fire stations and forest fire stations. A forest fire station, while a regular fire station is generally located on the valley floor or in an unincorporated community.

- **Fire Prevention Services and Programs.** The Tulare County Fire Department operates many programs to educate the public on fire related issues through education, engineering and enforcement.

- The Hazard Abatement Officer issues notices to property owners whose properties pose an imminent threat to public health, and/or safety.

- The Fire Protection Planning element enforces the Uniform Fire Code by conducting industrial and commercial occupancy inspections, and by providing plan review for new construction and remodeling projects.

- Fire Prevention delivers the Fire Department safety message via public service announcements of seasonal fire danger.

- Public presentations are conducted at the Porterville and Tulare County Fair, in addition, depart staff present to schools.

7.9 Schools

Introduction

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

Methods

The data presented in this section is based on data collected from the Tulare County Office of Education, the school districts that encompass the study area, and data from the California Department of Education website.

Key Terms

- **Alternative Schools.** These types of schools include continuation schools and schools that provide independent study, site based instruction, and instructional support to home schooled students.

Regulatory Setting

This section provides for the assessment of school facilities in the County.

Existing Conditions

A total of 48 school districts provide education throughout Tulare County, see Figure 7-3. Of the 48 school districts, seven are unified districts providing educational services for kindergarten through 12th grade. The remaining 41 districts consist of 36 elementary school districts and four high school districts. Many districts have only one school.

Total enrolment in Tulare County public schools has increased from about 80,000 to 88,300 students during a nine-year span from 1993 to 2002. On average, the growth rate has remained steady with annual increases approximating two percent.

A survey requesting information on existing school conditions, future expansion/construction plans and the districts' ability to meet expected growth was submitted to the districts. The result of the survey is organized by each district.

Elementary School Districts – Grades K-8

Allensworth Elementary School District. The Allensworth Elementary School District serves grades K-8 in the central region of Tulare County. The District, which has grown by an average of two to three students per year since 1993, has one school. The school operates on a traditional schedule with six teachers and has a maximum student capacity of 129. The District is in the process (as of 2003) of constructing a multi-purpose room, three classrooms, an office, kitchen, restrooms and playground for the elementary school.

Alta-Vista School District. The Alta Vista Elementary School District serves grades K-8 in the southwestern region of Tulare County. The

district, which has expanded by an average of 12 percent since 1993, has one school with an average daily attendance of 471 students. The school operates on a traditional schedule with 23 teachers and a maximum student capacity of 516. The City of Porterville has annexed a portion of the school district and has zoned three areas for future housing projects. The district has developed plans, approved by the

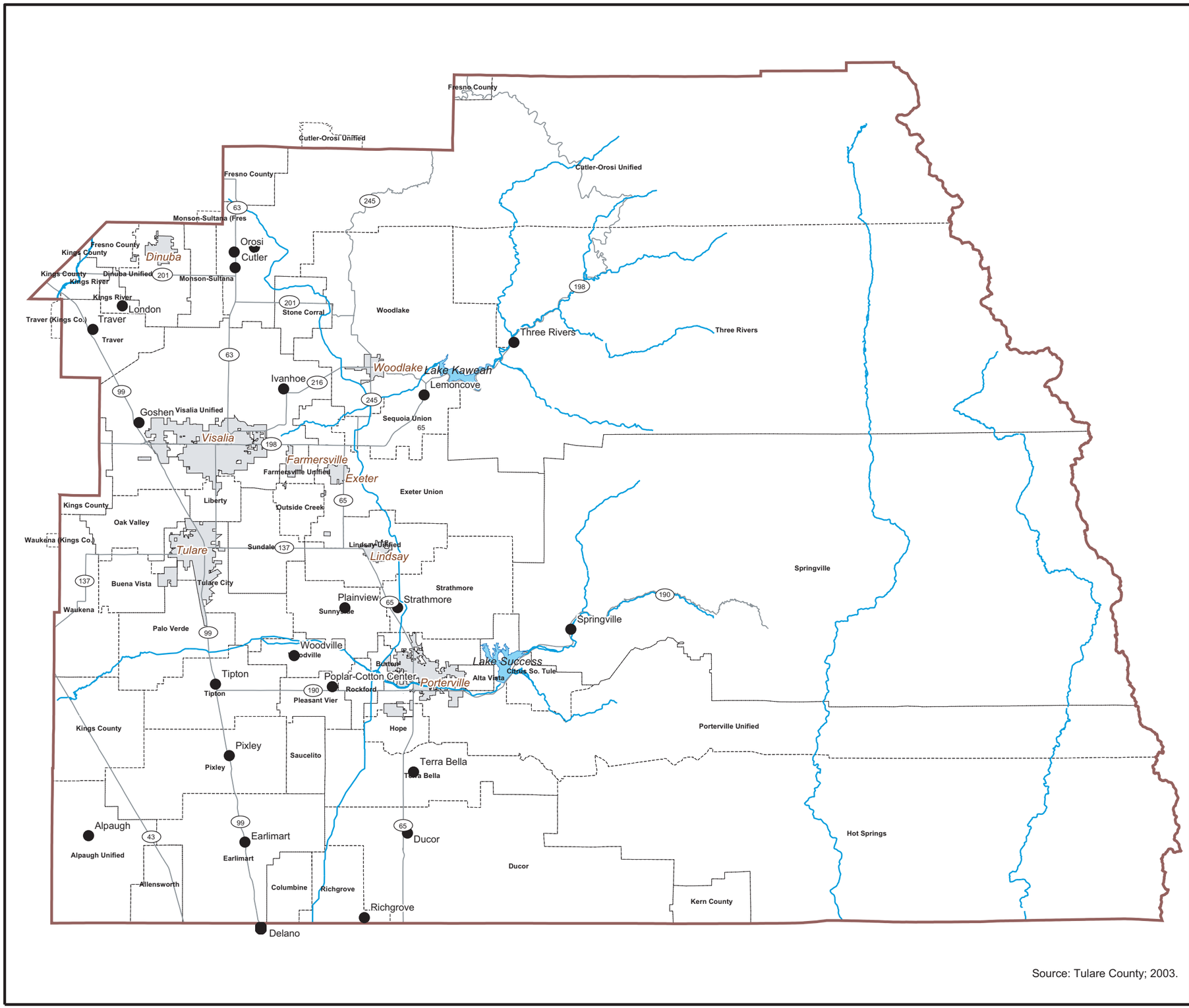
State Office of School Architects, for a new library. The future library construction will result in the old library being retrofitted as a classroom. Plans for a new classroom wing (3 classrooms) are being submitted to the State Office of School Architects in January 2004. With board approval, it is anticipated that construction for the new library will be completed by September 2004. Construction of the new classroom wing is pending approval of state funding for this project.

