

4.13 PUBLIC SERVICES AND UTILITIES

This section describes existing public services and utilities in Amador County. It sets forth demands for water, wastewater, solid waste, electricity, fire protection services, law enforcement services, school facilities and services, and parks and recreational facilities. Impacts are evaluated in relation to increased demand on public services and utilities associated with implementation of the Draft General Plan and actions needed to provide the services that could potentially lead to physical environmental effects.

Potential environmental impacts associated with water quality and new stormwater drainage facilities are addressed in Chapter 4.9, “Hydrology and Water Quality.”

4.13.1 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Americans with Disabilities Act

The Americans with Disabilities Act (ADA) of 1990 (42 United States Code [USC] 12181) prohibits discrimination on the basis of disability in public accommodation and state and local government services. Under the ADA, the Architectural and Transportation Barriers Compliance Board issues guidelines to ensure that public facilities, public sidewalks, and street crossings are accessible to individuals with disabilities. Typical ADA improvements include creating parking spaces for handicap use, restroom modifications, door hardware requirements, and lighting upgrades. Play areas, meeting rooms, park restrooms, and other public buildings and park structures must comply with ADA requirements. Park facilities under the proposed project would be required to be ADA compliant.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Senate Bills 610 and 221

Senate Bill (SB) 610 (Section 21151.9 of the Public Resources Code and Section 10910 et seq. of the Water Code) requires the preparation of “water supply assessments” (WSA) for large developments (e.g., for projects of 500 or more residential units, 500,000 square feet of retail commercial space, or 250,000 square feet of office commercial space). These assessments, prepared by “public water systems” responsible for service, address whether there are adequate existing or projected water supplies available to serve proposed projects, in addition to urban and agricultural demands and other anticipated development in the service area in which the project is located. Although SB 610 is not directly applicable to the Draft General Plan, it would potentially apply to individual projects that could proceed under the Draft General Plan. (SB 610 does not require a WSA to be prepared for the Draft General Plan because SB 610 does not include a General Plan as a project subject to SB 610 requirements, and because the Legislature intended General Plan and water supply coordination to be accomplished through the Urban Water Management Plan process.)

Where a WSA concludes that insufficient supplies are available, the WSA must lay out steps that would be required to obtain the necessary supply. The content requirements for the assessment include, but are not limited to, identification of the existing and future water suppliers and quantification of water demand and supply by source in 5-year increments over a 20-year projection. This information must be provided for average normal, single-dry, and multiple-dry years. The absence of an adequate current water supply does not preclude project approval, but does require a lead agency to address a water supply shortfall in its project approval findings.

If the proposed project is approved, additional complementary statutory requirements, created by 2001 legislation known as SB 221 (Government Code Section 66473.7), would apply to the approval of tentative subdivision maps for more than 500 residential dwelling units. This statute requires cities and counties to include, as a condition of

approval of such tentative maps, a “water supply verification.” The verification, which must be completed by no later than the time of approval of final maps, is intended to demonstrate that there is a sufficient water supply for the newly created residential lots. The statute defines sufficient water supply as follows:

... the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection period that would meet the projected demand associated with the proposed subdivision, in addition to existing and planned future uses, including, but not limited to, agricultural and industrial uses.

A number of factors must be considered in determining the sufficiency of projected supplies:

- ▶ the availability of water supplies over a historical record of at least 20 years;
- ▶ the applicability of an urban-water-shortage contingency analysis that includes action to be undertaken by the public water system in response to water supply shortages;
- ▶ the reduction in water supply allocated to a specific water-use sector under a resolution or ordinance adopted or a contract entered into by the public water system, as long as that resolution, ordinance, or contract does not conflict with statutory provisions giving priority to water needed for domestic use, sanitation, and fire protection; and
- ▶ the amount of water that the water supplier can reasonably rely on receiving from other water supply projects, such as conjunctive use, reclaimed water, water conservation, and water transfer, including programs identified under federal, state, and local water initiatives.

California Water Conservation Act

SBx7-7 was enacted in November 2009 and requires each urban water supplier to select one of four water conservation targets contained in California Water Code Section 10608.20 with the statewide goal of achieving a 20% reduction in urban per capita water use by 2020. Under SBx7-7, urban retail water suppliers (in this case, Amador Water Agency [AWA]) are required to develop water use targets and submit a water management plan to the California Department of Water Resources (DWR) by July 2011. The plan must include the baseline daily per capita water use, water use target, interim water use target, and compliance daily per capita water use (AWA has incorporated this information into its 2010 Urban Water Management Plan [UWMP], adopted in 2011). In addition, the State will make incremental progress towards this goal by reducing per capita water use by at least 10% by December 31, 2015.

Urban Water Management Act

The California Urban Water Management Planning Act of 1983 requires that each urban water supplier, 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, shall prepare, update and adopt its urban water management plan at least once every five years on or before December 31, in years ending in 5 and 0. The plan describes and evaluates sources of water supply, including groundwater; projected water needs; conservation; implementation strategy and schedule. The AWA, the major water supplier for the County, prepared an UWMP in 2010. (See “Regional and Local Plans, Policies, Regulations, and Laws,” below for further discussion.)

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the California Legislature passed the California Integrated Waste Management Act (CIWMA) of 1989 (Assembly Bill [AB] 939), effective January 1990 (CIWMA 2007). According to the CIWMA, all cities and counties were required to divert 25% of all solid waste from landfill facilities by January 1, 1995, and 50% by January 1, 2000. Each city is required to develop solid waste plans demonstrating integration of the CIWMA plan with the County

plan. The plans must promote (in order of priority) source reduction, recycling and composting, and environmentally safe transformation and land disposal.

California Energy Commission

SB 1037, signed into law in September 2005, mandates that all publicly-owned utilities (POUs) report to the California Energy Commission (CEC) on cost-effective and feasible energy efficiency programs. AB 2021 was chaptered in 2006 and built upon SB 1037, further requiring POUs to develop energy efficiency targets on a triennial basis. The CEC is authorized to set targets for all municipal utilities. POUs do not report to the California Public Utilities Commission, which oversees investor-owned utilities.

California Public Utilities Commission Decision 95-08-038

The California Public Utilities Commission (CPUC) Decision 95-08-038 contains the rules for the planning and construction of new transmission facilities, distribution facilities, and substations. The decision requires permits for the construction of certain power line facilities or substations if the voltages would exceed 50 kilovolts (kV) or if the substation would require the acquisition of land or an increase in voltage rating above 50 kV. Distribution lines and substations with voltages less than 50 kV do not need to comply with this decision; however, the utility must obtain any nondiscretionary local permits required for the construction and operation of these projects. CEQA compliance is required for construction of facilities constructed in accordance with the decision.

California Occupational Safety and Health Administration

In accordance with California Code of Regulations Title 8 Sections 1270 “Fire Prevention” and 6773 “Fire Protection and Fire Equipment,” the California Occupational Safety and Health Administration has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials; fire hose sizing requirements; restrictions on the use of compressed air; access roads; and the testing, maintenance, and use of all fire fighting and emergency medical equipment.

California Department of Education

The California Education Code contains various provisions governing the siting, design, and construction of new public schools (e.g., Education Code Sections 17211, 17212, and 17212.5). In addition, to help focus and manage the site selection process, the California Department of Education’s (CDE’s) School Facilities and Planning Division has developed screening and ranking procedures based on criteria commonly affecting school selection (Education Code Section 17251[b], 5 CCR Section 14001[c]). The foremost consideration in the selection of school sites is safety. Certain health and safety requirements are governed by state statute and CDE regulations. In selecting a school site, a school district should consider the factors including proximity to airports, proximity to high-voltage power transmission lines, presence of toxic and hazardous substances, hazardous air emissions, and facilities within one-quarter mile, and proximity to railroads.

State School Funding

Education Code Section 17620 authorizes school districts to levy a fee, charge, dedication, or other requirement against any development project for the construction or reconstruction of school facilities, provided that the district can show justification for levying of fees. Government Code 65995 limits the fee to be collected to the statutory fee (Level I) unless a school district conducts a Facility Needs Assessment (Government Code Section 65995.6) and meets certain conditions. These fees are adjusted every 2 years in accordance with the statewide cost index for Class B construction as determined by the State Allocation Board.

SB 50 (1998) instituted a new school facility program by which school districts can apply for state construction and modernization funds. This legislation imposed limitations on the power of cities and counties to require

mitigation for school facility impacts as a condition of approving new development. Proposition 1A/SB 50 prohibits local agencies from using the inadequacy of school facilities as a basis for denying or conditioning approvals of any "...legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property..." (Government Code Section 65996[b]). Additionally, a local agency cannot require participation in a Mello-Roos for school facilities; however, the statutory fee is reduced by the amount of any voluntary participation in a Mello-Roos. Satisfaction of the Proposition 1A/SB 50 statutory requirements by a developer is deemed to be "full and complete mitigation."

Quimby Act

The Quimby Act (Government Code Section 66477) was established by the California Legislature in 1965 to preserve open space and parkland in rapidly urbanizing areas of the state. The Quimby Act allows cities and counties to establish requirements for new development to dedicate land for parks, pay an in-lieu fee, or perform a combination of the two.

The Quimby Act provides two standards for the dedication of land for use as parkland. If the existing area of parkland in a community is greater than 3 acres per 1,000 residents, then the community may require dedication based on a standard of up to 5 acres per 1,000 persons residing in the subdivision. If the existing amount of parkland in a community is less than 3 acres per 1,000 residents, then the community may require dedication based on a standard of only 3 acres per 1,000 persons residing in the subdivision. The Quimby Act requires a city or county to adopt standards for recreational facilities in its general plan if it is to adopt a parkland dedication or fee ordinance. See "Regional and Local Plans, Policies, Regulation, and Laws," below, for Amador County standards for recreational facilities. It should be noted that the Quimby Act applies only to the acquisition of new parkland; it does not apply to the physical development of new park facilities or associated operations and maintenance costs. Therefore, the Quimby Act effectively preserves open space needed to develop park and recreation facilities, but it does not ensure the development of the land or the provision of park and recreation services to residents. In addition, the Quimby Act applies only to residential subdivisions. Nonresidential projects could contribute to the demand for park and recreation facilities without providing land or funding for such facilities. Quimby Act fees are collected by the local agency (park district, city, or county) in which the new residential development is located.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Mokelumne, Amador and Calaveras Integrated Regional Water Management Plan

The Mokelumne, Amador, and Calaveras integrated regional water management planning region was formed based on a cooperative effort by Amador Water Agency (AWA), Calaveras County Water District (CCWD), Amador County, City of Jackson, City of Sutter Creek, City of Plymouth, Amador Regional Sanitation Authority (ARSA), and East Bay Municipal Utility District (EBMUD). These organizations represent the partnering agencies for the M/A/C IRWM planning region. These agencies entered into a Memorandum of Understanding (MOU) dated October 3, 2006 for the purpose of coordinating water resources planning and implementation activities. Also included within the IRWMP region are many other entities or stakeholders with interests in regional water planning, including Calaveras County, Calaveras Public Utilities District, Eastern San Joaquin Groundwater Banking Authority, City of Ione, Jackson Valley Irrigation District, City of Lodi, Mokelumne River Forum, Mokelumne Cosumnes Watershed Alliance, and Pacific Gas and Electric Company (PG&E). (RMC 2006:2-1.)

The *Mokelumne, Amador and Calaveras Integrated Regional Water Management Plan* (IRWMP) (RMC 2006) was adopted in 2007. The IRWMP established regional goals that focus on improved water supply reliability, water quality protection, environmental preservation and enhancement, flood protection strategies, and development of a forum for regional communication. The IRWMP identified and prioritized 46 capital projects involving water, wastewater, or drainage improvements. These projects would be developed based on the

IRWMP's implementation program. The implementation plan provides criteria for evaluating a project's technical and economic feasibility; measures for evaluating the success of the plan implementation; structure for data collection and dissemination; alternatives for project funding; formats for regular plan updates; and strategies for continued stakeholder participation (RMC 2006: iv). The IRWMP was updated again in January 2013 (Upper Mokelumne River Watershed Authority 2013).

Amador Water Agency Urban Water Management Plan

The *Amador Water Agency Urban Water Management Plan (UWMP)* (AWA 2011) was prepared in 2010 by AWA and adopted by the AWA Board of Directors on August 25, 2011. The UWMP was prepared in accordance with the Urban Water Management Act as defined by the California Water Code, Division 6, Part 2.6, and Sections 10610 through 10657. The plan addresses water supply and demand issues, water supply reliability, water conservation, water shortage contingencies, and recycled-water usage within the AWA service area and incorporates the requirement under SBx7-7 to reduce per capita water demands.

In Amador County only 3% of the public domestic or treated water supply is from groundwater; 97% of the total supply is from the Mokelumne River. Two small service areas, Lake Camanche Area and La Mel Heights, use groundwater (AWA 2011:4-18). Due to the small volume of groundwater the AWA uses and the expected substantial decrease in groundwater use as Lake Camanche Village changes to surface water use, ~~the AWA has not written a groundwater management plan (AWA 2011:4-18)~~ accepted a groundwater supply study and Integrated Regional Groundwater Management Plan for the Lake Camanche Water Improvement District in 2012 (Dunn 2012).

Amador County Regional Wastewater Management Plan

The *Amador County Regional Wastewater Management Plan* (ECO:LOGIC Engineering 2005) was developed to provide dischargers within the County guidance on what growth expectations should be taken into consideration for planning purposes and where this growth is most likely to occur. The Regional Plan provides guidance to dischargers within the County with the intent of avoiding the creation and unnecessary operation of "problem wastewater plants" that result in burdensome wastewater rates. The Regional Plan provides a roadmap to allow the various wastewater dischargers in the County to come together and respond to both current and future service demands, technology trends, and regulatory requirements in a unified, effective manner. The Regional Approach for Reuse Study was completed in 2013 (Aegis Engineering Management & Zw3 2013).

Amador County Park and Recreation Master Plan

In October 2003, the Amador County Recreation Agency (ACRA) was formed as a joint powers authority consisting of Amador County; the Amador County Unified School District (ACUSD); the cities of Amador, Ione, Jackson, Plymouth, and Sutter Creek; the Community Services District for Volcano; and County Service Area Number 3 in Camanche. Together, these agencies represent the recreation needs in the County. (Amador County 2007: ISP-33.)

Because Amador County is rural except for the small cities and the utility service districts, a typical urban classification system does not properly reflect local conditions. As a result, ACRA has established a "parks concept" identifying goals for recreational facilities in Amador County (ACRA 2006: 5-2).

- ▶ Provide a neighborhood or community park within convenient walking distance of most residents. The walking distance is assumed a maximum of one half mile.
- ▶ Provide 10-15 acre multi-use community parks in communities or population centers exceeding 3,000 residents. These parks are to provide all of the facilities and services including sport fields for that community.

- ▶ Provide smaller five acre neighborhood parks in neighborhoods where no park exists. The basic purpose of these parks is to provide open space and passive park activities.
- ▶ Develop a sport field complex suitable for competitive play and tournaments.

Amador County Stormwater Management Regulations

Title 15 of the County Code (“Buildings and Construction”) describes the County’s regulations, provisions, and ordinances for stormwater management and enforcement. Storm drainage and flood control are addressed in Chapter 15.16 “Floodplain Management Regulations.” Section 15.16.200 “Floodways” contains performance standards such that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge and flood damage shall be minimized. Chapter 17.48 sets forth standards for drainage facilities, and Section 17.90.120 “Drainage Standards” for streets and roads.

4.13.2 ENVIRONMENTAL SETTING

WATER SUPPLY, CONVEYANCE, AND TREATMENT FACILITIES

The following sections describe water supply, conveyance, and treatment facilities for the County’s water providers, including AWA, Jackson Valley Irrigation District (JVID), Pine Grove Community Services District (CSD), River Pines Public Utility District (PUD), Drytown County Water District (CWD), Fiddletown CSD, Kirkwood Meadows PUD, Volcano CSD, Rabb Park CSD, ~~and EBMUD,~~ and First Mace Meadow Water Association. Many residences and businesses also rely on private groundwater wells for water supply. Exhibit 4.13-1 illustrates service areas of water providers in the County.

Amador Water Agency

The AWA was formed in 1959 as an independent district for the conservation, development, control and use of water for the public good in Amador County. AWA has prepared the *Amador Water Agency Urban Water Management Plan* (2011) to addresses water supply and demand issues, water supply reliability, water conservation, water shortage contingencies, and recycled-water usage within the AWA service area and incorporate the requirement under SBx7-7 to reduce per capita water demands.

AWA’s boundaries encompass the entire County, although AWA’s water and wastewater service areas are smaller. The following section identifies the existing and projected water demands within the AWA service area, identifies available surface and groundwater supplies to meet those demands, discusses the reliability of water supplies to meet the projected demands based on information in AWA’s UWMP and identifies water conveyance and treatment facilities.

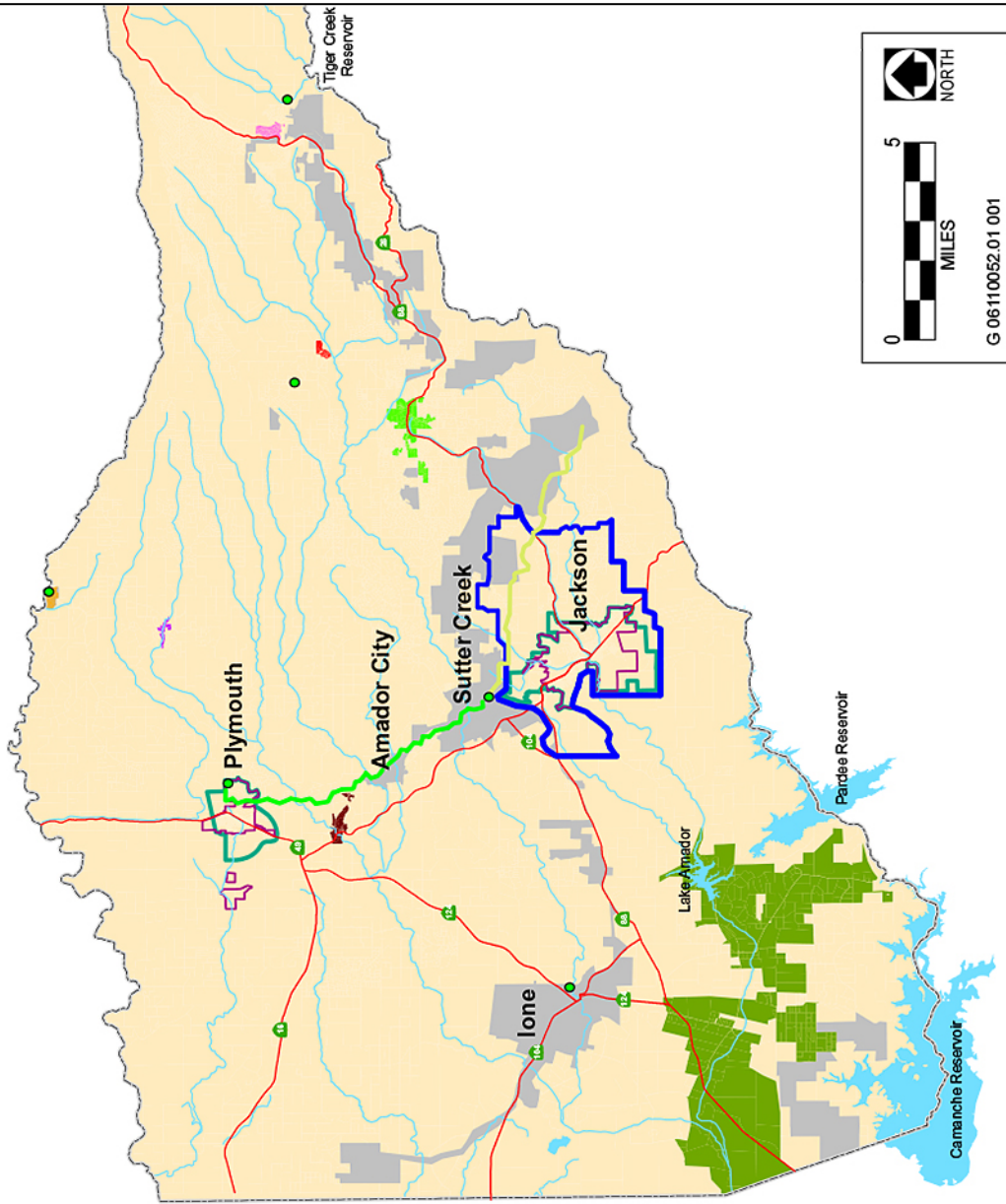
Amador Water Agency Service Area

Currently, AWA conveys wholesale and retail treated and untreated surface water to five water purveyors throughout much of Amador County, groundwater to Lake Camanche Village and La Mel Heights, as well as raw water to agricultural users. AWA provides treated water directly to the following distinct service areas:

- ▶ The **Amador Water System (AWS)** receives water from the Mokelumne River via Lake Tabeaud. The AWS service area was served by Pacific Gas & Electric (PG&E) until AWA purchased the system in 1985. Treated water supplied to AWS customers comes from the Ione WTP located in Ione or the Tanner WTP located in Sutter Creek. The service area covers over 450 square miles and serves Amador City, Ione, Sutter Creek, Sutter Hill and their vicinities, and portions of Ridge Road and New York Ranch Road. The Agency also provides wholesale water through the AWS to the cities of Jackson and Plymouth and Drytown CWD. In addition, the system also supplies raw water for agricultural, industrial, commercial and domestic irrigation needs to both public facilities and individual raw water customers. (AWA 2011: 2-5 and 2-6.)

AMADOR COUNTY GENERAL PLAN

Figure 4.13-1: Water Service Areas



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- Drytown County Water District
- Fiddletown CSD
- Jackson Valley Irrigation District
- Pine Grove CSD
- Rabb Park CSD
- River Pines PUD
- Volcano CSD
- City Sphere
- City Limits
- AWA Water Service Area
- Major Water Bodies
- Streams
- County Boundary
- State Highway
- Water Treatment Plant
- Planned Plymouth Pipeline
- AWS Transmission Pipeline
- Jackson Service Area

- ▶ The Central Amador Water Project System (CAWP) receives water from the Mokelumne River via Pacific Gas and Electric PG&E's Tiger Creek Afterbay. Water supplied to CAWP customers is treated at the Buckhorn WTP located in Pioneer. The AWA's Gravity Supply Line (GSL) is currently under construction. The GSL will replace the existing transmission system. Instead of pumping water from Tiger Creek Afterbay, water will be diverted at the Tiger Creek Regulator Reservoir. This reservoir (owned by PG&E) is at an elevation where water can flow downhill through a 6.6-mile pipeline to the Buckhorn WTP. ~~It is anticipated that the GSL will be completed by October 2014.~~ The GSL was completed in 2015. The CAWP provides wholesale treated water to several upcountry providers (First Mace Meadows Water Association, Pine Grove CSD, and Rabb Park CSD). In addition to delivering wholesale water, the AWA also retails domestic water in the communities of Jackson Pines, Pine Acres, Pioneer, Ridgeway Pines, Ranch House, Silver Lake Pines, the Sunset Heights area, Buckhorn, Red Coral, River View, Pine Park east, Gayla Manor, Toma Lane, and Sierra Highlands. (AWA 2011:2-6.)
- ▶ The **Lake Camanche Village** service area provides water service to 733 homes and small commercial businesses. AWA currently provides treated groundwater in this area. (AWA 2011:2-7.)
- ▶ The **La Mel Heights** service area includes 57 connections in the La Mel Heights subdivision. AWA currently provides treated groundwater in this area. (AWA 2011:2-8.)

Although not classified as a water purveyor, Mule Creek State Prison also purchases water from AWA. AWA also provides contract maintenance services to the Drytown CWD and River Pines PUD, and Pine Grove CSD. (Policy Consulting Associates 2014:231.)

Existing and Projected Water Demands for Amador Water Agency

The following discussion summarizes text from the UWMP and describes AWA's surface water demands for existing and proposed land uses within the AWS and CAWP; surface water demands associated with treated and raw water sales, water sales to other agencies, and system water losses; and groundwater demands for existing and proposed land uses within La Mel Heights and Lake Camanche Village.

Existing and Projected Water Demand by Sector

Projected water demands used in the UWMP were calculated based on the projected growth (residential, commercial/institutional, and industrial) shown in the City of Jackson Housing Element, City of Plymouth Housing Element, City of Ione General Plan, City of Sutter Creek Housing Element, Amador Local Agency Formation Commission Municipal Services Review, and the City of Sutter Creek Wastewater Master Plan (AWA 2011: 3-10). When calculating future water demands, AWA projected demands were based on the assumed reduction in per capita daily use determined from planning for and implementing actions associated with SBx7-7. As shown on Table 4.13-1 the current estimated water demand for the AWA is 8,407 acre-feet per year (afy) (including 1,377 afy sold to other agencies) and the total estimated water demand at 2030 is anticipated to be 12,356 afy (including 2,116 afy sold to other agencies).

Existing and Projected Surface and Groundwater Demand

Table 4.13-2 summarizes current and projected amounts of surface water and groundwater that will be used to meet the total water demand within the AWA service area between 2010 and 2030 as shown in Table 4.13-1, above. For planning purposes, AWA assumed that demands do not change from the normal year demands during single-dry or multiple-dry year scenarios (AWA 2011: 5-29).

Surface water is used to meet residential, commercial/institutional, and industrial water demands within the AWA's AWS and CAWP service areas and is sold to Drytown CWD, Mace Meadows Water Association, Pine Grove CSD, Rabb CSD, and the Cities of Plymouth and Jackson. AWA's total surface water demand in 2010 was 8,111 afy and the estimated surface water demand by 2030 is anticipated to be 11,775 afy. (AWA 2011: 4-19 and 4-20.)

Water Demand Sector	2010	2015	2020	2025	2030
Developed Land Uses					
Single-Family Residential	1,790	1,988	2,493	2,811	3,150
Multifamily Residential	161	193	253	295	337
Commercial/Institutional	1,089	1,311	1,711	1,968	2,220
Industrial	89	97	117	144	172
Water Demand Subtotal	3,129	3,590	4,574	5,218	5,879
Sales to Other Water Agencies ¹	1,377	1,482	1,787	1,941	2,116
Water System Losses	3,901	3,980	4,137	4,248	4,362
Total Water Demand	8,407	9,052	10,498	11,407	12,356
Notes: afy = acre-feet per year, AWA = Amador Water Agency					
¹ The AWA provides wholesale treated water to several providers, including Drytown CWD, Mace Meadows Water Association, Pine Grove CSD, Rabb Park CSD, and the Cities of Plymouth and Jackson.					
Source: AWA 2011: Tables 3-1 to 3-10					

Component of Water Demand	2010	2015	2020	2025	2030
Surface Water ¹	8,111	8,683	10,056	10,896	11,775
Groundwater (La Mel Heights) ²	16	20	23	23	23
Groundwater (Lake Camanche Village) ³	280	349	419	488	558
Groundwater Demand Subtotal	296	369	442	511	581
Total Water Demand	8,407	9,052	10,498	11,407	12,356
Notes: afy = acre-feet per year, AWA = Amador Water Agency					
¹ Surface water is used to meet water demands of the AWS and the CAWP and is sold to other providers, including Drytown CWD, Mace Meadows Water Association, Pine Grove CSD, Rabb CSD, and the Cities of Plymouth and Jackson.					
² Buildout of the La Mel Heights area is anticipated to occur by 2020 and groundwater would continue to be pumped from existing wells within this community.					
³ The Lake Camanche Village area desires to phase out the use of groundwater by 2015; however, surface water rights have not yet been identified and this table reflects that all water demands for Lake Camanche Village would be met with groundwater.					
Source: AWA 2011: Table 4-3					

Groundwater wells in La Mel Heights and Lake Camanche Village are used to meet water demands in those communities. Buildout of La Mel Heights is anticipated to occur by 2020 and groundwater would continue to be pumped from existing wells within this community. A 2012 groundwater study for the Lake Camanche Village area concluded that basin overdraft could be avoided through proper management, and that the available water supply at Lake Camanche Village exceeds demand by over 8,000 af (Dunn 2012: 3). AWA's total groundwater demand in 2010 was 296 afy and the estimated groundwater demand by 2030 is anticipated to be 581 afy. (AWA 2011: 4-19 and 4-20.)

Water Supply Sources for AWA

The following discussion identifies and characterizes the surface water and groundwater supply sources that will be used to meet projected demands for the AWA. In addition, the future use of recycled water within the AWA is discussed and potential future water supplies are identified.

Surface-Water Supplies

Surface water accounts for approximately 97% of the AWA's total water supply. Surface water is the sole supply source for both the AWS and the CAWP and is obtained from the Mokelumne River watershed. In 1985, AWA acquired the AWS system from PG&E, and uses PG&E's pre-1914 water rights to 15,000 afy, or a maximum diversion rate of 30 cubic feet of water per second (cfs), of water from the Mokelumne River that is stored at Lake Tabaud. Water is transferred into the AWS via the recently completed Amador Transmission Pipeline. (AWA 2011: 4-17, Burr Consulting 2008b: II-203)

In 1978, AWA entered into an agreement with PG&E for the use of PG&E facilities to store and divert water for the CAWP water system under post-1914 appropriative water rights for 1,150 afy from the Mokelumne River at the Tiger Creek Afterbay. The Central Amador Water Project water supply is authorized pursuant to a water right permit issued by the State Water Resources Control Board in 1979 that allows an annual diversion of 1,150 acre-feet of North Fork Mokelumne River water, with storage of 1,600 acre-feet. AWA uses PG&E facilities for the diversion and storage of the North Fork Mokelumne River water pursuant to an agreement between the parties initially entered into in 1975. The Central Amador Water Project water rights have a 1927 priority. AWA is currently working to obtain additional surface water rights for the CAWP system which would expand the surface water diversions to 2,200 afy. (AWA 2011: 4-17)

Groundwater Supplies

Groundwater accounts for approximately 3% of AWA's total supply and is only used in the communities of La Mel Heights and Lake Camanche Village. Existing groundwater conditions and pumping capacity of groundwater wells within La Mel Heights and Lake Camanche Village is discussed below.

La Mel Heights

AWA operates ~~two~~ one groundwater well that provides water service to ~~57~~ 60 connections in the La Mel Heights subdivision. The well pumps water from a groundwater aquifer that is not defined in the DWR's Bulletin 118. The well ~~has~~ has a safe yields of 50 afy, ~~64 afy,~~ 64 afy, or 31 gallons per minute (gpm), ~~or and 40 gpm, respectively~~ and groundwater is treated at the Improvement District 3 WTP (AWA 2011: 4-18, Burr Consulting 2008b: II-205). ~~A second groundwater well is available as a back-up source of groundwater. These wells, while each having sufficient capacity to provide water service to the 60 connections, are operated on an alternating basis which provides redundancy and back up.~~

Lake Camanche Village

AWA provides groundwater to 733 homes and small commercial businesses in the Lake Camanche Village. The groundwater system currently consists of four operating wells that have a combined pumping capacity of ~~4,306 afy (809 gpm): Well 6 produces 161 afy (100 gpm), Well 9 produces 500 afy (310 gpm), Well 12 produces 145 afy (90 gpm), and Well 14 produces 500 afy (350 gpm).~~ Groundwater is treated by the addition of chlorine at each well head located throughout the Lake Camanche Village Improvement District 7. ~~(AWA 2011: 4-18 and 5-29.)~~ 936 afy (580 gpm): Well 6 produces 242 afy (150 gpm), Well 9 produces 282 afy (175 gpm), Well 12 produces 170 afy (105 gpm), and Well 14 produces 242 afy (150 gpm). Groundwater quality and well operation has been challenging. AWA is seeking a surface water supply to augment groundwater.

~~Well 14 has experienced groundwater quality issues and operates at a reduced pumping capacity. A plan has been developed to rehabilitate Well 14 but is pending approval of a rate increase to provide the revenue needed to implement the plan. (AWA 2011: 4-18 and 5-29, Burr Consulting 2008b: II-205.)~~

Groundwater for the Lake Camanche Village is supplied from wells pumping from the Cosumnes Subbasin (DWR Basin Number 5-22.16). The Cosumnes Subbasin corresponds to the San Joaquin Valley groundwater basin (DWR Basin Number 188-80). The Cosumnes Subbasin is approximately 439 square miles and is bound on the north and west by the Cosumnes River, on the east by the bedrock of the Sierra Nevada, and on the south by the Mokelumne River. (AWA 2011: 4-18.)

The groundwater storage capacity of the Cosumnes Subbasin is estimated at approximately 6.0 million afy and basin inflows are estimated to be about 269,500 afy. Water leaves the subbasin through subsurface flow (144,600 afy), urban extraction (35,000 afy), and agricultural extraction (94,200 afy). Based on this water balance, the subbasin is in overdraft by about 4,300 afy resulting in a loss of approximately 4,300 afy. (AWA 2011: 4-19 and 5-25.)

AWA completed a Groundwater Sustainability Study for the Lake Camanche Village service area in 2012, as directed by the State Department of Public Health. The study found that sustainable yield in the Lake Camanche Village area was approximately 9,950 to 14,850 afy for normal to drought years. The study estimated that projected 20-year demand assuming buildout of all parcels in Lake Camanche Village would be 917 afy. (Dunn 2012: 146.)

Recycled Water

AWA currently owns, operates and maintains 10 geographically separate wastewater treatment plants throughout Amador County. However, none of the systems currently recycle water to reduce raw or potable water demands. The only treated wastewater that meets recycled water standards within the AWA's service area is collected and treated at the City of Ione's Castle Oaks Wastewater Reclamation Plant, and the treated tertiary effluent is currently used to irrigate the Castle Oaks Golf Course.

AWA recognizes the benefit of recycled water to reduce raw and potable water demands and provide a means of wastewater effluent disposal. AWA prepared a regional water reuse plan in 2013 which identifies options to maximize water recycling by developing a regional recycled water supply in the Jackson-Sutter Creek area. (Aegis Engineering Management 2013)

The ARSA service area (Ione, Amador City/Sutter Creek/Martell area), and Jackson could develop programs to use recycled water for agricultural irrigation, commercial landscape irrigation, residential or multifamily dual plumbed landscape irrigation, construction water, industrial process water, recreational impoundments, golf course irrigation and wildlife habitat enhancement (see "Wastewater Collection, Conveyance, and Treatment," below for further discussion). (AWA 2011: 4-23.)