Buena Vista Elementary School District. The Buena Vista Elementary School District serves grades K-8 in the western region of Tulare County. The district, which has grown by 150 students since 1993, has one school with an average daily attendance of 165 students. The school operates on a traditional schedule with nine teachers and a maximum student capacity of 210. The district does not have any plans for expansion or construction in the foreseeable future and expects to meet the needs of the surrounding community.

Burton Elementary School District. The Burton Elementary School District serves grades K-8 in the southwestern part of Tulare County. The School District operates on a traditional schedule with 120 teachers. The campuses are currently operating at maximum capacity with an average combined daily attendance of 2,192 students. The district, which has grown by an average of 4.1 percent per year since 1993, has five schools:

- William R. Buckley Elementary serving grades K-4;
- Burton Elementary serving grades K-4;
- Burton Middle School serving grades 7-8;

Please see next page



Source: Tulare County; 2003.

LEGEND

- Major Roads
- Rivers
- Lakes
- County Boundary
- City Limits
- Communities
- School Disrtrict

N

0 5 10 20 Miles

FIGURE 7-3

School Districts Serving Tulare County

- Jim Maples Academy serving grades 5-6; and
- Oak Grove Elementary serving grades K-4.

District administrators expect to see growth continue at or above its historic rate and anticipate the need for additional school sites to accommodate this need. A sixth campus is pending funding from the Office of Public School Construction and is expected to begin construction in the summer of 2004. Work has also begun to identify a prospective site and funding sources for a seventh campus to meet future growth.

Citrus South Tule Elementary School District. The Citrus South Tule Elementary School District serves grades K-6 in the central region of Tulare County. The district has one school with an average daily attendance of 51 students.

Columbine Elementary School District. The Columbine Elementary School District serves grades K-8 in the southern region of Tulare County. The district, which has grown by an average of three percent per year since 1993, has one school with an average daily attendance of 183 students. The school operates on a traditional schedule, with nine teachers and a maximum student capacity of 245. There are no plans for any construction or facility improvements.

Ducor Elementary School District. The Ducor Elementary School District serves grades K-8 in the southern region of Tulare County. The district, which has had a decline in student enrollment since 1993, has one school with an average daily attendance of 210 students. The school operates on a traditional schedule, with nine teachers and a maximum student capacity of 275. There are no plans for expansion or construction in the foreseeable future, and the district has not identified any restraints to meeting projected needs generated by surrounding growth.

Earlimart Elementary School District. The Earlimart Elementary School District serves grades K-8 in the southwestern region of Tulare County. The School District operates on a traditional schedule with 81 teachers. Students graduating from Earlimart Middle School attend Delano High School. There is a maximum student capacity of 1,975, and an average daily attendance of 1,624 students. The district, which has increased by an average of 12.2 percent per year since 1993, has three schools:

- Earlimart Elementary serving grades K-3;

- Alila serving grades 4-5; and
- Earlimart Middle School serving grades 6-8.

Future plans for the District include the expenditure of $5.5 million in new construction eligibility from the state and approximately $1.2 million for modernization eligibility from the state. As of 2003, plans to utilize the funds were under way. Without state funding and facility construction, it is expected that classrooms would quickly become overcrowded.

Exeter Elementary School District. Exeter Elementary School District serves grades Pre-K-8 in the eastern region of Tulare County. The school district operates on both a modified traditional schedule and a rotating block schedule with 103 teachers. There is a maximum student capacity of 2,157, and an average daily attendance of 1,832 students. The district, which has declined in student enrollment since its 1996 reorganization, has four schools:

- Lincoln Elementary serving grades PreK-2;
- Rocky Hill Elementary serving grades 3-5;
- Wilson Middle School serving grades 6-8;
- Exeter Elementary Community Day serving grades 4-8.

District administrators are confident that future growth can be met with State Match funding on new construction. A multi-purpose room is planned for construction at Wilson Middle School in 2005 and a new middle school is planned for construction in 2012.

Hope Elementary School District. The Hope Elementary School District serves grades K-8 in the central region of Tulare County. The district, which has increased by an average of 14 percent per year since 1993, has one school with an average daily attendance of 105 students. The school operates on a traditional schedule, with five teachers and a maximum student capacity of 175. Graduating eighth graders attend Porterville High School, Monache High School, and Granite Hills High School. There are no plans for growth in the foreseeable future, since the district currently expects to meet the future needs of the community.

Hot Springs Elementary School District. The Hot Springs Elementary School District serves grades K-8 in the southeastern

region of Tulare County. The District operates on traditional-modified schedules with four teachers. There is a maximum student capacity of 50 and an average daily attendance of 31 students. No plans for future expansions are expected during the next ten years and the district expects to meet future growth. The district, which has grown by 25 students since 1993, has the following two schools:

- Hot Springs Elementary serving grades K-8; and
- Johnsondale Elementary serving grades K-8

Kings River Union Elementary School District. The Kings River Union Elementary School District serves grades K-8 in the north-western region of Tulare County. The district, which has decreased in population since 1993, has one school with an average daily attendance of 503 students. The school operates on a traditional schedule, with 25 full-time teachers and four part-time teachers. District administrators do not have any plans for new construction or expansion and do not foresee any constraints to the school's ability to meet area growth.

Liberty Elementary School District. The Liberty Elementary School District serves grades K-8 in the western region of Tulare County. The district has one school with an average daily attendance of 221 students. The school operates on a traditional schedule, with 12 teachers. The district contracts with the Visalia Unified School District for food service. The district recently (2003) doubled its cafeteria and district officials recognize the school is in need of major repair and renovation throughout all structures.

Monson-Sultana Joint Union Elementary School District. The Monson-Sultana Joint Union Elementary School District serves grades K-8 in the northwestern region of Tulare County. The district, which has grown in enrollment by an average of 11.5 percent per year since 1993, has one school with an average daily attendance of 410 students. The school operates on a traditional schedule, with 21 teachers and a maximum student capacity of 450. Currently (2003) a multi-purpose cafeteria is under construction and the district will be applying for modernization funds to renovate the old cafeteria into a library and computer lab.

Oak Valley Union Elementary School District. The Oak Valley Union Elementary School District serves grades K-8 in the western region of Tulare County. The district, which has grown by about 10

students per year since 1993, has one school with an average daily attendance of 430 students. The school operates on a traditional schedule, with 21 teachers and a maximum student capacity of 470. The district is currently (2004) constructing a new cafeteria/multi-purpose building and plans to modernize other school facilities in the future.

Outside Creek Elementary School District. The Outside Creek Elementary School District serves grades K-8 in the central region of Tulare County. The district, which has grown by 126 students since 1993, has one school with an average daily attendance of 120 students. The school operates on a traditional schedule, with five teachers and a maximum student capacity of 135. The district does not foresee any constraints in its current facilities to provide for expected area growth and does not have plans to construct additional facilities.

Palo Verde Union Elementary School District. The Palo Verde Union Elementary School District serves grades PreK-8 in the western region of Tulare County. The district, which has grown by an average of eight students per year since 1993, has one school (23 classrooms) with an average daily attendance of 546 students. The school operates on a traditional schedule, with 21 teachers and a maximum student capacity of 650. The district does not foresee any limits to their ability to provide educational services unless a drastic decline in student population occurs (at which point the majority of the federal and state financial aid would be reallocated to growing districts). Future plans for the district include the replacement of the existing auditorium and cafeteria with a new multi-purpose room. However, the timeframe for the project is unknown as of 2004.

Pixley Union School District. The Pixley Elementary School District serves grades K-8 in the southwestern region of Tulare County. The District has one school with an average daily attendance of 815 students. The school operates on a traditional schedule, with 49 teachers.

Pleasant View Elementary School District. The Pleasant View Elementary School District serves grades K-8 in the central region of Tulare County. The district, which has increased its enrollment by an average of 10.9 percent per year since 1993, has one school with an average daily attendance of 487 students. The school operates on a traditional schedule, with 24 teachers and a maximum student capacity of 750. District officials note that the student's dependence on the bus service is a main cause of difficulty at the school. The

district is considering a plan to either modernize and expand the existing school or build a new school, most likely in the community of Poplar.

Richgrove Elementary School District. The Richgrove Elementary School District serves grades K-8 in the southwestern region of Tulare County. The School District operates with 42 teachers. There is an average daily attendance of 743 students. The district has one elementary school and one middle school:

- Richgrove Elementary serving grades K-5; and
- Richgrove Junior High serving grades 6-8.

Rockford Elementary School District. The Rockford Elementary School District serves grades K-8 in the central region of Tulare County. The district has one school with an average daily attendance of 365 students.

Saucelito Elementary School District. The Saucelito Elementary School District serves grades K-8 in the southwestern region of Tulare County. The district, which has expanded its enrollment by 107 students since 1993, has one school with an average daily attendance of 115 students. The school operates on a traditional schedule, with 18 teachers and a maximum student capacity of 108. Students graduating from the school attend Porterville High School. There are no plans for expansion or construction in the foreseeable future and the district expects to meet the needs of future community growth.

Sequoia Union Elementary School District. The Sequoia Union Elementary School District serves grades K-8 in the central region of Tulare County. The district, which has not expanded its enrollment in the past ten years, has one school with an average daily attendance of 304 students. The school operates on a traditional schedules, with 16 teachers and a maximum student capacity of 370. Most of the students who graduate from Sequoia Union attend Exeter High School. The district does not have any plans for expansion or construction and expects to meet the demands of future growth with its existing facilities.

Springville Union Elementary School District. The Springville Elementary School District serves grades K-8 in the eastern region of Tulare County. The district, which has grown from 384 to 456 students from 1993 to 2003, has one school with an average daily attendance of 425 students. The school operates on a traditional

schedule, with 22 teachers and a maximum student capacity of 480. Graduating students attend Porterville High School. Future plans for Springville Union include the addition of three classrooms and the construction of a new middle school.

Stone Corral Elementary School District. The Stone Corral Elementary School District serves grades K-8 in the northwestern region of Tulare County. The district has one school with an average daily attendance of 114 students. The school operates with six teachers.

Strathmore Union Elementary School District. The Strathmore Elementary School District serves grades K-8 in the central region of Tulare County. The district operates with 37 teachers. There is an average daily attendance of 702 students. The district has one elementary school and one middle school:

- Strathmore Elementary serving grades K-5; and
- Strathmore Middle serving grades K-8.

Sundale Union Elementary School District. The Sundale Elementary School District serves grades K-8 in the central region of Tulare County. The district, which has grown by an average of five percent per year since 1993, has one school with an average daily attendance of 570 students. The school operates on a traditional schedule, with 30 teachers and a maximum student capacity of 1,300. Graduating students attend Tulare Union and Tulare Western High Schools. Future plans for existing facilities include the addition of a wing during the 2004-2005 year.

Sunnyside Union Elementary School District. The Sunnyside Union Elementary School District serves grades K-8 in the central region of Tulare County. The district, which has seen its enrollment decline by 125 students since 1993, has one school with an average daily attendance of 426 students. The school operates on a traditional schedule, with 25 teachers and a maximum student capacity of approximately 550. The district has plans to construct a new multi-purpose facility that would include a cafeteria and gym, but has not determined a specific timeframe for this project.