Future Water Supplies

AWA, CCWD, EBMUD, and San Joaquin County are investigating the feasibility of increasing storage at Lower Bear River Reservoir by raising Lower Bear River Dam to provide an additional firm water supply and improve dry year yield, thereby helping meet future water supply needs. Raising Lower Bear River Dam is being considered as part of the larger Mokelumne Inter-Regional Conjunctive Use Project (IRCUP). The IRCUP could use a combination of groundwater banking, exchanges and transfers among project partners to result in a sustainable improvement in water supply reliability. PG&E is considering a separate project, independent of the IRCUP, that would also entail raising the Lower Bear River Dam would also to increase power generation at existing downstream hydroelectric power plants and is currently being considered by PG&E independently of IRCUP. (AWA 2011: 4-24.) Most currently, raising the Lower Bear River Reservoir is being considered in MokeWISE, the Mokelumne Watershed Interregional Sustainability Evaluation Program, which is in progress (Upper Mokelumne River Watershed Authority undated).

Existing and Projected Water Supplies for AWA

Table 4.13-3 summarizes the current and projected surface water and groundwater supplies from 2010 to 2030. As described above, AWS has the ability to divert 15,000 afy of surface water from the Mokelumne River that is stored at Lake Taboada and CAWP has the ability to divert 1,150 afy of surface water from the Mokelumne River at the Tiger Creek Afterbay. AWA is in the process of securing an additional 1,050 afy of surface water rights for the CAWP system. AWA's projected CAWP surface water diversions shown in Table 4.13-3 assume that AWA will secure obtain the an additional 1,050 afy surface water rights for the CAWP system by 2015 and the total surface water diversions for CAWP would then increase from 1,150 afy to 2,200 afy (AWA 2011: 4-23). Therefore, Table 4.13-3 summarizes the projected current water supply which is based on water rights, not demands. AWA has submitted an application to SWRCB to obtain this additional water, but lacks capacity for additional customers in the CAWP system until these additional rights are secured (AWA 2009).

Component of Water Supply	2010	2015	2020	2025	2030
AWS Surface Water Diversions	15,000	15,000	15,000	15,000	15,000
CAWP Surface Water Diversions ¹	1,150	2,200	2,200	2,200	2,200
La Mel Heights Groundwater ²	25	25	25	25	25
Lake Camanche Village Groundwater ^{2,3}	325	244	244	244	244
Total Water Supply	16,500	17,469	17,469	17,469	17,469

Notes: afy = acre-feet per year, AWA = Amador Water Agency

¹ CAWP surface water diversions assume that an additional 1,050 afy surface water right would be obtained and expand the surface water diversions to 2,200 afy ~~by 2015~~. AWA has submitted an application to SWRCB to obtain this additional water, but lacks capacity for additional customers in the CAWP system until these additional rights are secured.

² Groundwater production is not included in the calculations, but rather safe yields of the respective wells are utilized.

³ Groundwater supplies within Lake Camanche Village assume only Wells 6, 9, and 12 are online and that a surface water treatment facility is not operational. In addition, the safe yield from the Lake Camanche Village groundwater wells from 2015-2030 assumes a production loss of 25% to account for any dry year water reductions within the Cosumnes Subbasin.

Source: AWA 2011: Tables 5-7 and 5-7

As discussed below under “Future Water Supply and Demand, the AWA’s water demand is anticipated to be substantially less than available water supplies through 2030 in all water years.

The impact of climate change specifically for AWA water sources is speculative. However, according to California’s climate change information portal, Cal-Adapt:

“On average, the projections show little change in total annual precipitation in California. Furthermore, among several models, precipitation projections do not show a consistent trend during the next century.”

Northern California, including watersheds within, or partly within, Amador County, could experience slightly more or slightly less precipitation, on average, over the next several decades. However, precipitation levels could become increasingly variable from year to year, with a growing number of multiple drought years. Small changes in precipitation patterns could affect AWA’s water storage and distribution facilities. Through 2030, more precipitation could be delivered as rain and less as snow, with increasing variability of snowpack and multiple low snowpack years, also affecting AWA’s management of water storage facilities.

Groundwater production is not included in the projected groundwater supplies; instead, safe yields of the respective wells are utilized. AWA ~~does not expect to encounter~~ is concerned with recurring water quality issues

with its Lake Camanche Village wells; however, AWA's demand projections assume only Wells 6, 9, and 12 are online, and that a surface water treatment facility is not operational. In addition, the safe yield from the Lake Camanche Village groundwater wells from 2015 to 2030 assumes a production loss of 25% to account for any dry-year water reductions within the Cosumnes Subbasin. However, technical and financial issues remain to be resolved before water services (or wastewater services) in Camanche Village can be expanded (AWA 2009 and 2012). The 2012 study recommended a phased approach to providing surface water in the region. Phase I has been funded and is under construction.

As shown on Table 4.13-3, surface water supplies would increase from 16,150 afy in 2010 to 17,200 afy in 2015 and groundwater supplies are anticipated to decrease from 350 afy in 2010 to 269 afy by 2030.

Water Distribution Facilities

The AWA conveyance facilities consists of approximately 120 miles of water mains; 23 miles of canals; and 177 miles of distribution mains, which include 65 miles in the AWS, 93 miles in the CAWP, 19 miles in Lake Camanche, and 1.4 miles in La Mel Heights. (AWA 2011: 2-5, Burr Consulting 2008b: II-205.)

AWA previously used the 24-mile Amador Canal to transfer raw water from the Mokelumne River to customers between Lake Tabeaud and Sutter Hill and to the Tanner WTP (AWA 2011). EBMUD, PG&E, and AWA jointly contributed to construct the Amador Transmission Pipeline to eliminate the transmission loss of approximately 5,100 afy from the canal and vulnerabilities to contamination from livestock/wild animals and septic tanks along its course (Amador County 2010: H-47).

In the CAWP system, there are some zones of low pressure and low flow fire hydrants. In these areas, sudden high water demands, such as fire hydrant use for firefighting, can cause a loss of pressure below the state-required minimum of 20 pounds per square inch (psi) and the inability to meet fire flow criteria (Bartholomew 1995). Amador Water Agency is working to correct this problem.

Until AWA needs its full 15,000 afy of entitlement, the conserved water will be available to EBMUD and PG&E for additional hydropower generation and as additional inflow to Pardee Reservoir (Burr Consulting, 2008b: II-205 and II-206). The water transported by the Amador Transmission Pipeline is delivered to the Tanner Reservoir for treatment at the Tanner Water Treatment Plant (WTP) and the Ione WTP. The UWMP does not contain an estimate of total distribution capacity and net capacity to deliver water after water loss is taken into account.

Upon tentative map approval, project applicants are required to obtain a Conditional Will Serve letter from AWA. In this letter, AWA outlines infrastructure needed to serve the project, and applicants are required to construct or bond for these improvements prior to obtaining service. (AWA 2009)

Water Storage Facilities

The AWA owns and maintains 36 storage facilities and three raw water reservoirs. The storage tanks have a combined storage of 8.8 million gallons of water: 4.5 million gallons in AWS, 3.4 million gallons in the CAWP, 0.7 million gallons in Lake Camanche, and 0.1 million gallons in La Mel Heights. The AWA has budgeted to make improvements to the storage tanks in the CAWP and Lake Camanche systems. In addition, AWA is currently in process of completing a storage consolidation study for the CAWP system to increase water storage and eliminate small aged tanks. (Policy Consulting Associates 2014:235.)

Water Treatment

AWA owns, operates, and maintains three treatment plants for surface water. The Ione and Tanner WTPs serve the AWS system and the Buckhorn WTP serves the CAWP system. Table 4.13-4 shows the capacity, average day demand, and maximum day demand for these treatment facilities.

**Table 4.13-4
AWA Water Treatment Plant Capacities, Average Day Demands, and Peak Day Demands, 2012**

Water Treatment Plant	Treatment Capacity (mgd)	Average Day Demand (mgd)	Maximum Day Demand (mgd)
Ione	3.3	1.3	2.6
Tanner	6.1	2.2	4.4
Buckhorn	3.4	0.83	1.66

Notes: mgd = million gallons per day, AWA = Amador Water Agency
Source: Policy Consulting Associates 2014:237, Amador County 2010: H-47

The Ione WTP is located in the City of Ione and serves the City of Ione, several facilities within the Ione city limits, and the Eagles Nest community. The Ione WTP has a capacity of 3.3 million gallons per day (mgd) and must use stored water to meet maximum day demands. Based on existing demands and commitments in the form of will-serve or conditional will-serve letters, all remaining capacity at the Ione WTP is either utilized or reserved. (City of Ione 2009a: 3.13-22.) An expansion plan of the Ione Water Treatment Plant is currently underway along with a plan to recycle filter backwash water.

The Tanner WTP is located just east of the City of Sutter Creek and serves the remaining AWA system. As of April 2010, the Tanner WTP has a capacity of 5.7 mgd and AWA estimates the maximum daily usage would be 5.5 mgd. Based on the “will serve” commitments that AWA has already made, all of the existing capacity of the Tanner Treatment Plant has been allocated. AWA plans to expand the plant to 8.0 mgd of treatment capacity as a regional plant in the future. There is currently no timeframe for expansion of the Tanner WTP. (Burr Consulting 2008b: II-204, Amador County 2010: H-47.) Currently AWA is reviewing options for incremental plant expansion at the Tanner Water Treatment Plant.

In the long term, expansion of the Tanner WTP is likely required to meet demands within the AWS. If a new Regional Tanner facility is constructed, the Ione WTPs would likely be decommissioned. In the short term, AWA may consider interim improvements to both the Tanner and Ione WTPs to provide additional capacity. These interim improvements would require funding by project applicants. (AWA 2009)

The Buckhorn WTP is located in Buckhorn and serves the CAWP system. The treatment plant has a capacity of 3.4 mgd (Policy Consulting Associates 2014:237). AWA has not conducted an analysis of treatment capacity at the Buckhorn WTP. At the time that additional water treatment capacity is required, applicants will be required to fund these improvements (AWA 2009).

EBMUD, AWA, and the Calaveras County Water District have discussed plans for a joint surface water treatment plant project that would supply surface water to the Lake Camanche area (AWA 2011: 4-19). Surface water rights to supply this project have not been identified (RMC 2006: 3-17). This is also described in the Camanche Area Regional Water Supply Project (Upper Mokelumne River Watershed Authority 2013).

Future Water Supply and Demand

Event during the recent extreme drought of 1976/1977 and prolonged drought of 1988 to 1994, spring runoff each year filled PG&E’s reservoirs to near capacity. These reservoirs form the head of both the AWS and CAWP surface water diversions. By July, runoff is typically near zero and system water demands are met by storage facilities. The timing of the runoff is about the same for wet or dry years with the only difference being the magnitude of the runoff and the amount of reservoir spill. PG&E is able to provide the full annual water contract entitlements to AWA due to the priority of the water rights involved and the amount of water stored on behalf of AWA. Therefore, the surface water supply available for normal, dry or multiple dry year scenarios (Shown in Table 4.13-5) remains the same for surface water diversions. (AWA 2011: 5-25 and 5-29.) As shown in the table,

**Table 4.13-5
Normal-Year and Dry-Year Comparison of Water Supply and Demand in the AWA
(2010-2030)**

Water Year		Projected Demands (afy)				
		2010	2015	2020	2025	2030
Normal Water Year	Total Supply	16,500	17,469	17,469	17,469	17,469
	Total Demand	8,407	9,052	10,498	11,407	12,356
	Difference (Supply minus Demand)	8,093	8,417	6,971	6,062	5,113
Single-Dry Year	Total Supply	16,500	17,469	17,469	17,469	17,469
	Total Demand	8,407	9,052	10,498	11,407	12,356
	Difference (Supply minus Demand)	8,093	8,417	6,971	6,062	5,113
Multiple-Dry Year 1	Total Supply	16,500	17,469	17,469	17,469	17,469
	Total Demand	8,407	9,052	10,498	11,407	12,356
	Difference (Supply minus Demand)	8,093	8,417	6,971	6,062	5,113
Multiple-Dry Year 2	Total Supply	16,500	17,469	17,469	17,469	17,469
	Total Demand	8,407	9,052	10,498	11,407	12,356
	Difference (Supply minus Demand)	8,093	8,417	6,971	6,062	5,113
Multiple-Dry Year 3	Total Supply	16,500	17,469	17,469	17,469	17,469
	Total Demand	8,407	9,052	10,498	11,407	12,356
	Difference (Supply minus Demand)	8,093	8,417	6,971	6,062	5,113

Notes: afy = acre-feet per year
Source: AWA 2011: Tables 5-7, 5-8, and 5-9; data compiled by AECOM in 2012

the AWA’s water demand is anticipated to be substantially less than available water supplies through 2030 in all water years. Most currently, raising the Lower Bear River Reservoir is being considered in MokeWISE, the Mokelumne Watershed Interregional Sustainability Evaluation Program, which is in progress (Upper Mokelumne River Watershed Authority undated).

Jackson Valley Irrigation District

JVID supplies raw water to agricultural, fish farm, industrial and domestic uses. JVID sells bottled water to domestic users that are not connected to private wells. The County has required residences to connect to private wells for domestic water since the early 1980s; however, previously the County allowed residences to connect to Lake Amador as a water source. As a result, there are approximately 60-62 homes within the JVID service area that rely on Lake Amador for domestic water. The water is not suitable for drinking water purposes, as it contains treated wastewater effluent and is not treated to drinking water standards. Under a 2001 order from the California DPH, affected residents are required to buy bottled drinking water. JVID supplies bottled water at cost to the affected customers. In addition, JVID supplies raw water to the Oaks Mobile Home Park and Lake Amador Recreation Area. Both communities operate their own private water treatment systems. JVID plans to pipe treated water from its Mokelumne River source to supply these customers through a project financed by a safe drinking water State Revolving Fund grant. Burr Consulting 2008b: II-279 to 292)

JVID has rights to store up to 36,000 af of Jackson Creek flows. It may divert flows to Lake Amador between November and May at a maximum rate of 110 cfs. Due to reservoir capacity constraints, the District typically uses about 10,000 af of this right. The safe yield is 8,500 af. Jackson Creek water quality has declined somewhat in recent years, with a greater portion of the source composed of treated wastewater effluent. Upstream flows in Jackson Creek have declined in recent years as a result of AWA piping the Amador Canal, which had previously leaked significant water into Jackson Creek; growth in Jackson has also increased the volume of effluent. (Burr Consulting 2008b: II-279 to 292) JVID has rights to divert up to 3,850 af of Mokelumne River at a diversion rate of 50 cfs; the diversion is authorized year-round for domestic and stock watering uses, and between March and October for irrigation uses. However, JVID does not hold rights to store this water. JVID's diversion rights are appropriative, based on a 1927 application, and are subject to reversion to upstream needs. Reversion to upstream needs is determined by SWRCB, and any reversion of more than 2,200 af must be accompanied by a substitute water source. AWA applied for reversion of 1,050 af, and is considering substitution of recycled water for a portion of JVID's Mokelumne River water right. AWA proposes to discharge tertiary treated effluent in Jackson Creek during winter months. Mokelumne River water flows by gravity from Pardee Reservoir to Lake Amador. JVID requests and usually receives 3,850 af annually from EBMUD, although it is subject to availability. (Burr Consulting 2008b: II-279 to 292)

Pine Grove Community Services District

Pine Grove CSD purchases treated surface water from the Tiger Reservoir from AWA through CAWP and distributes it to residential and commercial users. The water is treated at AWA's Buckhorn Treatment Plant, passes through the CAWP transmission pipeline and fills the District's three storage tanks. Pine Grove CSD uses groundwater for non-potable uses. Pine Grove CSD maintains a single well that is used primarily to fill the AFPD water tender and to provide bulk water to developers for construction sites. (Burr Consulting 2008b: II-325 to 339)

River Pines Public Utility District

River Pines PUD provides treated surface and groundwater to its users. The groundwater source is a shallow, fractured rock aquifer underlying the River Pines community. Groundwater is extracted at two wells (Well No. 2 and Well No. 6-R). Well No. 2 has a yield of 35 gpm and does not satisfy District demand alone when Cosumnes River water is unavailable. Well No. 6-R yields 60 gpm. The groundwater at Well No. 6-R is classified as groundwater under the direct influence of surface water. Safe annual yield is unknown, as water production records are poor quality and no hydrogeological studies have been conducted in the last two decades. Groundwater quality at one of the wells (Well 6-R) is subject to microbiological contamination associated with coliform. (Burr Consulting 2008b: II-365 to 384)

River Pines PUD diverts surface water from the South Fork Cosumnes River, which flows through the east part of the community. River Pines PUD holds water rights to divert up to 126.4 af from the South Fork Cosumnes River for municipal purposes, and may divert at a maximum rate of 0.204 cfs. River Pines PUD's water right requires it to maintain a minimum instream flow of 15 gpm; however, during the dry season, the South Fork Cosumnes River may run dry. In addition, River Pines PUD has rights to divert an additional 3 af in water from the same source for recreational use during the summer months. River Pines PUD has another 15 af in water rights from Slate Creek, a tributary to the south fork of the Cosumnes River, which may be used year-round for domestic purposes, although this water is currently not used. River Pines PUD's storage facilities have a capacity of less than a day's water demand, and its distribution system is in need of maintenance and improvements. River Pines PUD has undersized infrastructure to serve its existing customer base and does not intend to expand without a mechanism to pay for needed expansions. (Burr Consulting 2008b: II-365 to 384)

Drytown County Water District

DCWD serves the community of Drytown. DCWD serves about 62 connections, and expects to serve up to 69 new connections in two proposed subdivisions, one of which would require partial annexation into DCWD. DCWD obtains treated surface water from AWA, and operates infrastructure, including a water tank and distribution system. Because DCWD obtains all its water from AWA, any new connections would require confirmation of capacity for service from AWA. Although DCWD's water tank is reportedly in excellent condition, its distribution network is estimated to lose approximately 20% of its water to leaks, and is in need of improvement. (Burr Consulting 2008b: II-223 to 233)

Fiddletown Community Services District

Fiddletown CSD supplies treated groundwater for domestic water service to residential connections. Fiddletown CSD owns operates and maintains a single domestic water well, storage tank, and distribution system. There are 63 residential water connections within the District's boundaries. (Policy Consulting Associates 2014:283)

Kirkwood Meadows Public Utility District

Kirkwood Meadows PUD provides domestic and irrigation water services to 848 active water connections, of which 663 are residential, 45 are commercial, and 178 are irrigation (residential and agricultural). KMPUD receives its water supply entirely from groundwater wells. Kirkwood Meadows PUD owns and maintains four wells that pump water from an unclassified aquifer. The wells have a combined capacity of 225 gpm. In 2007, Kirkwood Meadows PUD pumped a total of 23.95 mgd of groundwater with a maximum day flow of 0.1 mgd. (Burr Consulting 2008b: II-293 to 303)

Volcano Community Services District

Volcano CSD provides groundwater to 72 connections, and has a moratorium on new connections pending the outcome of a study. The water source is groundwater under the influence of surface water from the Cleveland Tunnel, an inactive mine tunnel, and the back-up water source is groundwater wells with relatively low yields. The Cleveland Tunnel is considered groundwater under the influence of surface water. Volcano CSD claimed rights to divert 57 gpm from the Cleveland Tunnel in 2002 as a pre-1914 appropriative water right. The source yield is rated at 70 gpm in the Volcano CSD's permit, but only 43 gpm by a 2006 water supply study completed for the district. Volcano CSD also operates two wells; the wells have a combined yield of 6 gpm presently; by comparison, peak demand has reached 29 gpm. Volcano CSD also operates a water treatment plant with a rated capacity of 53 gpm, although its 2006 supply study describes its capacity as 36 gpm due to operational considerations. (Burr Consulting 2008b: II-414 to 433)

Rabb Park Community Services District

Rabb Park CSD purchases treated water from AWA through CAWP and distributes it to residential users. Rabb Park CSD purchases treated surface water from Tiger Reservoir from AWA. The water is treated at AWA's Buckhorn Treatment Plant, passes through the CAWP transmission pipeline and fills the two storage tanks serving the District. (Burr Consulting 2008b: II-340 to 350)

East Bay Municipal Utility District

EBMUD operates the Pardee and Camanche Reservoirs as a water sources for its service area in Alameda and Contra Costa counties. EBMUD also provides groundwater to residents and visitors to the Camanche North Shore area from two groundwater wells, with a third well currently not in operation. EBMUD plans to build a joint surface-water treatment plant with AWA and the Calaveras County Water District to phase out this groundwater use because of concerns about groundwater quality and basin overdraft. (Burr Consulting 2008b: II-234 to 243.)

First Mace Meadow Water Association, Inc.

The First Mace Meadow Water Association, Inc. (FMMWA) is a mutual water company serving the Mace Meadow area of Pioneer. Its service area is adjacent to the Mace Meadow golf course. FMMWA is a part of the Central Amador Water Project; it operates an infrastructure consisting of five tanks and a related distribution system.

FMMWA owns three wells that are not currently being used for water production. It is likely that at most, only one or two of these are functional, and the Association does not own any facility that would allow it to treat water from this source. As an alternative, it purchases surface water from AWA that is treated at the Buckhorn Treatment Plant. FMMWA's service area consists of Mace Meadows Subdivision Units 2-7 and Fairway Estates Subdivision Unit 1. This area consists of 502 parcels. At this time, 407 of these are active residential connections, 4 are commercial, and 91 are standby accounts awaiting development. (Corner, pers. comm., 2016.)

WASTEWATER COLLECTION, CONVEYANCE, AND TREATMENT FACILITIES

Sanitary-sewer conveyance and disposal services within the planning area are provided by the AWA, the ARSA, and the City of Ione. The following discussion provides an overview of these wastewater collection, conveyance, treatment, and disposal facilities.

Areas within the County that do not receive central wastewater treatment services rely on septic systems. There are approximately 9,700 residential septic systems throughout the County. Septic systems are located on individual properties, provide treatment of wastewater, collect sludge, and discharge effluent into a leach field. Property owners are responsible for septic system maintenance and sludge disposal. (Policy Consulting Associates 2014.)

Amador Water Agency

Wastewater Collection and Conveyance

AWA operates 33 miles of sewer pipes and 15 lift stations as part of its conveyance system. AWA operates wastewater collection at Martell (AWA Wastewater Improvement District [WWID] #12), Lake Camanche Village, Gayla Manor, Eagle's Nest, Fairway Pines, Jackson Pines, Mace Meadows, Pine Grove, Surrey Junction, Tiger Creek Estates, Viewpoint Estates, and Wildwood Estates. AWA plans to expand regional wastewater reuse working with the cities and counties (Aegis Engineering 2013)~~construct a new WWTP to serve Martell~~ and provide additional storage and disposal capacity to the Lake Camanche Village (Policy Consulting Associates 2014:243).

Wastewater Treatment

The AWA currently owns, operates and maintains ten geographically separate wastewater treatment facilities throughout Amador County: Eagles Nest, Fairway Pines, Gayla Manor, Jackson Pines, Lake Camanche Village, Pine Grove, Surrey Junction, Tiger Creek Estates, Viewpoint Estates, and Wildwood Estates. Eight of the ten systems are community leachfield systems, while the other two systems treat wastewater to a secondary level that is then applied to land for disposal (Table 4.13-6).

**Table 4.13-6
2010 AWA Wastewater Collection, Conveyance, Treatment, and Disposal Systems**

Wastewater System	Collection System ¹	Collection Piping (feet)	Treatment Type	Treatment Volume (afy)	Disposal Method
Eagles Nest	Gravity Pressurized	6,423	CLS	3.84	Subsurface
Fairway Pines ²	Gravity Combination	22,984	CLS	6.22	Subsurface
Gayla Manor	Gravity Combination	7,725	Secondary	11.72	Subsurface and Spray
Jackson Pines	Gravity Combination	16,331	CLS	10.31	Subsurface
Lake Camanche	Gravity	40,755	Secondary	58.28	Spray
Mace Meadows ²	Gravity Combination	22,984	CLS	12.54	Subsurface
Martell ³	Gravity	81,276	N/A	N/A	N/A
Pine Grove	Pressurized	18,264	CLS	12.25	Subsurface
Surrey Junction	Gravity Pressurized	3,049	CLS	1.07	Subsurface
Tiger Creek Estates	Gravity Combination	2,778	CLS	0.25	Subsurface
Viewpoint Estates	Gravity Pressurized	1,834	CLS	0.37	Subsurface
Wildwood Estates	Gravity Pressurized	5,802	CLS	4.24	Subsurface

Notes: afy = acre feet per year; AWA = Amador Water Agency; CLS = community leachfield system; Secondary = secondary level treatment for land disposal; Subsurface = disposal of effluent to leachfield trenches, Spray = disposal of effluent to above ground spray fields.

¹ Gravity collection system is defined as traditional gravity collection mains, laterals, manholes and lift stations. Pressurized collection system is defined as pressurized collection mains and laterals without any lift stations.

² Mace Meadows and Fairway Pines community leachfield systems share a common collection system.

³ Disposal of wastewater collected in the Martell area is provided by the Sutter Creek WWTP.

Source: AWA 2011:Table 4-4

AWA also provides wastewater operations, maintenance, and emergency services to other wastewater service providers, presently ~~the City of Plymouth and~~ River Pines PUD.

Wastewater treatment and disposal for Martell is provided by the City of Sutter Creek Wastewater Treatment Plant (WWTP) and the Amador Regional Sanitation Authority (ARSA).

Table 4.13-7 summarizes current and projected wastewater collection and treatment demands in the AWA from 2010 to 2030. The volume of wastewater treated is less than the volume of wastewater collected because disposal of wastewater from the Martell area is provided by the Sutter Creek WWTP. As of 2010 the AWA currently collects 172.25 afy and treats 119.95 afy. In 2030, the AWA expects to collect 207.90 afy of wastewater flows and treat 134.81 afy.

Several of the AWA treatment facilities are at or beyond capacity. The Martell area needs additional capacity to support anticipated build-out demand. At Lake Camanche Village, there is a moratorium on additional wastewater service connections with property owners on a waiting list for additional capacity. ~~The Gayla Manor system's capacity is exceeded during peak rain events.~~

**Table 4.13-7
Current and Projected Wastewater Collection and Treatment for the AWA (afy)**

	2010	2015	2020	2025	2030
Wastewater Collected	172.25	180.14	187.82	197.43	207.90
Wastewater Treated ¹	119.95	123.07	126.68	130.58	134.81

Notes:

¹ The volume of wastewater treated is less than the volume of wastewater collected because treatment of wastewater from the Martell area is provided by the Sutter Creek WWTP.

Source: AWA 2011:Table 4-5

Recycled Water

As discussed above under “Water Supply, Conveyance, and Treatment Facilities,” the AWA is evaluating a plan for regional water reuse, seeking to maximize water recycling by developing a regional recycled water supply in the Amador City, Jackson, Martell, and Sutter Creek area in lieu of raw and potable water. The development of this project is seen as the first step in implementing a regional approach to water recycling. This plan and subsequent detailed studies are intended to optimize the use of recycled water (Aegis Engineering Management and Zw3 2013).

Amador Regional Sanitation Authority

The ARSA operates a combination of collection, storage, treatment, conveyance, and disposal facilities in various locations covering a large geographic area. The ARSA provides wastewater treatment and disposal service to Amador City, the City of Sutter Creek, and the Martell area (AWA WWID #12). The ARSA has several partners, including the City of Ione, the California Department of Corrections (CDC) Mule Creek State Prison, the California Youth Authority (CYA) Preston Youth Correctional Facility, and the owners of the Castle Oaks Development.

Wastewater Collection and Conveyance Facilities

Wastewater collection and conveyance facilities in Amador City, the City of Sutter Creek, and the Martell area generally consist of gravity pipelines and pump stations that transport wastewater flows to a 15-inch sewer trunk that ultimately carries all flows to the Sutter Creek WWTP (ECO:LOGIC Engineering 2005:4-5).

Sutter Creek Wastewater Treatment Plant

The Sutter Creek WWTP is owned and operated by the City of Sutter Creek. The Sutter Creek WWTP has a permitted average dry-weather flow capacity of 0.48 mgd and a peak wet-weather flow capacity of 1.5 mgd. Table 4.13-8 shows the average annual flow, the average dry-weather, and the peak wet-weather flow would be 2.04 mgd, 181 mgd, and 3.80 mgd, respectively, at buildout of the Sutter Creek WWTP service area. The Sutter Creek WWTP is currently operating at capacity due to elevated pollutant loads; no additional treatment capacity at the Sutter Creek WWTP is currently available (Amador County 2010:H-48).

The City of Sutter Creek prepared the *Sutter Creek Wastewater Master Plan* (2009) to identify long-term treatment plant improvements. The City of Sutter Creek intends to replace the existing WWTP with a new treatment plant in the City of Sutter Creek. The new treatment plant would accommodate wastewater flows generated in Amador City, the proposed Gold Rush project, Martell, and the City of Jackson. The new treatment plant conveyance facilities would be sized to allow for future conditions and the conveyance of treated effluent to the Martell area and for reuse along the SR 88 corridor. (City of Sutter Creek 2009:6-5.)

Year	Average Annual Flow	Average Dry-Weather Flow	Peak Wet-Weather Flow
2010	0.35	0.31	1.27
2015	0.82	0.47	1.54
2020	1.16	0.65	1.84
2025	1.39	0.86	2.20
2030	1.48	1.25	2.86
Buildout	2.04	1.81	3.80

Notes: mgd = million gallons per day
Source: City of Sutter Creek 2009: 2-19

Effluent Disposal Facilities

Treated secondary effluent from the Sutter Creek WWTP flows through gravity pipelines located along the alignment of the old Preston School Ditch and the streambed of Jackass Creek into Henderson Reservoir. Prior to entering Henderson Reservoir, a portion of the secondary effluent is diverted to provide irrigation water to the 40-acre Bowers Ranch property. A portion of the effluent is also reclaimed after it flows out from Henderson Reservoir and used for spray irrigation on the 60-acre Hoskins Ranch.

From Henderson Reservoir, the remaining effluent flows to Preston Reservoir located within the boundary of the CYA Preston Youth Correctional Facility in the City of Ione. Preston Reservoir also accepts additional flows of secondary effluent from the Mule Creek Prison WWTP, which provides wastewater treatment to the CYA Preston Youth Correctional Facility as well as the California Department of Forestry Fire Academy (CDF Academy). Through an agreement with ARSA, Mule Creek Prison provides a minimum of 80 afy of effluent to ARSA; however, up to 120 acre-feet per year of Mule Creek Prison effluent may be diverted to the ARSA system with prior approval.

Effluent in the ARSA system flows from Preston Reservoir to the City of Ione through a dedicated pipeline known as the ARSA Regional Outfall. The City of Ione is obligated through agreement with ARSA to accept 750 afy of flow from Preston Reservoir for disposal. In a wet year, the agreement provides for the City of Ione to accept up to 900 acre-feet. The flow from Preston Reservoir can either be routed to the Ione secondary WWTP or to the City’s tertiary Castle Oaks Water Reclamation Plant (COWRP). The City of Ione’s secondary WWTP and tertiary COWRP are discussed in detail below. (ECO:LOGIC Engineering 2005: 4-9 and 4-12.)

City of Ione

In addition to providing wastewater collection, treatment, and disposal services to residents and businesses within the city limits, the City of Ione provides wastewater treatment and disposal services to effluent from the Sutter Creek WWTP via the ARSA. These services are described in more detail below.

City of Ione Wastewater Treatment Plant and Disposal Facilities

Ione Secondary WWTP

Wastewater from the City’s sanitary sewer users, in addition to the backwash water from AWA-owned Ione WTP, enters the City’s sewer system and is treated at the City’s secondary WWTP for disposal in the percolation ponds. The secondary WWTP also accepts secondary effluent from the Sutter Creek WWTP and effluent from the Mule Creek State Prison WWTP via ARSA.

The Ione secondary WWTP has a treatment and disposal capacity of 0.55 mgd; however, the actual disposal capacity of on-site evaporation-percolation ponds is higher than the treatment capacity at approximately 0.78 mgd, but the excess capacity is reserved for effluent from ARSA (City of Ione 2009a: 4-13.36). The Ione secondary WWTP also treats approximately 0.30 mgd of the filter backwash water from the Ione WTP (City of Ione 2009b: 3-4). After the Tanner WTP expansion, the Ione WTP will be decommissioned and backwash water will no longer enter the City's sewer system.

The average dry-weather flow at the WWTP was 0.41 mgd in 2009 (City of Ione 2009b: 3-4). Based on the "notices of service" commitments that the City has already made, a treatment capacity of approximately 0.80 mgd would be required by 2016 and a treatment capacity of 1.6 mgd would be needed by 2030 to meet existing service demands and additional service commitments (City of Ione 2009b: 4-2). This capacity does not include AWA backwash water and additional treatment capacity would be required if discharge of AWA backwash water continues.

The City prepared the *City of Ione Wastewater Master Plan* in 2009. Based on recommendations in the master plan, the City intends to expand its treatment plant in two phases. Phase I would expand the WWTP to 0.80 mgd to accommodate near-term growth and Phase II would add an additional 0.80 mgd for a total capacity of 1.60 mgd by 2030 (City of Ione 2009b: 5-1).

Castle Oaks Water Reclamation Plant

The COWRP is located on Five Mile Road in the Castle Oaks subdivision along the north bank of Sutter Creek. The COWRP treats ARSA effluent previously disposed on the Preston Youth Correctional Facility and treats secondary effluent from Sutter Creek WWTP. Effluent from the COWRP is reused at the Castle Oaks Golf Course to irrigate areas in accordance with Title 22 "unrestricted" requirements for irrigation of areas with public access. Most water reclamation at the golf course is seasonal during periods of high irrigation demand, which is typically April through November. Seasonal disposal capacity at the golf course is estimated to be between 0.37 and 0.40 mgd averaged over an entire year (City of Ione 2009a:3.13-39). The ability of the golf course to accept effluent depends on the season, the amount of rainfall, and the timing of that rainfall. When there is no demand for irrigation at the Castle Oaks Golf Course and storage capacity in the Regional Outfall reservoirs is no longer available, ARSA effluent is routed to the City of Ione's secondary treatment plant site for disposal.