Terra Bella Union School District. The Terra Bella Elementary School District serves grades K-8 in the southern region of Tulare County. The district operates with 43 teachers. There is an average daily

attendance of 783 students. The district has one elementary school and one middle school:

- Terra Bella Elementary serving grades K-5; and
- Carl F. Smith Middle School serving grades 6-8.

Three Rivers Union Elementary School District. The Three Rivers Union Elementary School District serves grades K-8 in the eastern region of Tulare County. The district has one school with an average daily attendance of 218 students. The school operates with 11 teachers.

Tipton Elementary School District. The Tipton Elementary School District serves grades K-8 in the western region of Tulare County. The district has one school with an average daily attendance of 520 students. The school operates with 25 teachers.

Traver Elementary School District. The Traver Elementary School District serves grades K-8 in the northwestern region of Tulare County. The district, whose enrollment has fluctuated between 200 and 250 students since 1993, has one school with an average daily attendance of 228 students. The school operates on a traditional schedule, with 13 teachers and a maximum student capacity of 250. Students attend Kingsburg High School in Fresno County upon graduation. The district is currently (2003) building four new classrooms and anticipates issuing a Proposition 39 Bond to voters to construct a multi-purpose building. Constraints in meeting future demand are not expected.

Tulare City Elementary School District. The Tulare City Elementary School District serves grades PreK-8 in the western region of Tulare County. The district operates with 385 teachers. There is an average daily attendance of 7,139 students. The district has nine elementary schools and four middle schools as listed below.

Waukena Joint Union Elementary School District. The Waukena Joint Union Elementary School District serves grades K-8 in the western region of Tulare County. The district has one elementary school and an average daily attendance of 220 students. The school operates with 11 teachers

Woodlake Union Elementary School District. The Woodlake Union Elementary School District serves grades Pre K-8 in the central region of Tulare County. The district operates on a traditional schedule with

82 teachers. There is a maximum student capacity of 2,000 and an average daily attendance of 1,474 students. There are no immediate plans to expand or construct additional facilities. If the student population increases by 300, additional schools will be considered along with the reconfiguration of existing facilities. The district has one preschool, two elementary schools, and one middle school:

- Lulu Blair Kress serving grades PreK;
- Castle Rock serving grades 3-5;
- Francis J. White Learning Center serving grades K-2; and
- Woodlake Valley Middle School serving grades 6-8.

Woodville Union Elementary School District. The Woodville Union Elementary School District serves grades K-8 in the central region of Tulare County. There is one school in the District with an average daily attendance of 603 students (2003). The District has had a fluctuating enrollment since 1993 ranging from 660 to 590 students. The School operates on a traditional schedule, with 32 teachers and a maximum student capacity of 630. The School is in the process of modernizing it facilities with an expected finish date during 2004.

High School Districts

Allensworth High School District The Allensworth High School District serves grades 9-12 in the southwestern region of Tulare County. The district has one school with an average daily attendance of 20 students. The school operates with six teachers.

Exeter Union High School District. The Exeter Union High School District serves grades 9-12 in the eastern region of Tulare County. The district operates on both a compressed block schedule at one school. The district, which has increased its enrollment by one to two percent per year since 1993, has a maximum student capacity of 1,500, and an average daily attendance of 1,001. District administrators do not anticipate any constraints to the school's ability to meet future area growth. A multi-purpose room is planned for continuation education in 2010.

Strathmore Union High School District. The Strathmore Union High School District serves grades 9-12 in the central region of Tulare County. The district operates on a traditional schedule with 22

teachers. There is a maximum student capacity of 750 and an average daily attendance of 443 students. The district, which has grown by 400 students since 1993, has two high schools:

- Frazier High (Continuation) serving grades 9-12; and
- Strathmore High serving grades 9-12.

A majority of the students who attend high school in the district are products of Strathmore Middle School and Sunnyside Elementary School. The district does not identify any impediments on its current service facilities nor does it expect future growth in the area to cause any burden on the existing facilities. There are no plans for future construction.

Tulare Joint Union High School District. The Tulare Joint Union High School District serves grades 9-12 in the western region of Tulare County. The district, which has expanded its enrollment by an average of 1.9 percent per year since 1993, has two high schools, two continuation schools, one independent study, and one adult school with a district average daily attendance of 4,200 students. The district operates on traditional and block schedules, with 170 teachers and a maximum student capacity of 1,785 for Tulare Union, 2,063 for Tulare Western, and 150 for Tulare Tech Prep. All elementary schools located in the City of Tulare act as feeder schools for the district including:

- Oak Valley Elementary School;
- Waukena Elementary School;
- Buena Vista Elementary School;
- Palo Verde Elementary School;
- Tipton Elementary School;
- Pixley Elementary School;
- Sundale Elementary School;
- Liberty Elementary School;
- Tulare Christian School; and
- St. Aloysius School.

Future plans for the district involve the construction of a new high school in August of 2008 to accommodate 1,500 to 1,600 students. While under construction, it is estimated that an additional 25 portable classrooms will be needed to meet student capacity in the District.

Woodlake Union High School District. The Woodlake Union High School District serves grades 9-12 in the central region of Tulare County. The district operates on a traditional schedule with 33 teachers. There is a maximum student capacity of 800 and an average daily attendance of 825 students. The district has two high schools:

- Bravo Lake High (Continuation) serving grades 9-12; and
- Woodlake Union High serving grades 9-12.

Woodlake Union High School generated its base enrollment from the Three Rivers Union School District, Stone Corral School District, and Woodlake Union School District. Future construction is not planned for the district, but additional relocatable classrooms may be added as needed. If the district should increase by 100 students, an additional classroom wing would be needed.

Unified School Districts

Unified school districts administer elementary, intermediate and high schools with in their boundaries. The seven unified school districts in Tulare County are described below.