East Bay Municipal Utility District

EBMUD has two wastewater treatment plants in the Mokelumne watershed that serve recreation area visitors and residents. An annual average of 26 mg of wastewater is generated in the watershed, 98 percent of this is used in the recreational areas. EBMUD operates three wastewater treatment facilities. The Camanche North Shore plant is a three-pond treatment system with two overflow backup ponds, and a sixth storage pond. Three of the treatment ponds are mechanically aerated, effluent is stored in the fourth, fifth and sixth ponds and then sprayed during irrigation season in a five-acre land disposal area. In 2013, the plant processed peak dry weather flows of 45,000 gpd on summer holiday weekends, and an average of 17,200 gpd. There are six lift stations. Significant portions of the collection system, particularly in the mobile home parks, are reportedly in need of upgrades. The treatment system is also reported to require upgrades to meet regulatory requirements. (Policy Consulting Associates 2014:278)

At the Pardee recreation area, there is a small wastewater treatment facility with storage ponds and a one-acre land-discharge site. In 2013, the plant processed peak dry weather flows of 1,500 gpd during open season, 200 gpd during closed season, and an average of 1,900 gpd over the calendar year. The treatment system also reportedly requires upgrades to meet regulatory requirements. A third facility on EBMUD-owned land is the Camanche Hills Hunting Preserve, which operates an 8,000 gallon underground storage tank to store wastewater from bird cleaning and processing operations. (Policy Consulting Associates 2014:278)

River Pines Public Utility District

RPPUD provides wastewater collection and disposal within its boundaries. Its WWTP has a facility design flow capacity of 0.035 mgd average dry-weather flow, and can accommodate peak flows of 0.088 mgd. By comparison, existing flow average dry-weather flow was 0.02 mgd in 2012, and peak flow is 0.03 mgd. (Policy Consulting Associates 2014:432)

Fiddletown Community Services District

Fiddletown CSD operates a community leachfield. A total of 73 parcels along Dry Creek, as well as neighboring properties too small for an individual septic system are connected or have the right to connect to the system. The collection and disposal system was installed in 1999 by Amador County. The system was designed for a maximum of 78 parcels. Effluent is collected in individual onsite septic tanks where a majority of the treatment occurs, then is collected into a shallow pressure dosed drain field for percolation into the soil. (Policy Consulting Associates 2014:293)

Kirkwood Meadows Public Utility District

Kirkwood Meadows PUD operates a WWTP, leachfields and nine miles of collection lines. The WWTP provides tertiary treatment and disinfection. Treated effluent is disposed of in subsurface leachfields and sludge is dewatered and disposed of off-site in a landfill. The treatment plant has a monthly average design capacity of 0.19 mgd, with a peak flow design capacity of 0.27 mgd. Monthly average influent flows in 2011 ranged from 16,687 gpd average dry-weather flow to 98,994 gpd. (Policy Consulting Associates 2014:345)

State Facilities

The State of California owns and operates facilities in the City of Ione, including the CDC Mule Creek State Prison, the CDF Academy, and the CYA Preston Youth Correctional Facility. Sewage from each facility is collected by its own collection system and conveyed to the Mule Creek State Prison WWTP. The state also operates a conveyance system that transfers a minimum of 80 afy of treated effluent from the Mule Creek WWTP to Preston Reservoir; however, up to 120 acre-feet of Mule Creek effluent may be diverted to the ARSA system with prior approval. (ECO:LOGIC Engineering 2005:4-23.)

The Mule Creek WWTP has a permitted average dry-weather flow design capacity of 0.71 mgd and a peak wet-weather flow capacity of 2.2 mgd. Disposal of Mule Creek effluent is accomplished by applying disinfected effluent to irrigate 296 acres of pasture land at the prison site, evaporating and percolating effluent within the 525 acre-foot storage reservoir at the treatment plant, or discharging a minimum of 80 afy of effluent to the ARSA Regional Outfall. Effluent discharged to the ARSA Regional Outfall is ultimately conveyed to the Ione secondary WWTP. (ECO:LOGIC Engineering 2005:4-24.)

SOLID WASTE

Solid waste disposal for Amador County is through an exclusive waste hauler franchise with ACES Waste Services. Waste that is collected is taken to the Western Amador Recycling Facility (WARF), also referred to as the Buena Vista Landfill Transfer Station, in Ione. WARF is permitted to accept a maximum daily disposal of 333 tons per day (tpd) (California Integrated Waste Management Board [CIWMB] 2008a). Recyclable materials segregated at the WARF and residual municipal waste is disposed of at the Keifer Landfill.

Waste in the upcountry area is taken to the Pine Grove Transfer Station in Pine Grove. The transfer station is permitted to accept a maximum of 150 tpd of solid waste; however, the average intake is only approximately 99 tpd (CIWMB 2008b). This facility accepts industrial waste and mixed municipal waste. Solid waste that is brought to the Pine Grove Transfer Station is transferred to the Kiefer Landfill (Amador County 2007: IPS-12).

The Amador County Integrated Solid Waste Management Regional Agency is an intergovernmental agency that includes Amador County and Amador City, Ione, Jackson, Sutter Creek, and Plymouth. In 2012, the waste management agency handled 27,457 tons of solid waste (CalRecycle 2012).

The 2012 CalRecycle (formerly CIWMB) approved per capita waste generation rate is 4.1 pounds per resident per day (ppd) in Amador County (CalRecycle 2012). The 2012 generation rate roughly equates to a diversion percentage of 73 percent for the County. California law will require an overall statewide average of 75 percent by the year 2020. Although this law does not mandate individual municipalities to achieve 75 percent, Amador County is striving for the 75 percent goal.

Kiefer Landfill

All County Class III solid waste is planned to be disposed of in Kiefer landfill through 2030. Sacramento County owns and operates the Kiefer Landfill, and the landfill is the primary solid waste disposal facility in that county. Kiefer Landfill is a total of 1,084 acres in size, with a permitted disposal area of 660 acres. Kiefer Landfill is classified as a Class III municipal solid waste landfill facility and is permitted to accept general residential, commercial, and industrial refuse for disposal, including municipal solid waste, construction and demolition debris, green materials, agricultural debris, and other nonhazardous designated debris. Kiefer Landfill produces enough renewable energy (in the form of methane gas) to power 9,000 homes.

The landfill is permitted to accept a maximum of 10,800 tpd of solid waste; however, the average intake is only approximately 6,000 tpd. The Kiefer Landfill receives over 700,000 tons of waste per year. The site currently has a permitted capacity of approximately 117 million cubic yards (58 million tons) and a remaining capacity of 113 million cubic yards (56 million tons). Currently, the landfill is operating below permitted capacity, and the closure date of the Kiefer Landfill is anticipated to be approximately 2064. (CIWMB 2008c.)

Hazardous Waste

Amador County's Class I waste is transported to General Environmental Management's hazardous waste storage and treatment facility in Rancho Cordova where 90 percent of the waste is recycled. The remaining portion is transferred to Clean Harbors Aragonite, LLC in Grantsville, Utah where it is incinerated. After 2020, Amador County's Class II waste is anticipated to be transported to Recology Hay Road Landfill in Vacaville, California.

Recycling

The CIWMA of 1989, also commonly known as AB 939, requires local agencies to implement source reduction, recycling, and composting in order to divert 50% of solid waste from landfill facilities (see discussion under "Regulatory Setting" above).¹ For 2012, the target solid waste generation rate for Amador County was 7.7 ppd per resident, and the actual measured generation rate was 4.1 ppd per resident (CalRecycle 2012). Therefore, as of 2012, Amador County was meeting its diversion rate goals.

To achieve compliance with AB 939, ACES has implemented residential and curbside recycling, home and business food waste composting, and business and special events recycling. Amador County Code Chapter 7.27 requires all covered building and demolition projects to divert at least 50 percent of debris generated from the landfill. This code section fulfills the mandate in the CalGreen building code.

¹ As of 2007, the 50% diversion requirement is measured in terms of per-capita disposal expressed as pounds per day (ppd) per resident and per employee. The new per capita disposal and goal measurement system uses an actual disposal measurement based on population, disposal rates reported by disposal facilities, and evaluates program implementation efforts.

FIRE PROTECTION SERVICES

Local fire protection services in Amador County are provided by seven separate, but cooperative, districts, which include Amador Fire Protection District (AFPD), Ione Fire Department, Jackson Fire Department, Jackson Valley Fire Protection District, Lockwood Fire Protection District, Sutter Creek Fire Protection District, and Kirkwood Meadows PUD. These local fire protection districts are responsible for responding to structural fires and providing emergency medical services within their service area. Protection from wildfires in rural areas (i.e., wildfires outside of urban communities) is primarily provided by state and federal agencies supported by local fire agencies (See Chapter 4.8, “Hazards and Hazardous Materials,” for additional information on wildland fire hazards in the County).

AFPD’s service area encompass approximately 491 square miles, constituting 85% of the unincorporated area in the County. AFPD serves the northern area of the County along the western Amador-El Dorado County line including Plymouth, as well as the areas east of Sutter Creek except for the Kirkwood Meadows PUD area in the northeast and Lockwood Fire Protection District’s area along the central Amador-El Dorado County line. The communities of Amador Pines, Fiddletown, Pioneer, Pine Grove, Volcano, Martell, Drytown, Willow Springs, and River Pines as well as the Golden Vale Specific Plan Area are within the AFPD bounds (Policy Consulting Associates 2014:194).

Twenty nine percent (29%) of the AFPD service area is served by other providers through automatic aid agreements. Territories within AFPD bounds served through automatic aid agreements with other providers include:

- ▶ 39 square miles in the Sutter Creek vicinity, including portions of Martell, are served by Sutter Creek Fire Protection District;
- ▶ 45 square miles in the Jackson vicinity, including portions of Martell, are served by the City of Jackson;
- ▶ 38 square miles in the Ione vicinity are served by the City of Ione; and
- ▶ 6 square miles in the Kirkwood vicinity from Silver Lake to the Alpine and El Dorado County borders are served by the Kirkwood Meadows PUD.

Other unincorporated communities with the AFPD boundaries are served by the AFPD as well as other fire protection service providers. The River Pines community is served by Pioneer Fire Protection District in El Dorado County as well as by AFPD. Latrobe Fire Protection District in El Dorado County responds to assistance requests to Latrobe and Old Sacramento Road in AFPD bounds. The California Department of Forestry and Fire Protection (CAL FIRE) responds to all calls in AFPD bounds.

Areas outside AFPD bounds include the five cities and unincorporated areas within two other districts:

- ▶ 72 square miles within Jackson Valley Fire Protection District, located in the southwest portion of Amador County, southwest of the City of Ione. The Jackson Valley Fire Protection District service area includes the communities of Camanche Village, Camanche North Shore, and Buena Vista; the Camanche Village Specific Plan Area; the recreation areas of Camanche and Pardee reservoirs; the northernmost boundary reaches Jeep Trail; and the easternmost boundary reaches just past the 90 degree turn in Stony Creek Road; and
- ▶ 22 square miles within the Lockwood Fire Protection District, which provides service to areas in the vicinity of Shake Ridge Road from just east of Quartz Mountain Road East to the CAL FIRE Dew Drop fire station.

Facilities and Services

The AFPD operate seven fire stations. These stations serve a median area of 53.4 square miles. Table 4.13-9 lists the fire station in the AFPD, the location, and types of equipment at each station.

Station Number	Location	Equipment
Station 111	26517 Meadow Drive, Pioneer	Type 3 engine 1,500-gallon water tender
Station 112	23770 Van de Hei Ranch Road, Pioneer	Type 2 engine (750 gallons) 3,500-gallon water tender
Station 114	19840 Highway 88, Pine Grove	Type 2 engine (800 gallons) Type 3 engine 1,500-gallon water tender
Station 115	18655 Ridge Road, Pine Grove	Type 2 engine (500 gallons)
Station 121	16850 DeMartini Road, Plymouth	Type 2 engine (750 gallons) Type 4 engine Type 1 water tender (3,500 gallons)
Station 122	18534 Sherwood Street, Plymouth	Type 2 engine (800 gallons) Type 3 engine 50-foot Telesquirt
Station 123	14410 Jibboom Street, Fiddletown	Type 2 engine (500 gallons), Type 3 engine, and 3,500-gallons water tender
Source: Policy Consulting Associates 2014:205		

There are a total of 56 sworn personnel, including the fire chief, two battalion chiefs, three assistant chiefs, and two prevention officers. AFPD reported that revenue from Measure M sales tax, which implemented a half-cent sales tax that is used solely for paid firefighter and emergency medical response personnel to staff existing fire stations, has made it possible to hire paid fire suppression personnel and as such AFPD began paying some personnel in October 2010. Of the 56 sworn personnel, 22 are paid (Policy Consulting Associates 2014:198).

AFPD has automatic agreements with Jackson Valley Fire Protection District, Ione Fire Department, Sutter Creek Fire Protection District, and Kirkwood Meadows PUD. AFPD has an informal mutual aid agreement with Latrobe Fire Protection District in El Dorado County. AFPD has cooperative agreements for the staffing of district-owned apparatuses. Ione volunteers staff a district-owned rescue squad in the City of Ione and Jackson call firefighters staff a district-owned 75-foot aerial apparatus, housed in Jackson.

In addition to mutual and automatic aid agreements, regional collaboration efforts benefit participating agencies by pooling resources, minimizing costs and improving safety and efficiency. In 2003, seven cities and fire districts in Amador County joined together to form Amador Fire Protection Authority for the purpose of planning enhanced fire protection in the County on a regional and consolidated basis. AFPA is a regional Joint Powers Authority (JPA) consisting of each of the fire service providers in Amador County, with the exception of Kirkwood Meadows PUD. AFPA is a JPA that works to improve the existing fire services throughout Amador County and seeks to ensure the system evolves to meet growing needs by encouraging local advancement to paid staff positions while maintaining and strengthening the local volunteer system. (Burr Consulting 2008a: 59.)

Service Demand and Response Times

There were 1,844 service calls in 2012, excluding wildland fire calls for CALFIRE. A majority of the calls (74%) in the AFPD were medical emergencies, another 5% percent were fire-related events (structure, vehicle, and wildland), 5% were classified as non-fire hazardous materials; 1% were false alarms, and 18% of calls were categorized as other. Rural districts in the foothills with extensive wildland areas and a greater wildfire hazard tended to have a higher share of calls related to fire.

AFPD averaged 107.5 dispatched service calls per 1,000 residents in 2012 and the majority of these calls are received between 12:00 p.m. and 6:00 p.m. (Policy Consulting Associates 2014:205).

The Insurance Services Office (ISO) rating is the recognized classification for a fire department or district's ability to defend against major fires. According to the ISO, newly developing urban areas should have a fire station opened within 1.5 miles of all commercial development and 2.5 miles from all residential development when "build-out" exceeds 20% of the planning area. A rating of 10 generally indicates no protection, whereas an ISO rating of 1 indicates high firefighting capability. AFPD's service goals include achieving an ISO rating of 6 for all areas with qualifying water systems (a hydrant within 1,000 feet) and a rating of 8 for all areas not having water hydrants. The district achieved these goals, with ratings of 6 and 8 for areas with and without fire hydrants, respectively, as of the last grading in 2004 (AFPD 2014.)

Emergency response time standards vary by level of urbanization of an area: the more urban an area, the faster a response is required. The response time guideline established by the California EMS Agency is five minutes in urban areas, 15 minutes in suburban or rural areas, and as quickly as possible in wilderness areas. The district's primary response zone includes suburban, rural, and wilderness classifications. AFPD's median response time is 7.4 minutes and its 90th percentile response time is 11 minutes. (Policy Consulting Associates 2014:205.)

Service Adequacy

AFPD's reports moderately increasing service demand from new development and growth between 2000 and 2010. Future residential and commercial development will require new facilities, equipment, personnel, and sources of revenue. (Policy Consulting Associates 2014:196.) A new station is planned in the Pine Grove area near the intersection of Mt. Zion Road and State Route 88 and an additional station is scheduled to be built in Martell in 2017 (Policy Consulting Associates 2014:203).

AFPD reported that the current financing level is adequate to deliver services, due to the addition of Measure M funds (Policy Consulting Associates 2014:197). Other funding sources include County General Plan funds, fees for service, and property taxes. AFPD collects development impact fees to fund additional fire protection facilities and equipment to meet the increased demand within the AFPD. Currently, the residential fee is \$250 per unit and the commercial fee is \$650 plus an additional cost of \$0.25 to \$0.60 per square foot, depending on risk categorization. Structures larger than 5,000 square feet or three stories in height are assessed individually to determine their impact fee amount, as large structures create unusual fire risk. The AFPD reports that development impact fees have been adequate to meet the financial needs of the District; however, additional financing is needed in the AFPD to finance future facilities (Policy Consulting Associates 2014:198).

As new developments have increased in recent years, urban providers are considering consolidation or a formal partnership agreement as an option to meet the increasing demands generated by population growth. AFPD, the City of Jackson, Lockwood Fire Protection District, and Sutter Creek Fire Protection District are discussing the possibility of consolidation or related alternatives to promote sharing of resources and improved response coordination in the cities of Jackson, Sutter Creek, and Amador City (served by Sutter Creek Fire Protection District), as well as Martell. The goal of this possible consolidation would be to improve services around Jackson, Martell, and Sutter Creek and provide some level of paid firefighter staffing for the area. As of 2014, no actions have been taken to consolidate these districts (Policy Consulting Associates 2014:204). AFPD's automatic aid agreements with both Sutter Creek Fire Protection District and Jackson Fire Department include provisions for the

parties to jointly work on developing a regular fire authority in the Jackson, Sutter Creek, and Martell. (Policy Consulting Associates 2014:23.)

LAW ENFORCEMENT SERVICES

The Amador County Sheriff's Office (Sheriff's Office) provides law enforcement services to the unincorporated areas of Amador County and provides contract services to Amador City, the City of Plymouth, land owned by EBMUD adjacent to Lake Camanche and Pardee Reservoir, and all county waterways via the California Department of Boating and Waterways. Amador County provides assistance to El Dorado County in portions of El Dorado County that are inaccessible to El Dorado County safety providers during winter months. The Sheriff's Office also provides services to USFS lands within Amador County through a limited MOU to supplement, as the patrols of the local USFS stations lack an independent patrol. (Policy Consulting Associates 2014:551.)

Services and Facilities

Specialized units within the Sheriff's Office include a dive team, search and rescue, a combined narcotics enforcement team, a marine enforcement unit, an off-highway vehicle enforcement unit, a K-9 unit, Investigations Unit, Crime Scene Investigator, Crisis Negotiations Unit, and a Special Weapons and Tactic Team (SWAT) (Sheriff's Office 2008). The Sheriff's Office provides traffic enforcement services in the contract cities and may provide such services in the unincorporated jurisdiction; however, the California Highway Patrol holds primary responsibility for traffic enforcement and accident investigation on County roads and state highways (Policy Consulting Associates 2014:551).

As of 2014, the Sheriff's Office employs 1020 employees, including 30 deputy sheriff's, eight extra help deputy sheriff's, 20 corrections officers, two correctional assistants, 11 sergeants, six corrections sergeants, 10 dispatchers, one dispatch supervisors, three lieutenants, two captains, seven professional staff personnel dedicated to law enforcement services, one undersheriff and the Sheriff. The Sheriff's Office has 1.7 paid sworn officers per 1,000 residents (Policy Consulting Associates 2014:556).

Eight overlapping beats are regularly patrolled within the County. Beat assignments are dependent upon the number of patrol officers on a particular shift. Beats 10, 20, and 30 divide the County into thirds, while Beats 60 and 70 divide the County in half (Policy Consulting Associates 2014:552). Specialty assignment beats include, Beat 40 which is EBMUD patrol and/or Marine patrol; Beat 50 which is the contract cities; Beat 80 which is predominately the USFS portion of the County area; and Beat 90 is a cover deputy who has patrol responsibility for the entire County.

The Sheriff's Office maintains two facilities (Policy Consulting Associates 2014:553):

- ▶ Amador County Sheriff's Office and Jail—700 Court Street, City of Jackson
- ▶ Amador County Sheriff's Office Warehouse—12370 Airport Road, Martell

The Sheriff's Office currently leases 32 vehicles from the General Services Administration, 17 of which are available for routine patrol. The remaining are specialty vehicles (unmarked, administration, vessels, SWAT, CSI, Office of Emergency Services, or Search and Rescue).

Crime Rates

Serious crime rates in the Sheriff's Office's service area ranged between 21 and 26 crimes per 1,000 residents in most years between 2007 and 2013 with rates peaking at 26 crimes per 1,000 residents in 2011. Violent crimes peaked in 2012, with 10 violent crimes per 1,000 residents and property crimes peaked in 2011 with 17 crimes per 1,000 residents. Violent and property crimes in 2013 were 8.77 per 1,000 residents and 12.63 per 1,000 residents.

Crime clearance rates are the proportion of crimes that are solved or cleared. There are no standards or guidelines on the proportion of crimes that should be cleared. Cleared crimes refer to offenses for which at least one person was arrested, charged with the offense, and turned over to the appropriate court for prosecution. A crime is also considered cleared by ~~exceptional means~~ if the offender dies, the victim refuses to cooperate, the offender is identified and prosecution is requested or extradition is denied. From 2007 to 2013, the Sheriff’s Office’s average violent crime clearance rate was 82.07% (with a high of 91.86% during 2013) and average property crime clearance rate was 23.95 - with a high of 29.44% in 2007.

Service Response Times and Adequacy

In 2012, the Sheriff’s Office responded to 6,725 calls for service. The ACSO average response time for all calls in 2012 was 19 minutes and response time averaged 9 minutes for priority one calls. (Policy Consulting Associates 2014:556.)

ACSO reports that call volume has not increased due to recent developments, but such an increase is expected as development occurs in the planning area. Currently, the ACSO does not have the capacity to serve planned development in the County. The main station, communications center, and jail in Jackson are outdated, overcrowded, and functioning at maximum capacity with current demand. Currently there are no plans to expand this facility (Policy Consulting Associates 2014:553II-490).

PUBLIC SCHOOLS

ACUSD provides K-12 education to students living in Amador County. The ACUSD currently operates 13 schools throughout Amador County including two high schools, one continuation high school, one independent study two junior high schools, and six elementary schools, as well as a County Office of Education operated opportunity school, (see Table 4.13-10). ACUSD had a 2012–2013 school year enrollment of 3,884 students (CDE 2012).

School	Location	Grade	Enrollment
Amador High	330 Spanish Street, Sutter Creek	9–12	627
Argonaut High	501 Argonaut Lane, Jackson	9–12	559
Independence High	525 Independence Drive, Sutter Creek	10–12	73
Ione Elementary	415 South Ione, Ione	K–5	459
Ione Junior High	450 South Mill Street, Ione	6–8	353
Jackson Elementary	220 Church Street, Jackson	K–5	415
Jackson Junior High	333 Rex Avenue, Jackson	6–8	265
North Star	525 Independence Drive, Sutter Creek	K–12	97
Pine Grove Elementary	20101 Highway 88, Pine Grove	K–6	275
Pioneer Elementary	24625 Highway 88, Pioneer	K–6	201
Plymouth Elementary	18601 Sherwood Street, Plymouth	K–6	236
Sutter Creek Elementary	340 Spanish Street, Sutter Creek	K–6	324

Source: Amador County Office of Education:6

ACUSD’s most recent facilities master plan was adopted in August 2005 and identified major facility issues and detailed information on future school needs, options, and costs. The 2005 student-yield generation rates for ACUSD is 0.18 students per dwelling unit for grades K–6, 0.07 students per dwelling unit for grades 7–8, and

0.11 students per dwelling unit for grades 9–12 for a total student-yield generation rate of 0.36 students per dwelling unit (ACUSD 2005).

Enrollment in the ACUSD has steadily declined from a high of 4,794 students in 1998-99 to a low of 3,884 students in the current 2012-2013 school year. The ACUSD’s school sites are each under capacity when evaluating current enrollment compared to the number of students that can be accommodated on each site. For 2012-13, the District’s enrollment is 58% of available capacity. (Amador County Office of Education:7.)

The ACUSD is funded by federal, state, and local sources. The district can receive local funding through property taxes and various fees, including the Amador County/ACUSD Secured Roll taxes, Amador County/ACUSD District Supplemental Taxes, Tax Relief/Homeowners Exemptions, and Tax Relief/Timber Yield Taxes; developer impact fees; tax revenue from Mello-Roos districts; and General Obligation (GO) bonds. As of August 2011, developer impact fees for residential development are \$2.97 per square foot and \$0.46 per square foot for commercial/industrial construction. These fees are automatically adjusted annually. Developer fees may be used to finance new schools and equipment, and to reconstruct existing facilities to maintain adequate housing for all the district’s students. Mello-Roos districts are defined tax areas usually associated with new residential subdivisions, which are often used for additional school taxes.

In November of 2002, the voters of Amador County voted in favor of Measure F, a general obligation bond that would generate \$11 million in local funds to renovate and upgrade the schools in Amador County. Measure F also made the District eligible for an additional \$11 million in state bond funds. Measure F funds have been used throughout the District for specific projects, which included but were not limited to the following:

- ▶ upgrading of inadequate electrical systems to improve efficiency and safety;
- ▶ replacing old heating and plumbing systems with new, energy-efficient systems;
- ▶ providing of better access to student classroom technology;
- ▶ upgrading of a science lab;
- ▶ constructing a new multipurpose room at Argonaut High and Ione Junior High; and
- ▶ improving school safety and fire prevention systems.

PARKS AND RECREATION

Amador County, the Pine Grove Community Services District, and the Volcano Community Services District provide parkland in the planning area. A total of 118.4 acres of parkland are currently located within the planning area, including 11.8 acres of neighborhood parks, 98.0 acres of community parks, 6.2 acres of regional parks, 0.3 acre of special use areas, 0.5 acre of landscaped area, and 1.6 acres of undeveloped parkland. Table 4.13-11 summarizes these park and recreational facilities within the Unincorporated County. ACRA does not operate any trails or other undeveloped recreation areas; however, trails and undeveloped recreation areas are available both within National Forest areas in the eastern portion of the County and in EBMUD’s lands along Pardee and Camanche reservoirs.

ACRA has adopted a policy requiring provision of five acres of parkland for every 1,000 residents. In 2012, the County’s parkland acreage to population ratio in the planning area is currently 7.2 acres per 1,000, which is greater than the current land dedication requirement of 5 acres per 1,000 residents. (ACRA 2006: 4-14, Policy Consulting Associates 2014:529.)

The County receives funding for parks through many sources. Primary funding is through development impact fees (i.e., “Quimby” fees) and in-lieu fees. Development impact fees, as of 2012, are \$8,760 per dwelling unit in Jackson and Sutter Creek; \$4,300 in the unincorporated County, Plymouth and Amador City; \$3,284 in Ione (Policy Consulting Associates 2014:529). In-lieu fees are based on fair market value of land needed to meet the same ratio of persons to acreage of parkland. Other sources of revenue include General Fund monies, grants, and

donations. These fees are be used to acquire land for parks or for expansion of existing parks and to pay for improvements to new parks or expansion of facilities at existing parks (ACRA 2006: 7-3).

Table 4.13-11 Summary of Parks and Recreation Facilities in Unincorporated Amador County		
Park Site	Classification	Acres
Amador County		
Fiddletown Park	Neighborhood Park	2.0
Lions Park	Regional Day Use Park	6.2
Molly Joyce Park	Community Park	76.0
Pioneer Park	Community Park	22.0
River Pines Park	Undeveloped	1.6
Schmidt Park	Landscaped Area	0.5
Pine Grove Community Services District		
Pine Grove Community Park	Neighborhood Park	1.1
Volcano Community Services District		
Soldiers Gulch Park	Special Use Area	0.3
Volcano Memorial Park	Neighborhood Park	8.7
Total		118.4
Source: ACRA 2006: Table 3.1; Burr Consulting 2008b: II-467; compiled by AECOM 2009		

ACRA plans to provide additional parkland through developing a vacant 17-acre park site in Pine Grove and acquiring 15 acres between Sutter Creek and Amador City. (ACRA 2006: 5-8 Policy Consulting Associates 2014:528.)

STORMWATER DRAINAGE

Stormwater drainage infrastructure within the planning area consists of a network of natural and improved streams, storm channels, storm drains, and catch basins. Amador County does not have a comprehensive stormwater system, and individual portions of the drainage infrastructure in the planning area are owned and maintained by both public and private entities.

4.13.3 IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

Analysis of potential impacts related to public services and utilities is based on comparing existing service capacity and facilities, staffing, and equipment against future projected demand resulting from the adoption and implementation of the Draft General Plan, and assessing whether increased demands could result in the construction of additional facilities that could create environmental impacts. Demand for services was evaluated at a programmatic level based on anticipated numbers of units, commercial square feet, and population in 2030 under the Draft General Plan (see Table 3-1 in Chapter 3, “Project Description”). Where possible, future service demand was quantified. Demand factors and generation rates used to calculate water supply demand; wastewater generation; solid waste generation; electrical service; and fire protection, law enforcement, school, and park

service and facilities demand are described within each impact analysis. Evaluation of potential public services and utility impacts is based on a review of the following documents pertaining to the planning area:

- ▶ Infrastructure, Public Facilities, and Services Draft General Plan Update Working Paper (Amador County 2007a);
- ▶ Mokelumne, Amador and Calaveras Integrated Regional Water Management Plan (RMC 2006);
- ▶ Amador Water Agency Urban Water Management Plan (AWA 2011);
- ▶ Amador County Regional Wastewater Management Plan (ECO:LOGIC Engineering 2005);
- ▶ Energy Draft General Plan Update Working Paper (Amador County 2007b);
- ▶ Amador County Park and Recreation Master Plan (Amador County Recreation Agency 2006);
- ▶ Amador Local Agency Formation Commission Municipal Services Review: Volume I (Burr Consulting 2008a);
- ▶ Amador Local Agency Formation Commission Municipal Services Review: Volume II (Burr Consulting 2008b);
- ▶ Amador Local Agency Formation Commission Municipal Services Review Public Review Draft (Policy Consulting Associates 2014);
- ▶ Amador County Unified School District Developer Fee Justification Report (ACUSD 2008); and
- ▶ Facilities Inventory and Utilization Plan (Amador County Office of Education 2013).

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, impacts to public services, recreation, or utilities are considered significant if implementation of the Draft General Plan would do any of the following:

- ▶ create a need for the development of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance measures for fire, police, schools, parks, or other public facilities; the construction of which could result in significant environmental impacts;
- ▶ increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- ▶ include recreational facilities, or require the construction or expansion of recreational facilities that might have a substantial adverse physical effect on the environment;
- ▶ exceed wastewater treatment requirements of the Central Valley RWQCB;
- ▶ require or result in the expansion or construction of new water, wastewater treatment, or stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- ▶ lack sufficient water supplies to serve the project from existing entitlements and resources or require new or expanded entitlements;

- ▶ result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments;
- ▶ generate solid waste beyond the capacity of existing landfills serving the planning area; or
- ▶ violate federal, state, or local statutes and regulations related to solid waste.

IMPACT ANALYSIS

IMPACT 4.13-1 **Increased Demand for Water Supplies.** *Implementation of the Draft General Plan would increase the demand for surface water and groundwater supplies in the planning area. Although the County’s water purveyors have identified plans to provide an adequate water supply, uncertainties regarding the availability of long-term water supplies needed to serve new development under the Draft General Plan in certain locations related to future water supplies would make this impact significant.*

Implementation of the Draft General Plan would increase the demand for surface water and groundwater in the AWA service area as well as the JVID, Pine Grove CSD, River Pines PUD, Drytown CWD, Fiddletown CSD, Kirkwood Meadows PUD, Volcano CSD, Rabb Park CSD, and EBMUD. The following analysis provides the water demands, identifies available surface water and groundwater supplies to meet those demands, and discusses the reasonable likelihood of water supplies to meet the water demands new development identified in this Draft General Plan. Implementation of the General Plan would also increase the use of private wells and allow of continued expansion of agricultural operations that rely of groundwater.

Section 4.13.2, “Environmental Setting,” presents 2010 and estimated 2030 water supply, water demand, and normal, dry, and multiple-dry year scenarios for the AWA service area. These estimates, from the UWMP, assume that AWS would continue to divert 15,000afy of surface water from the Mokelumne River under its pre-1914 water right. CAWP would continue to divert 1,150 afy of surface water from the Mokelumne River under its existing post-1914 water right. The UWMP estimates also include AWA’s plans to secure an additional 1,050 afy surface water rights for the CAWP system by 2015. With these additional surface water supplies, the total surface water diversions would increase from 1,150 afy to 2,200 afy in the CAWP service area.

Buildout of La Mel Heights is anticipated to occur by 2020 and groundwater pumped from the existing well within this community would meet water demands. Water supplies for the Lake Camanche Village would be provided either from groundwater pumped from wells within the community or from a new surface water treatment plant.

AWA released the Lake Camanche Groundwater Sustainability Study for the Lake Camanche Village area in June 2012. Projected 20-year water demand is 917 afy, of which 765 afy is attributable to residential, non-residential, and agricultural land uses (with the balance of water demand from the East Bay Municipal Utilities District, Buena Vista Rancheria Casino, and the Camanche Hills Hunting Preserve). Projected 20-year water balance is 9,033 afy during multiple dry years, with sustainable yields of 1,800 afy per year, assuming coordinated and considerable well-field balancing efforts. This sustainable yield greatly exceeds the anticipated 20-year projected demand usage of 917 afy. (Dunn 2012:146.)

AWA’s planned water supplies, as detailed in the UWMP (summarized in Table 4.13-5 above), would be adequate to meet 2030 water demands within its service area, including water demands for new development identified in this Draft General Plan. However, the availability of some of these future supplies, specifically additional surface water rights for CAWP and additional groundwater supply for Camanche Village, is uncertain. The Camanche Area Regional Water Supply Study (Upper Mokelumne River Watershed Authority 2013) provides a phased approach to providing surface water to the region. Phase I has been funded and is under construction.