Alpaugh Unified School District. The Alpaugh Unified School District serves grades K-12 in the southwestern region of Tulare County. The district operates three schools with an average daily attendance of 293 students. The school operates with 16 teachers.

Cutler-Orosi Unified School District. The Cutler-Orosi Unified School District serves grades K-12/Adult in the northern region of Tulare County. The district has five elementary schools, two high schools, two continuation high schools, and one adult school with a district average daily attendance of 3,784 students. The district operates with 205 teachers.

Dinuba Unified School District. The Dinuba Unified School District serves grades K-12/Adult in the northern region of Tulare County. The district, which has grown by 767 students since 1993, has six

elementary schools, two high schools, and one adult school with a district average daily attendance of 5,300 students and a maximum student capacity of 4,100. The following list includes the schools within the district and the grades each serves:

- Grand View Elementary serving grades K-6;
- Jefferson Elementary serving grades K-6;
- Lincoln Elementary serving grades K-6;
- Roosevelt Elementary serving grades K-6;
- Washington Intermediate serving grades 7-8;
- Wilson Elementary serving grades K-6;
- Dinuba High serving grades 9-12;
- Sierra Vista serving grades 9-12; and
- Dinuba Adult serving adult education.

Schools within the district operate on traditional schedules, with a total of 255 teachers. In 2002, a $14.9 million bond was passed to construct and improve school facilities within the district over a 15-year period. The purpose of the projects is to accommodate for growth and modernize existing facilities.

Farmersville Unified School District. The Farmersville Unified School District serves grades K-12 in the central region of Tulare County. The district operates on a modified traditional schedule, with 117 teachers and a maximum student capacity of about 3,060. The district has gained between 75 and 100 students since 1993 and has an average daily attendance of 2,188 students. There are three elementary schools, one high school and one continuation school:

- J.E. Hester serving K-2 grades;
- George L. Snowden serving 3-5 grades;
- Farmersville Junior High serving 6-8 grades
- Farmersville High serving 9-12 grades; and
- Deep Creek Academy serving continuation students.

Future plans for Farmersville Unified include the completion of Freedom Elementary in the Spring of 2004. The area of greatest need has been identified at Deep Creek Academy.

Lindsay Unified School District. The Lindsay Unified School District serves grades K-12 in the central region of Tulare County. The district operates on a traditional schedule, with 186 teachers and a maximum student capacity of 3,586. The district, which has grown by an average of 40 students per year since 1993, has four elementary schools, one high school, one continuation school and an average daily attendance of 3,555 students. These schools are as follows:

- Steve Gervey Junior High serving grades 7-8;
- Jefferson Elementary serving grades K-6;
- Lincoln Elementary serving grades K-6;
- Washington Elementary serving grades K-6;
- J.J. Cairns Continuation serving grades 9-12; and
- Landsay High serving grades 9-12.

Construction and facility improvements in the district include the recent (2003) completion of four science classrooms, the construction of a multiuse/gym, and the planned construction of a new high school by 2007.

Porterville Unified School District. The Porterville Unified School District serves grades K-12/Adult in the eastern region of Tulare County. The District has 9 elementary schools, two middle schools, five high schools, one continuation high school, and one adult school with a district average daily attendance of 12,487 students. The district operates with 621 teachers.

Visalia Unified School District. The Visalia Unified School District serves grades PreK-12/Adult in the eastern region of Tulare County. The district, which has grown by 1,469 students since 1993, has 20 elementary schools, five middle schools, four high schools, two continuation/alternative schools, one school for the disabled, and one adult school. The average daily attendance in the district is 25,223 students. The schools operate on traditional schedules, with 1,153 teachers.

Future plans at Visalia Unified include rehabilitation, demolition, and new construction to update school facilities and increase student capacity. According to the district, future area growth will require extensive facilities improvements in excess of $24 million to accommodate new students.

Colleges

College of the Sequoias. The College of the Sequoias provides a general education curriculum. Located in central Visalia, the college has an average attendance of 8,600 full-time students, 10,300 total enrollment, and has grown by about 400 students per year since 1993. The school operates on the semester system, with a maximum student capacity of 13,000. Service relationships include direct facility use by CSU Fresno. Future plans include the construction of a Learning Center, Science Building, Gym, and Agricultural Research Center. The college does not see any constraints on its ability to serve its projected student capacity, if bond funding is approved. Two recent bonds failed to receive enough votes for funding.

Porterville College. Porterville College provides a general education college course curriculum. Located in central Porterville, the college has an average attendance of 3,028 full-time students with a capacity of 4,000 full-time and a total enrollment of 6,500 students. The school operates on the semester system and has had an average growth rate of about eight percent per year since 1993. Porterville College has program relationships with Bakersfield College, the University of La Verne, College of the Sequioas, and California State University Fresno. Immediate facility expansion includes the completion of a 10,000-square foot Health Careers building, the remodel and addition of 16,000 square feet to the library, and the remodel and addition of 3,000 square feet to the Fitness Center. Long range plans include over $50 million in additional facilities construction with the use of the recently passed General Obligation (GO) facility bond (Spring 2003).

County Operated Schools

The Tulare County Office of Education (TCOE) also operates additional special needs schools throughout the county. These schools provide education opportunities for adults, troubled youth, vocational education, and other specialized groups. TCOE operates the following court, community, charter, and special education schools:

- Juvenile Detention Facility Court School;
- Landsay Community School;
- Mid-County Community School;
- Eleanor Roosevelt Community Learning Center;
- Success Community School;
- Superior Community School;
- Youth Facility Court School;
- Tulare County Organization for Vocational Education;
- La Sierra Charter High School (Visalia);
- La Sierra Charter High School (Porterville);
- La Sierra West (TAPP);
- L.B. Hill Learning Center;
- Maple Learning Complex;
- Occupational Training Program; and
- Yettem Learning Center.

Border County Public Schools

The following schools and districts are located in neighboring counties. These are included because their service district boundaries cross into Tulare County, providing service to Tulare County residents.

Clay Joint Elementary School District. The Clay Joint Elementary School District is located in Fresno County and extends across the northwestern border of Tulare County. The district, which has increased by about six students per year over the past ten years, has an average daily attendance of 225 students. Only one school is currently in the district. This school has 11 teachers and a maximum student capacity of 225 students. The school operates on a traditional schedule. District administrators identify both available land and

overcrowding as potential constraints to the districts ability to meet future growth.

Corcoran School District. The Corcoran School District is located in Kings County and extends across the southwestern border of Tulare County. The district, which has increased by about 100 students over the past ten years, has an average daily attendance of 3,159 students. District administrators do not see any constraints to the district's ability to meet area growth and does not have plans for any new construction.

Delta View Joint Union School District. The Delta View Joint Union School District is located in Kings County and extends across the western border of Tulare County. The district has increased by only two students since 1993 for a total student population of 100. The district maintains only one school on a traditional schedule with a maximum enrollment capacity of 115. There are five teachers at the school. District administrators identify funding and their current facilities as constraints to meet future area growth. No plans for construction are currently being reviewed.

Linns Valley Poso Flat School District. The Linns Valley Poso Flat School District is located in Kern County and extends across the southeastern foothill and mountain areas of Tulare County. The district, which has declined in its student body enrollment over the past ten years, has one elementary school with an average daily attendance of 38 students. The district operates on a traditional schedule, with two teachers and a maximum student capacity of 120. District administrators do not see any constraints to the district's ability to meet area growth and do not have plans for any new construction.

Non-Public Schools

There are 27 private schools listed with the Department of Education in Tulare County. Most of these schools are operated by religious organizations. Over half (14) of the private schools in Tulare County are located in Visalia, with the others located in Exeter, Delano, Tulare, Porterville, Woodlake, Strathmore, Springville, Goshen, and Orosi.

7.10 Communications

Introduction

This section describes the general characteristics of the communication systems for the county.

Methodology

The information provided in this section has been obtained from Tulare County Department and communications service providers.

Key Terms

- **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.
- **Fiber Optics.** Fiber optics is the technology of transferring information, for example, in communications or computer technology, through numerous thin, flexible glass or plastic tubes (optical fibers) using modulated light waves. Information is transmitted in the form of coded pulses.
- **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

This section provides for the assessment of communications services in the county.

Existing Conditions

A total of five telephone companies provide services in Tulare County: AT&T, Ducor, SBC, Sprint, and Verizon. These companies provide long distance calling, wireless services, Internet access, and other business solutions to residential and commercial consumers.

The main impact communications services have on the county is the service availability. Hard lines must be allowed rights-of-way and the continued growth of cellular telephones will require improved service areas and more cell towers. In addition, fiber optic cable has been installed in the urban areas of the county, mainly within incorporated cities. Newly emerging technologies, such as wireless internet, will play a role in the advancing information industries that will continue to grow.

7.11 Court Services

Introduction

This section describes the general characteristics of the court service systems for the county and provides an assessment of these services.

Methods

The information provided in this section has been obtained from the Tulare County Superior Court.

Key Terms

There are no key terms for this section.

Regulatory Setting

This section provides for assessment of Court services in the county.

Existing Conditions

In response to the Trial Court Facilities Act of 2002 (SB 1732), the authority and responsibility of the planning, construction, and acquisition of trial court facilities is now administered by the Judicial Council of California. Currently (October 2003) these responsibilities are still under the direction of the Tulare County Superior Court. However, this responsibility will expire by June 30, 2007, with an agreed plan of transition of county-owned court facilities to the state.

The Tulare County Courts system is currently composed of six courthouses. Three courthouses are located in the City of Visalia and one facility is located in each of the cities of Tulare, Dinuba, and Porterville, as Table 7-9 indicates. The Tulare County Superior Court

does not have any impending construction or acquisitions for facilities expansions.

Table 7-8. Tulare County Courts

Courthouse	Address	Phone
Juvenile Justice Facility	11200 Ave 368, Room 201, Visalia	559 713-3157
Family Law Facilitator	1612 W. Mineral King, Suite C, Visalia	559 737-4422
Dinuba	640 S. Alta Avenue, Dinuba	559 591-5815
Porterville	87 East Morton, Porterville	559 782-4710
Tulare	425 East Kern P.O. Box 1136, Tulare	559 685-2550
Visalia	County Civic Center (221 Mooney Blvd.), Visalia	559 733-6348

The Master Plan for the Tulare County Superior Court defines programs of future capital improvements projects for courts in Tulare County.

7.12 Library Services

Introduction

This section describes the general characteristics of library facilities and services for the county.

Methods

The information provided in this section has been obtained from the Tulare County Public Library System.

Key Terms

There are no key terms for this section.

Regulatory Setting

This section provides for the assessment of library services in the county.

Existing Conditions

The Tulare County Public Library System is comprised of interdependent branches, grouped by services, geography and usage

patterns to provide efficient and economical services to the residents of the county. At present, there are 14 regional libraries and one main branch. Table 7-10 shows the locations and service hours of the libraries in Tulare County.