The County's land use permitting process require project applicants to demonstrate the availability of water supplies to meet proposed project demands, and Draft General Policies have as goal of ensuring all future development has adequate water supplies (Policies C-1.1, 1.2, 1.3, and 1.4). However, because of the uncertainties regarding the availability of long-term water supplies needed to serve new development under the Draft General Plan in certain locations, this impact would be **significant**.

Mitigation Measure 4.13-1a: Implement Program D-1a(4-5), Development Proposal Evaluation

- a. The County will review proposed projects for consistency with goals, policies, and implementation programs of this general plan.

Evaluation criteria for discretionary development proposals include:

4. Availability of public water and wastewater, and ability to connect to existing water and wastewater systems. The objective of this program is to avoid impacts related to lack of reliable water supply, including sufficient water for fire hydrant flow criteria, or wastewater service. If feasible, new units will be required to connect to nearby existing water or wastewater systems. Project applicants must demonstrate the availability of water supply, water treatment capacity and wastewater treatment.

If increased water or wastewater capacity is required, applicants must pay their fair share of the necessary improvements. Where septic or connection to an existing wastewater system is not feasible, the County will require new development to demonstrate a means of wastewater collection, treatment, and reuse or disposal will be created that would be operated by an approved entity with adequate technical, financial, and managerial resources to assure safe and effective operation. Any such proposed method shall be consistent with goals and objectives of the general plan as well as any planning goals of the operating entity.

5. Availability of water and septic capacity. For projects being served by private well and septic systems, the applicant must demonstrate the availability of sufficient water and septic treatment capacity in accordance with the County's Code.

Responsible Agencies/Departments: Planning, Transportation and Public Works, and Environmental Health Departments

Working With: Amador Fire Protection District and water and wastewater agencies.

Time Frame: Ongoing

Mitigation Measure 4.13-1b: Implement Program P-3 a1-3 and b, Future Water Supply

- a. The County will provide input to water suppliers in their efforts to plan for coordinated response to future water demand, and future water supply emergencies, including needed capacity during wildfires, and droughts. These efforts would include integrated regional water management plans (addressing surface and groundwater resource, wastewater, stormwater treatment and use, development of reclaimed water, and flooding). These plans should include information on areas with water service capacity. The objective of this planning effort is to assure sufficient reliable water supplies are available to serve new projects, as well as existing and planned development. This planning effort will include:

1. Planning for adequate water supply and water treatment capacity to support future development.
2. Development and implementation of reasonable best management practices for water conservation. These may include (but are not limited to) use of graywater, reclaimed, or recycled water for irrigation, water-conserving plumbing fixtures, and low-water landscapes.

3. Development of water-use standards and regulations to limit demands during water supply emergencies and droughts.
 4. ~~Communicate to all appropriate federal elected officials, federal agencies and departments, that Federal Wild and Scenic, National Recreation Area, or similar designations of surface waters in or adjacent to the County would be incompatible with the long term water needs of Amador County.~~
- b. The County will consult with water suppliers as they pursue water and wastewater plans to develop adequate water supplies through expansion of surface water storage, conjunctive use of surface water and groundwater, water conservation, and water recycling.

Responsible Agencies/Departments: Planning, Building, Transportation and Public Works, and Environmental Health Departments

Working With: ~~Water Providers~~ Agencies

Time Frame: Ongoing; Urban Water Management Plans updated at 5-year intervals.

Mitigation Measure 4.13-1c: Implement Program F-1, Infrastructure Improvements

- a. In order to assure that adequate infrastructure is in place to support existing and planned development, the County will consult with water and wastewater providers to support development of new treatment facilities or conveyance systems to minimize:
 1. Disposal by leach field in areas of marginal soils or site conditions which may lead to degrading groundwater quality.
 2. Potential threats to water resources or the public from wastewater treatment system failures.
 3. The risk of loss of life or property due to inadequate water infrastructure that serves fire hydrants.
- b. The County will maintain and improve existing drainage and stormwater infrastructure. Where right-of-way is available, new drainage and stormwater infrastructure may be developed as needed. The County will explore consolidation of this function to a single County department or responsible agency. When maintaining or developing drainage and/or stormwater infrastructure, the County will consider vector control needs.
- c. The County will consult with businesses interested in expanding existing operations or establishing new operations regarding installation of necessary infrastructure improvements. County actions may include:
 1. Share existing engineering studies and plans (in conjunction with Amador Water Agency and other water providers) on water supply and treatment capacities, wastewater collection, conveyance and treatment capacities, stormwater drainage and roadway improvements.
 2. Consult with project applicants where County improvement plans call for extension or upgrades to infrastructure.
 3. Consider financing options to assist applicants in providing necessary infrastructure, including tax credits, deferred fee payment programs, reimbursement of costs for infrastructure improvements and amortization of infrastructure fees.
 4. Allow for phased extension or upgrades to infrastructure in conjunction with approved phasing plans for site development.

Responsible Agencies/Departments: Planning Department, Transportation and Public Works Department, and Environmental Health Department, ~~Board of Supervisors~~

Working With: Water and wastewater providers, including Amador Water Agency, Amador Regional Sanitation Authority

Time Frame: Ongoing

Mitigation Measure 4.13-1d: Implement Program F-2a-c & e, Future Water Supplies and Funding

- a. In consultation with the County’s water suppliers and local agencies, the County will identify and pursue alternative funding sources for projects that improve water resources and management in Amador County.
- b. Consult with Amador County water purveyors to find adequate water for agricultural users. Agricultural water users should be encouraged to utilize surface water supplies, reclaimed water or treated wastewater. Encourage water purveyors to develop an agricultural water fee scale.
- c. Consult with Amador County water purveyors to retain access to water rights and both existing and potential points of diversion on all rivers and waterways within the County.
- ed. Encourage local, state and federal water development projects beneficial to Amador County and work to develop additional water rights.

Responsible Agencies/Departments: Planning Department and ~~Board of Supervisors~~

Working With: Water suppliers, including Amador Water Agency

Time Frame: Ongoing, as requested by water suppliers

Significance after Mitigation

Implementation of mitigation measures 4.13-1a, 4.13-1b, 4.13-1c, and 4.13-1d would reduce this impact by requiring any development that would occur under the Draft General Plan to demonstrate available water supply, from a public system if available or from a private water well meeting the County’s existing requirements, along with efforts to fund and efficiently provide future capacity. However, because of uncertainties associated with the potential availability of future surface water and groundwater supplies in some locations, this impact would remain **significant and unavoidable**. No other feasible mitigation measures are available to reduce this impact to less than significant levels.

IMPACT 4.13-2 **Increased Demand for Water Conveyance and Treatment Facilities.** *Implementation of the Draft General Plan would increase demand for water storage, conveyance, and treatment facilities in the planning area. The availability of new water service connections is restricted by limited capacity at the Lone and Tanner WTPs and supply facilities at the Jackson Valley Irrigation District. New or expanded water supply facilities that could have significant impacts would be needed to serve growth under the Draft General Plan. This impact would be **significant**.*

Implementation of the Draft General Plan would include construction of new residential units and non-residential uses, increasing the demand for water conveyance and treatment facilities in the planning area. Water conveyance facilities would be constructed to serve residential and nonresidential development identified in this Draft General Plan and would meet any applicable County and AWA standards.

Although raw water supplies are available to meet water demands of the planning area, the availability of new water service connections is restricted by limited capacity at the Ione and Tanner WTPs. Based on existing demands and commitments in the form of will-serve or conditional will-serve letters, all remaining capacity at the Ione and Tanner WTPs is either utilized or reserved. As of April 2012, the Tanner WTP had a capacity of 5.7 mgd and AWA estimates the maximum daily usage was 4.4 mgd. (Policy Consulting Associates 2014:237, Amador County 2010: H-47.)

Expansion of the Tanner WTP would be required to provide treated water to new residential and commercial development. AWA plans to expand the plant to 8.0 mgd of treatment capacity in the future and any improvements at the treatment plant would require additional analysis under CEQA by AWA to identify and document specific impacts and any required mitigation measures. The Ione Water Treatment Plant is planned to be expanded with incremental capacity and is currently under design. In the long term, the Ione WTP is scheduled to be replaced by the Tanner WTP after its expansion.

The Buckhorn WTP serves the CAWP system. The treatment plant has a capacity of 3.4 mgd (Policy Consulting Associates 2014:237). AWA has not conducted an analysis of treatment capacity at the Buckhorn WTP. At the time that additional water treatment capacity is required, applicants will be required to fund these improvements (AWA 2009).

EBMUD, AWA, and the Calaveras County Water District have discussed plans for a joint surface water treatment plant project that would supply surface water to the Lake Camanche area (AWA 2011: 4-19). Surface water rights to supply this project have not been identified (RMC 2006: 3-17).

The County's land use permitting process requires applicants to demonstrate the availability of water treatment capacity and ability to connect to existing water systems to the County before approval of discretionary actions. If increased water treatment capacity is required, applicants must pay their fair share of the necessary improvements. AWA may consider interim improvements to both the Tanner and Ione WTPs to provide additional capacity for projects. The applicant for projects served by these WTPs will be required to construct or contribute financially towards these interim improvements. The County will work cooperatively with AWA to identify a list of water capital improvement projects needed to accommodate projected growth in both the interim (2020) and long-term (2030)

Because existing water conveyance and treatment facilities lack capacity to serve development which could occur under the Draft General Plan in certain locations, and plans for system improvements do not identify specific funding sources or construction dates that show their availability in advance of development, and because new or expanded water supply facilities that could have significant impacts would be needed, this impact would be **significant**. Physical impacts associated with construction of new water conveyance facilities are evaluated at a programmatic level throughout this EIR, since these facilities are part of the development that would occur under the Draft General Plan (see Chapter 3, "Project Description"). Impacts of specific new or expanded water supply facilities would be evaluated and mitigated through project-specific CEQA review.

Mitigation Measure: Implement Mitigation Measures 4.13-1a, 4.13-1b 4.13-1c, and 4.13-1d.

Significance after Mitigation

Implementation of mitigation measures 4.13-1a, 4.13-1b, 4.13-1c, and 4.13-1d would reduce this impact by requiring any development that would occur under the Draft General Plan to demonstrate available water supply facilities, along with efforts to fund and efficiently provide future facility capacities. However, because of uncertainties associated with the ~~potential~~ future water conveyance and treatment capacity in certain locations, and because project -specific mitigation of the impacts of specific water supply facilities cannot be guaranteed, this impact would remain **significant and unavoidable**. No other feasible mitigation measures are available to reduce this impact to less than significant levels.

IMPACT 4.13-3 **Increased Demand for Wastewater Collection, Conveyance, and Treatment Facilities.** *Implementation of the Draft General Plan in compliance with the Central Valley Regional Water Control Board requirements would increase the demand for wastewater collection, conveyance, and treatment facilities in the planning area. AWA maintains eight community leachfield systems and two systems treat wastewater to a secondary level; however, some of these systems have limited capacity to serve new development. Wastewater collected by the AWA in the Martell area is conveyed to the Sutter Creek WWTP, which is currently operating at capacity. New or expanded wastewater facilities that could have significant impacts would be needed to serve growth under the Draft General Plan. This impact would be **significant**.*

Implementation of the Draft General Plan would increase the demand for wastewater collection, conveyance, and treatment facilities in the planning area. AWA maintains eight community leachfield systems and two systems treat wastewater to a secondary level that is then applied to land for disposal (Table 4.13-6). Some of these areas, such as Pine Grove and Buckhorn, are subject to limited capacity for expansion and many of the small, local sewer systems in the County do not permit or greatly restrict new connections based on lack of capacity (Amador County 2010: H-49). According to AWA, significant technical and financial issues must be addressed before expansion of water and wastewater services can be undertaken in the Lake Camanche Village area to accommodate potential growth under the General Plan (Amador Water Agency, response to Notice of Preparation, letter dated August 31, 2009).

Wastewater collected by the AWA in the Martell area is conveyed to the Sutter Creek WWTP and disposed of via the ARSA system. The Sutter Creek WWTP has a permitted average dry-weather flow capacity of 0.48 mgd and a peak wet-weather flow capacity of 1.5 mgd. The Sutter Creek WWTP is currently operating at capacity due to elevated pollutant loads; no additional treatment capacity at the Sutter Creek WWTP is currently available (Amador County 2010: H-48).

According to the Urban Water Management Plan, AWA is preparing a regional approach for water reuse to maximize water recycling by developing a regional recycled water supply in lieu of raw and potable water. This project is being funded by a Proposition 84 grant through the Sierra Nevada Conservancy and will be coordinated with local wastewater and planning agencies that have been identified as potential partners in the region. AWA anticipates development of a regional reclaimed water supply to offset raw and potable water demands. It is anticipated that wherever economically and physically feasible and when such recycled water is of adequate quality and quantity, the Agency and its partners will endeavor to plan, collaborate, and implement the use of recycled water. Uses may include, but are not limited to, agricultural irrigation, commercial landscape irrigation, residential or multi-family dual plumbed landscape irrigation, construction water, industrial process water, and recreational impoundments.

Based on preliminary discussions with AWA, there are several potential options to providing wastewater service for the Martell area. AWA has contacted the City of Jackson and is pursuing a contract with the City for wastewater collection, conveyance, and treatment service. AWA is also currently working with the City of Sutter Creek to obtain additional wastewater treatment capacity by either expanding the existing Sutter Creek WWTP or constructing a new WWTP on a site already purchased by the City of Sutter Creek (Amador County 2010: H-48). The new treatment plant conveyance facilities would be sized to allow for future conditions and the conveyance of treated effluent to the Martell area and for reuse along the SR 88 corridor (City of Sutter Creek 2009: 6-5). Any improvements at the existing Sutter Creek WWTP or construction of a new WWTP would require additional analysis under CEQA by the City of Sutter Creek to identify and document specific impacts and any required mitigation measures. Funding and the schedule for completing these improvements are currently not defined.

The County's land use permitting process requires applicants to demonstrate the availability of wastewater treatment capacity and ability to connect to existing wastewater systems to the County prior to discretionary approval. If increased wastewater capacity is required, applicants must pay their fair share of the necessary improvements. Where septic or connection to an existing wastewater system is not feasible, the County requires new development to demonstrate a means of wastewater collection, treatment, and reuse or disposal would be

created that would be operated by an approved entity with adequate technical, financial, and managerial resources to assure safe and effective operation.

Because existing water wastewater conveyance and treatment facilities lack capacity to serve development which could occur under the Draft General Plan in some locations, and plans for system improvements do not identify specific funding sources or construction dates that show their availability in advance of development, and because new or expanded wastewater facilities that could have significant impacts would be needed, this impact would be **significant**. Physical impacts associated with construction of new wastewater collection and conveyance facilities are evaluated at programmatic level throughout this EIR, since these facilities are part of the development that would occur under the Draft General Plan (see Chapter 3, “Project Description”). Impacts of specific new or expanded wastewater facilities would be evaluated and mitigated through project-specific CEQA review.

Mitigation Measure: Implement Mitigation Measures 4.13-1a, 4.13-1b, and 4.13-1c.

Significance after Mitigation

Implementation of mitigation measures 4.13-1a, 4.13-1b, and 4.13-1c would reduce this impact by requiring any development that would occur under the Draft General Plan to demonstrate available wastewater conveyance and treatment capacity, and working to fund and efficiently provide future capacity. However, because of uncertainties associated with the ~~potential~~-future wastewater conveyance and treatment capacity, and because project-specific mitigation of new or expanded wastewater facilities cannot be guaranteed, this impact would remain **significant and unavoidable**. No other feasible mitigation measures are available to reduce this impact to less than significant levels.

IMPACT 4.13-4 ***Increased Generation of Solid Waste.** Implementation of the Draft General Plan would increase solid-waste generation in the planning area. Class III waste generated in the planning area is transported to the Kiefer Landfill. Kiefer Landfill has sufficient permitted capacity to meet the County’s solid-waste disposal needs based on development under the Draft General Plan, which could add 6.4 tons per day by 2030. This impact would be **less than significant**.*

New residents and employees that would be generated by development under the Draft General Plan would increase solid waste generation in the planning area. In addition, construction and demolition activities that would occur with development would generate wastes requiring disposal. Currently, Class III waste generated in the planning area is transported to the Kiefer Landfill.

Using CalRecycle’s approved 2009 per capita waste generation rate of 5.1 pounds per resident per day in Amador County and a 2009 population of 22,123, the planning area produced approximately 112,827 ppd of solid waste, or 56.4 tpd (CalRecycle 2009). Year 2030 development under the Draft General Plan would result in an additional 3,118 residents in the planning area. Based on an approved 2012 per capita waste generation rate 4.1 ppd, these residents would generate approximately 12,783 ppd of solid waste, or 6.4 tpd. As shown in Table 4.13-12, the total solid waste generated in the planning area would be 22,938 tons of waste annually (62.8 tpd).

Due to the nature and quantity of Class I and II waste, there are a limited number of these facilities throughout California. Local solid waste haulers would have the responsibility to either handle disposition of these wastes by transfer to the appropriate receiving facility or provide information of proper disposition. As discussed above, Class I waste is transported to General Environmental Management’s hazardous waste storage and treatment facility in Rancho Cordova and Clean Harbors Aragonite, LLC in Grantsville, Utah, and Class II waste is anticipated to be transported to Recology Hay Road Landfill in Vacaville, California.