Table 7-9. Tulare County Libraries, 2003

Branch	Address	Service Hours (2003)
Alpaugh	3816 Avenue 54 Alpaugh, CA 93201-0069	Thu 10 am – 1 pm, 2 pm – 6 pm
Dinuba	150 South I Street Dinuba, CA 93618-2399	Mon 10 am -1 pm; 2 pm – 6 pm. Tue Noon – 5 pm; 6 pm – 8 pm. Fri 10 am – 1 pm; 2 pm – 6 pm.
Earlimart	780 East Washington Earlimart, CA 93219-2153	Mon 10 am – 1 pm, 2 pm – 6 pm. Tue 10 am – 1 pm, 2 pm – 6 pm. Fri 10 am – 1 pm, 2 pm – 6 pm.
Exeter	230 East Chestnut Exeter, CA 93221-1712	Mon 10 am – 1 pm; 2 pm – 6 pm. Wed Noon – 5 pm, 6 pm – 8 pm. Fri 10 am – 1 pm; 2 pm – 6 pm.
Ivanhoe	15964 Heather Ivanhoe, CA 93235-1253	Tue 10 am – 1 pm, 2 pm – 6 pm
Lindsay	165 North Gale Hill Street Lindsay, CA 93247-2507	Mon 10 am – 1 pm, 2 pm – 6 pm. Tue 10 am – 1 pm, 2 pm – 6 pm. Thu Noon – 5 pm, 6 pm – 8 pm.
Cutler-Orosi	12646 Avenue 416 Orosi, CA 93647-2018	Mon 10 am – 1 pm, 2 pm – 6 pm. Wed 10 am – 1 pm, 2 pm – 6 pm
Pixley	300 North School Pixley, CA 93256-1011	Inquire
Porterville	41 W. Thurman Avenue Porterville, CA 93257	Mon – Thur 9 am – 9pm Fri 9 am – 6 pm Sat 9 am – 5 pm
Springville	35800 Highway 190 Springville, CA 93265-0257	Mon 10 am – 12 pm, 1 pm – 6 pm. Wed Noon – 5 pm, 6 pm – 8 pm
Strathmore	19646 Road 230 Strathmore, CA 93267-0595	Tues 10 am – 1 pm, 2 pm – 6 pm Thu 10 am – 1 pm, 2 pm – 6 pm
Terra Bella	23825 Avenue 92 Terra Bella, CA 93270-0442	Fri 10 am – 1 pm, 2 pm – 6 pm
Three Rivers	42052 Eggers Drive 216 Three Rivers, CA 93271-0216	Tue 10 am – 1 pm, 2 pm – 6 pm. Thu 10 am – 1 pm, 2 pm – 6 pm.
Tipton	301 East Woods Avenue Tipton, CA 93272-0039	Wed 10 am – 1 pm, 2 pm – 6 pm
Tulare	113 North F Street Tulare, CA 93274	Mon 10 am – 6 pm Tue 10 am – 9 pm Wed 10 am – 6 pm Thur 10 am – 9 pm Fri 10 am – 2pm Sat 10 am – 5 pm
Visalia	200 West Oak Avenue Visalia, CA 93291-4993	Mon 10 am – 8 pm. Tue 10 am – 8 pm. Wed 10 am – 8 pm. Sat10 am – 5 pm.
Woodlake	400 West Whitney Woodlake, CA 93286-1298	Wed 10 am – 12 pm, 1 pm – 6 pm. Thu 10 am – 1 pm, 2 pm – 6 pm

7.13 Hospital and Ambulance Services

Introduction

This section describes the general characteristics of the hospital and ambulance facilities services for the county.

Methods

The information provided in this section has been obtained from the State of California Emergency Medical Services Authority, Kaweah Delta Hospital, Sierra View Hospital, and Tulare District Hospital.

Key Terms

There are no key terms for this section.

Regulatory Setting

This section provides for the assessment of hospital and ambulance services in the county.