**Table 4.13-12
Projected Generation of Solid Waste Under the Draft General Plan**

	Population	Solid Waste Generation (tons per year) ¹	Solid Waste Generation (tpd)
2009	22,123 ²	20,600	56.4
Projected Increase	3,118 ³	2,338	6.4
Estimated at 2030	25,241 ⁴	22,938	62.8

Notes: tpd = tons per day

- 1 Solid waste generation rates are based on CalRecycle's 2012 per capita waste generation rates.
- 2 As of January 1, 2009, the population of the planning area was estimated to be 22,123 people.
- 3 Estimated increase in population from implementation of the Draft General Plan (See Table 3-1 in Chapter 3, "Project Description").
- 4 Estimated total population under the Draft General Plan (See Table 3-1 in Chapter 3, "Project Description").

Source: Data compiled by AECOM 2014

Kiefer Landfill is permitted to accept 10,800 maximum tpd of solid waste with an average intake of 6,000 tpd. The site currently has a permitted capacity of approximately 117 million cubic yards (58 million tons) and a remaining capacity of 113 million cubic yards (56 million tons). Currently, the landfill is operating below permitted capacity, and the closure date of the Kiefer Landfill is anticipated to be approximately 2064. Kiefer Landfill has sufficient permitted capacity to meet the County's solid-waste disposal needs based on development under the Draft General Plan, which could add 6.4 tons per day by 2030. This impact would be **less than significant**.

Mitigation Measures: No mitigation measures are required.

IMPACT 4.13-5 Increased Demand for Fire Protection Facilities, Systems, Equipment, and Services. *Implementation of the Draft General Plan would result in increased demand for fire protection facilities and services within the AFPD service area, resulting in the need for additional facilities, the construction of which could have adverse impacts on the physical environment, and staff and equipment to maintain the existing level of service. This impact would be **significant**.*

New residential dwellings and commercial and industrial uses, as well as other land use changes that could occur under the Draft General Plan would result in increased demand for fire protection facilities and services within the AFPD service area, resulting in the need for additional staff and equipment to maintain an adequate level of service (AFPD currently has an ISO rating of 6 for areas within 1,000 feet of fire hydrants and 8 for other areas).

The AFPD does not have the adequate facilities, equipment, or staff to serve planned development in the county and relies on other providers for automatic aid. A new station is planned in the Pine Grove area near the intersection of Mt. Zion Road and State Route 88 and an additional station is scheduled to be built in Martell in 2017 (Policy Consulting Associates 2014:203). Future development in the planning area would be required to pay development impact fees to fund additional fire protection facilities and equipment. AFPD reported that the current financing level is adequate to deliver services, due to the addition of Measure M funds (Policy Consulting Associates 2014:197). Other funding sources include County General Plan funds, fees for service, and property taxes. (See Section 4.9, "Hazards and Hazardous Materials," for an analysis of hazards associated with wildland fires.)

Policies of the Draft General Plan are intended to guide new development to areas where adequate fire protection, roads, and water service adequate for fire response is available (Policy S-2.2); support efforts by fire districts to obtain adequate funding to provide fire protection at desired levels and implement impact fees if needed to provide adequate fire service (Policy S-3.1); and encourage cooperation and regional agreements among fire

districts and state and federal fire agencies to maximize fire protection capabilities across the County (Policy S-3.2). AFD and does not currently have capacity to serve future development that could occur under the Draft General Plan and additional financing will be needed to fund future facilities. ***Construction of new fire protection facilities would have adverse effects on the physical environment; therefore, this impact would be significant.*** Physical impacts associated with construction of new fire protection facilities are evaluated at a programmatic level throughout this EIR, since these facilities are part of the development that would occur under the Draft General Plan (see Chapter 3, “Project Description”). Impacts of specific new or expanded fire protection facilities would be evaluated and mitigated through project-specific CEQA review.

Mitigation Measure 4.13-5a: Implement Program P-6, Effective County Services

- a. In order to evaluate and maintain the effectiveness of County services, The County will develop service standards for library, public safety, fire response, emergency response, human, and social services. Actual performance will be compared to these standards on an annual basis, and results presented to the Board of Supervisors, with recommendations for action if necessary.
- b. Develop a standard for public safety staffing, facilities, and equipment. Based on the cost of maintaining this standard, the County will establish a program consistent with the Mitigation Fee Act to levy proportional impact fees on new development proposals.

Responsible Agencies/Departments: All Departments, County Administrative Officer

Time Frame: ~~December 2015, then ongoing~~ During annual budget process or other similar fiscal or review process, as determined appropriate.

Mitigation Measure 4.13-5b: Implement Program P-12, Emergency Response

- a. In order to maintain effective emergency and disaster response and reduce hazards related to fire, flood, and public safety emergencies, the County will implement and periodically update disaster plans, including the Multi-Hazard Mitigation Plan and Emergency Operations Plan, to meet federal, state, and local emergency requirements. This effort will include planning to coordinate response actions, and the identification and planning for evacuation routes for dam failure, wildfire, and flooding.
- b. The County will regularly assess the resources needed to effectively respond to disaster situations, and ensure proper staffing levels at emergency response agencies.
- c. The County will regularly assess the operational integrity of essential public facilities during emergencies, including flood emergencies, and identify actions to maintain operations, as necessary.
- d. The County will update equipment and training as necessary, including adopting training standards that meet or exceed state and national standards.
- e. The County will develop its capability to handle mass shelters in case of major disasters by maintaining a list of appropriate emergency shelter locations. These sites should be well connected to evacuation routes.

Responsible Department: County Office of Emergency Services, Sheriff’s Department, Police Departments

Time Frame: ~~December 2015 and~~ Ongoing

Mitigation Measure 4.13-5c: Implement Program D-1a(3), Development Proposal Evaluation

- a. The County will review proposed projects for consistency with goals, policies, and implementation programs of this general plan.

Evaluation criteria for discretionary development proposals will include:

- ▶ Adequate provision of emergency services, including fire services. Applicants must demonstrate that emergency services meeting the County's standards (see Program P-6 [Effective County Services]) can be provided to the proposed project. The objective of this program is to avoid or substantially reduce impacts to public services.

Responsible Agencies/Departments: Planning, Transportation and Public Works, and Environmental Health Departments

Working With: Amador Fire Protection District.

Time Frame: Ongoing

Mitigation Measure 4.13-5d: Implement Program F-3, Fire Services Funding

- a. The County will consult with the Amador Fire Protection District to establish funding mechanisms, including impact fees, to offset fire protection costs for new development in areas of high wildfire risk.

Responsible Agencies/Departments: ~~Board of Supervisors~~, Planning Department

Working With: Amador Fire Protection District

Time Frame: Ongoing

Significance after Mitigation

Implementation of ~~m~~Mitigation ~~m~~Measures 4.13-5a, 4.13-5b, 4.13-5c, and 4.13-5d would reduce this impact to **less than significant** because the County would establish service standards for fire protection, permit future development only in areas that meet those standards, and establish and collect fees necessary to support fire services. ~~2)~~Impacts of specific new or expanded fire protection facilities would be mitigated through project-specific CEQA review.

IMPACT 4.13-6 Increased Demand for Law Enforcement Protection Facilities, Systems, Equipment, and Services.
*Implementation of the Draft General Plan would increase the demand for new or expanded police protection facilities and services, resulting in the need for additional facilities, the construction of which could have adverse impacts on the physical environment, and staff and equipment to maintain the existing level of service. This impact would be **significant**.*

New residents and employees that could be generated by development under the Draft General Plan would increase the demand for new or expanded police protection facilities and services in the Sheriff's Office service area, resulting in the need for additional staff and equipment to maintain an adequate level of service. Development under the Draft General Plan could result in an increase of 3,118 residents within the planning area by 2030. To maintain the Sheriff's Office current average service level of two officers per 1,000 residents, the County would require an additional 7 new officers by 2030 to maintain this service level.

The Sheriff's Office does not have the capacity to serve planned development in the County. The main station, communications center, and jail in Jackson is outdated, overcrowded, and functioning at maximum capacity with current demand. It is anticipated that implementation of the Draft General Plan would result in the need to construct new facilities to maintain service levels as the County's population and development change. ***Construction of new police protection facilities would have adverse effects on the physical environment; therefore, this impact would be significant.*** Physical impacts associated with construction of new law enforcement facilities are evaluated at a programmatic level throughout this EIR, since these facilities are part of

the development that would occur under the Draft General Plan (see Chapter 3, "Project Description"). Impacts of specific new or expanded law enforcement facilities would be evaluated and mitigated through project-specific CEQA review.

Mitigation Measure: Implement Mitigation Measures 4.13-5a, 4.13-5b, and 4.13-5c.

Significance after Mitigation

Implementation of ~~m~~Mitigation ~~m~~Measures 4.13-5a, 4.13-5b, and 4.13-5c would reduce this impact to **less than significant** because the County would establish service standards for public safety services, and establish and collect fees necessary to support these services. Impacts of specific new or expanded law enforcement facilities would be mitigated through project-specific CEQA review.

IMPACT 4.13-7 **Increased Demand for Public School Facilities and Services.** *Implementation of the Draft General Plan would increase the demand for public school services in the ACUSD service area, resulting in the need for new or expanded school facilities, the construction of which could have adverse impacts on the physical environment, and additional staff and equipment. With payment of state-mandated school impact fees, impacts related to increase demand for school facilities and services would be **less than significant**.*

Implementation of the Draft General Plan would increase the demand for public school services in the ACUSD service area, resulting in the need for new or expanded school facilities and additional staff and equipment to maintain service standards. The addition of 1,685 dwelling units in the planning area could generate up to 607 students based on the ACUSD's 2005 student-yield generation rate of 0.36 student per dwelling unit (K-12).

Enrollment in the ACUSD has steadily declined from a high of 4,794 students in 1998-99 to a low of 3,884 students in the current 2012-2013 school year. The ACUSD's school sites are each under capacity when evaluating current enrollment compared to the number of students that can be accommodated on each site (Amador County Office of Education:7).

New development would be required to pay state-mandated school impact fees to ACUSD. Under Government Code Section 65996, the ACUSD is limited to charging the statutorily created fee to offset impacts resulting from proposed development and does not provide for remediation of existing deficiencies in school services. This fee is typically an insufficient amount to fund 100 percent of new school facility construction and operation; however, the California Legislature has declared that the school impact fee is deemed to be full and adequate mitigation under CEQA (California Government Code Section 65996). Therefore, this impact would be **less than significant**.

Mitigation for the impacts of constructing and operating additional school facilities is the responsibility of the ACUSD, which would provide school facilities to serve growth in the planning area. The additional students generated through implementing the Draft General Plan would raise enrollment to 4,491 compared to a recent peak of 4,794 students in the 1998-99 school year. Therefore, it is unlikely that new or substantially expanded facilities beyond those already available to the district would be required to accommodate the enrollment increase from implementing the Draft General Plan. Impacts of specific expanded facilities would be evaluated and mitigated through project-specific CEQA review.

Mitigation Measures: No mitigation measures are required.

IMPACT 4.13-8 Sufficiency of Proposed Parkland to Meet Increased Demand and Potential Increased Use and Deterioration of Existing Facilities. *Implementation of the Draft General Plan would result in new residents, which would increase the use and could cause the potential physical deterioration of existing park facilities. New or expanded recreation facilities that could have significant impacts would be needed to serve growth under the Draft General Plan. Because implementation of policies and programs in the Draft General Plan would ensure the provision of park and recreational facilities to serve the planning area, this impact would be less than **significant**.*

Implementation of the Draft General Plan would result in new residents, which would increase the use and could cause the potential physical deterioration of existing park facilities. Development under the Draft General Plan could result in an increase of 3,118 residents within the planning area.

Amador County, the Pine Grove Community Services District, and the Volcano Community Services District provide parkland in the Unincorporated County. The County's 2012 parkland acreage to population ratio in the planning area is 7.2 acres per 1,000 residents.

Future subdivisions and parcels maps for residential development within the planning area would be required, pursuant to County Code Chapter 17.50, to dedicate parkland or pay an in-lieu fee at fair market value. Development impact fees (applied to building permits for new dwelling units), as of 2012, are \$8,760 per dwelling unit in Jackson and Sutter Creek; \$4,300 in the unincorporated County, Plymouth and Amador City; \$3,284 in Ione (Policy Consulting Associates 2014:529). These fees are to be used to acquire land for new parks or for expansion of existing parks and to pay for improvements to new parks or expansion of facilities at existing parks.

Because current parkland to population ratios exceed Quimby Act thresholds (i.e., 3 acres per 1,000 residents) and implementation of existing fee and land dedication requirements would ensure the provision of park and recreational facilities to serve the planning area, the impact related to the availability of park and recreation facilities would be **less than significant**. Construction of new parks and recreation facilities would have adverse effects on the physical environment, and physical impacts associated with development of new parks and recreational facilities are evaluated at a programmatic level throughout this EIR, since these facilities are part of the development that would occur under the Draft General Plan (see Chapter 3, "Project Description"). Impacts of specific new or expanded recreation facilities would be evaluated and mitigated through project-specific CEQA review.

Mitigation Measures: No mitigation measures are required.

IMPACT 4.13-9 Require the Construction of New or Expanded Stormwater Drainage Facilities. *New and expanded stormwater drainage facilities would be needed to accommodate future land uses consistent with the Draft General Plan. The impact would be **significant**.*

Stormwater drainage infrastructure within the planning area consists of a network of natural and improved streams, storm channels, storm drains, and catch basins. Implementation of the Draft General Plan would result in construction of new land uses that would generate increased stormwater volumes in portions of the planning area. An increase in the area of impervious surfaces (e.g., rooftops, sidewalks, driveways, streets, parking lots) as a result of implementation of the Draft General Plan would result in higher rates of runoff during rain events. Increased flows would in turn create a need for new infrastructure to convey stormwater and prevent flooding.

The Amador County Code includes requirements to restrict or prohibit developed uses in flood zones; control the alteration of natural floodplains, stream channels, and other natural features that help accommodate or channel flood waters; and filling, grading or other development that could impede, increase, or redirect flood flows. The County is also subject to the State Water Resources Control Board's regulation of stormwater (See Section 4.9.1, "Regulatory Setting, in Section 4.9, "Hydrology and Water Quality). Draft General Plan policy C-4.1 also works

toward reducing the amount of stormwater runoff by encouraging less, or permeable pavement and inclusion of drainage features which limit runoff in proposed site plans.

Implementation of the Draft General Plan would result in the need to construct new stormwater facilities to prevent flooding or changes to drainage patterns. Constructing new stormwater infrastructure could have adverse effects on the physical environment; however, the physical impacts associated with development of new stormwater facilities are evaluated at a programmatic level throughout this EIR, since these facilities are part of the development that would occur under the Draft General Plan (see Chapter 3, “Project Description”). Impacts of specific new or stormwater facilities would be evaluated and mitigated through project-specific CEQA review.

New development would be designed in accordance with the Amador County Code to avoid downstream changes in stormwater flows, reducing the potential for downstream flooding. However, impacts due to increases in stormwater flow and construction of new stormwater infrastructure could remain **significant**.

Mitigation Measure 4.13-9a: Implement Program F- 1b, Infrastructure Improvements

- b. The County will maintain and improve existing drainage and stormwater infrastructure. Where right-of-way is available, new drainage and stormwater infrastructure may be developed as needed. The County will explore consolidation of this function to a single County department or responsible agency. When maintaining or developing drainage and/or stormwater infrastructure, the County will consider vector control needs.

Responsible Agencies/Departments: Environmental Health Department and Transportation and Public Works Department

Time Frame: Ongoing

Mitigation Measure 4.13-9b: Implement Program P-5, Stormwater Management

- a. The County will develop and implement a comprehensive stormwater management program. The objective of this program is to reduce adverse hydrology and water quality impacts by limiting the quantity and increasing the water quality of runoff flowing to the county’s streams and rivers.

This program will incorporate stormwater management programs for agricultural land that are developed and maintained within the Amador County Department of Agriculture

- b. Develop a recommended menu of best management practices (BMPs) to limit soil erosion and runoff from residential, commercial, mining, industrial and hazardous materials sites, which may include (but are not limited to) reduced pavement cover, permeable pavement, and drainage features which increase infiltration and groundwater recharge. The County will require use of some or all of these measures as permit conditions to reduce or avoid adverse erosion, water quality, and hydrology effects, including potential effects on the lifespan of existing water storage facilities. The menu may include low-impact development practices (such as naturalized stormwater management techniques and climate appropriate landscaping) which should be reviewed as part of Program P-1(e).

Responsible Agencies/Departments: Transportation and Public Works Department, Building Department, Planning Department, Department of Agriculture.

Time Frame: ~~December, 2015~~ Within 12 months of adoption of General Plan

Significance after Mitigation

Implementation of Mitigation Measures 4.13-9a and 4.13-9b would reduce impacts to stormwater drainage facilities to **less than significant** because the County would ensure that new stormwater infrastructure is developed as needed to accommodate new growth, and would develop and implement a comprehensive stormwater management program to reduce hydrology and water quality impacts. Impacts of specific new or expanded stormwater infrastructure would also be mitigated through project-specific CEQA review.