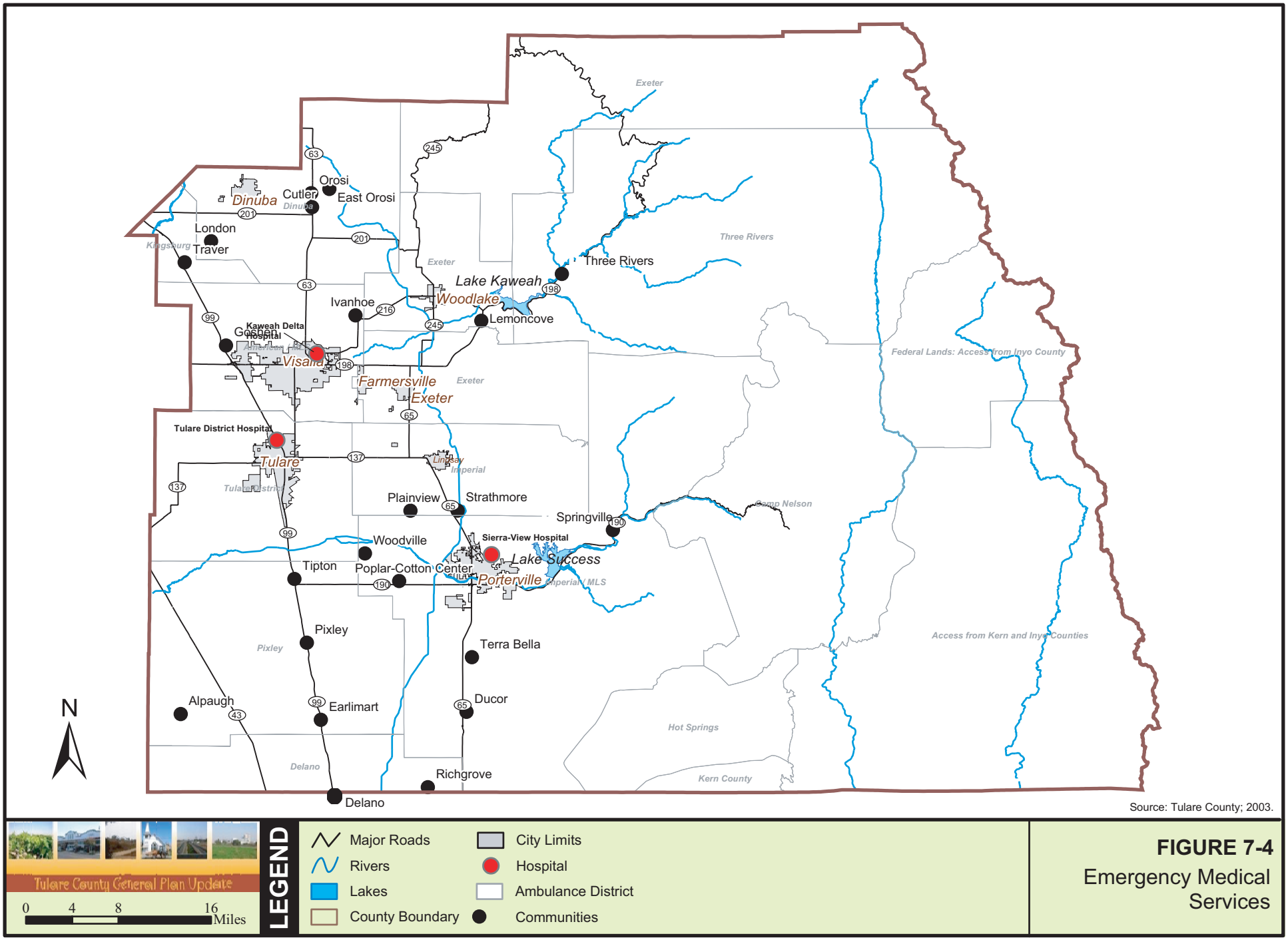
Existing Conditions

Tulare County receives emergency medical services from three hospitals. Table 7-11 shows the three existing hospitals in Tulare County. The first and largest, Kaweah Delta, is located in the City of Visalia. This hospital serves an average of 60,000 patients per year with 504 licensed beds. Sierra View, located in the City of Porterville, served about 8,000 patients in 2002 with total patient service of 157 beds. Finally, Tulare District Hospital, located in the City of Tulare, served over 5,600 patients in 2002. Figure 7-4 shows the locations of the three hospitals and ambulance districts in the county.

Table 7-10. Tulare County Hospitals

Hospital	Location	Number of Licensed Beds	Average Number of Patients Served
Kaweah Delta	400 W. Mineral King, Visalia	504	60,000
Sierra-View	465 W. Putnam Ave. Porterville	157	8,000
Tulare District	869 Cherry Street, Tulare	112	5,600

Source: Kaweah Delta Hospital, Sierra View Hospital, and Tulare District Hospital



Source: Tulare County; 2003.

FIGURE 7-4
Emergency Medical Services

Tulare County is served by nine emergency medical service providers, seven private companies and two public agencies. Service is provided throughout the county from 11 locations and a total of 48 ambulances. Table 7-12 lists the names, locations, units, and auspice for ambulance service providers in Tulare County.

Table 7-11. Tulare County Ambulance Districts

Name	Street	Location	Units	Auspice
American Ambulance	2017 East Noble	Visalia	5	Private
California Hot Springs Ambulance	Rte. 4 Box 681	Calif. Hot Springs	1	Private
Camp Nelson Vol. Ambulance	1500 "A" Nelson Dr.	Camp Nelson	2	Private
Dinuba Fire Dept.	496 E. Tulare St.	Dinuba	4	Public
Exeter District Ambulance	215 Crespi, No. 2	Exeter	3	Public
Imperial Ambulance	22 Cottage	Porterville	6	Private
Imperial Ambulance	22 North Cottage	Porterville	6	Private
LifeStar Ambulance	140 N West St.	Tulare	7	Private
LifeStar Ambulance	140 N West St.	Tulare	6	Private
Mobile Life Support/AMR	1232 E. Mineral King Ave.	Visalia	7	Private
Three Rivers Ambulance	P.O. Box 253	Three Rivers	1	Private

Source: State of California Emergency Medical Services Authority http://www.emsa.ca.gov/Data_inf/tulare2001.asp

7.14 Social Services

Introduction

This section describes the general characteristics of the social service systems for the county.

Methods

The information provided in this section has been obtained from the Tulare County Health and Human Services Agency.

Key Terms

There are no key terms for this section.

Regulatory Setting

This section provides for the assessment of social services in the county.

Existing Conditions

The Tulare County Health and Human Services Agency (HHSA) provides social services to residents in need of assistance throughout Tulare County. The agency serves adults and children's health through public health, mental health, community, emergency medical attention, and family services. These social, health, and human services are offered through programs designed to meet the needs of a diverse population. In addition, HHSA has service and program relationships with county, school, state, local, and other organizations.

Approximately 130,000 people are served by the agency each year at 58 locations throughout the county. In addition to the facilities administered by the agency, over 220 private, public and non-profit agencies and groups provide contractual services ranging from primary care to animal control.

The benefiting demographic sectors of these services include:

- Children (0 to 17 years old) 40,500 per year;
- Adults (18 to 64) 64,500 per year; and
- Seniors (65 and older) 25,000 per year.

Tulare County Health and Human Services Agency reported that a county population increase of 2.3 percent annually is projected to occur over the next 20 years. In addition, the report anticipates an increase in the HHSA workforce of 3.5 percent or 1,300 employees to meet the projected need. The report expects to require a need for 446,437 additional square feet of service space by the year 2020 to meet its service needs. Table 7-13 further apportions the projected service space need by the county.

Potential constraints to the ability to serve additional county residents, as a result of new area development, will likely result in overused facilities in need of repair. Currently (2003) some structures, both leased and county-owned, used do not comply with state or federal access or safety requirements. In addition, many facilities are unable to meet space requirements.

Table 7-13. Tulare County Health and Human Services, Facilities Space Needs

City	Year 2000 (Sq/Ft)	Year 2010 (Sq/Ft)	Year 2020 (Sq/Ft)
Dinuba	36,389	50,610	66,730
Farmersville	11,265	10,650	13,950
Lindsay	20,093	29460	39,070
Porterville	66,936	83,130	109,680
Tulare	92,021	133,270	176,650
Visalia	218,985	368,630	489,550
Woodlake	720	720	960
Total	446,409	676,470	896,590

Source: Daniel C. Smith and Associates/Kitchell, 2001

To meet the needs of the county, HHSA has adopted a service consolidation strategy to enhance its response to current (2003) and future population and workforce growth. Consolidation of services is being implemented to improve accessibility, efficiency, reduce overcrowding, and lower costs. HHSA plans to improve service by developing one-stop facilities where multiple services are available. These facilities are planned to be located in Dinuba, Porterville, Tulare, and Visalia.