

MokeWISE Program Scope of Work:
Project 8d: Lake Camanche Village Recycled Water Project

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Abstract

The Lake Camanche Village Recycled Water project will develop a study to explore the feasibility of upgrading the Lake Camanche Wastewater Treatment Plant to tertiary treatment and providing recycled water for local use. The feasibility study will include a treatment plant update assessment and demand assessment. The study would also identify project alternatives and conduct an alternatives assessment in order to select a preferred alternative. Costs for this project are estimated to be \$150,000.

Background Information

Lake Camanche Village

Lake Camanche Village is located on the northern shore of Lake Camanche, a reservoir located on the Mokelumne River in Amador County. The village has approximately 240 residences, with a buildout of 395 parcels. It receives water and wastewater service from the Amador Water Agency (AWA). **Figure 1** shows the AWA wastewater service areas; Lake Camanche Village is located in the southwestern portion of the map.

Amador Water Agency

AWA provides both wholesale and retail treated water to Amador Water System, Central Amador Water System Project, La Mel Heights, and Lake Camanche Village. AWA has rights to 17,200 AFY of Mokelumne River, and uses the PG&E system to store and divert 1,150 AFY under the Central Amador Water Project (CAWP) out of a 2,200 AFY contractual right. AWA owns and operates the Amador Water System (AWS) under which AWA has contractual rights to up to 15,000 AFY. In addition to AWA's surface water rights, it also pumps groundwater to serve Lake Camanche Village and La Mel Heights.

Table 1 summarizes AWA's current and proposed water supplies; **Figure 1** shows the AWA water systems and service area.

Table 1: AWA Water Supplies

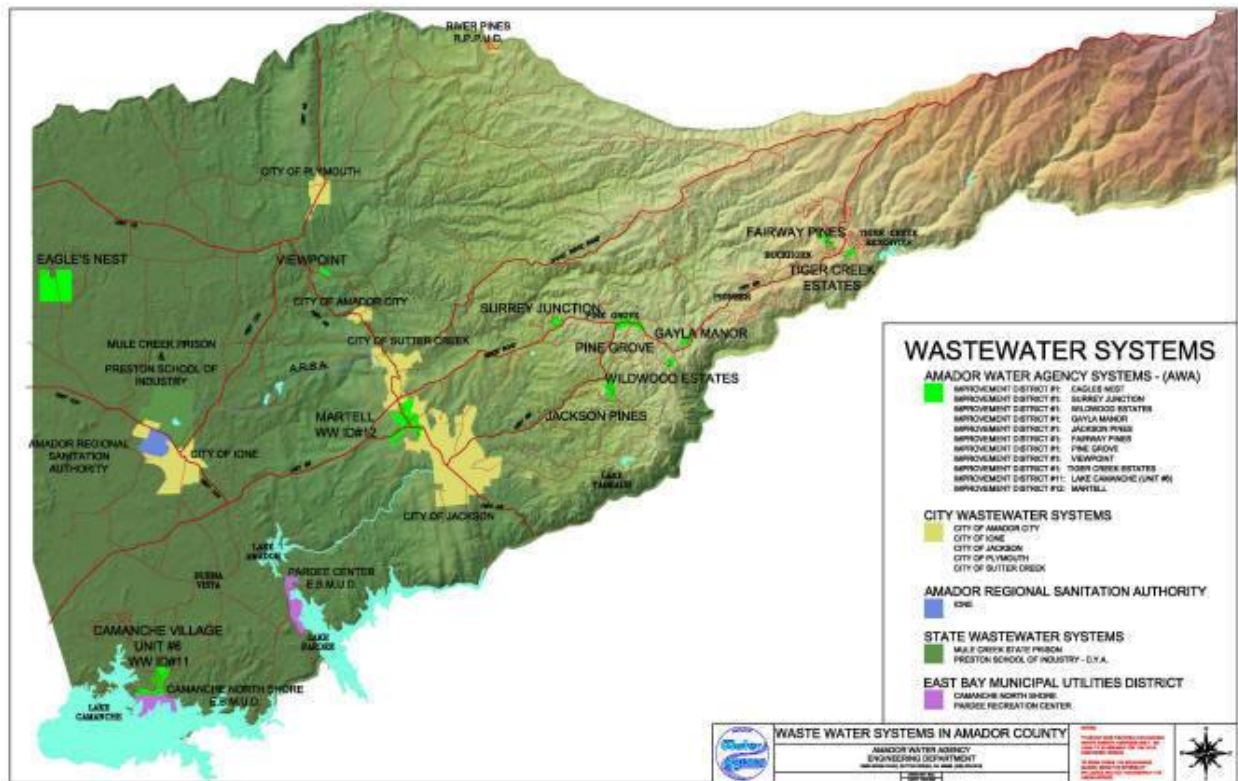
Supply	2010 (AFY)	2015 (AFY)	2020 (AFY)	2025 (AFY)	2030 (AFY)
Surface Water	16,150	17,200	17,200	17,200	17,200
Groundwater	296	369	441	511	581
Recycled Water	0	0	0	0	0
Incidental Transfer to EBMUD*	N/A	N/A	N/A	N/A	N/A
Total	16,446	17,569	17,642	17,711	17,781

Source: AWA, 2011

*Incidental transfers to EBMUD are not guaranteed for any specified amount, and so are not projected

AWA also provides wastewater treatment services to Lake Camanche Village, along with the communities of Fairway Pines, Tiger Creek Estates, Gayla Manor, Wildwood Estates, Surrey Junction, Jackson pines, Pine Grove, Martell, Viewpoint Estates, and Eagles Nest (AWA, n.d.). AWA owns two wastewater treatment facilities: Lake Camanche WWTP and the Gayla Manor WWTP. Wastewater from Lake Camanche Village is treated at the former.

Figure 1: Amador Water Agency’s Wastewater Service Areas

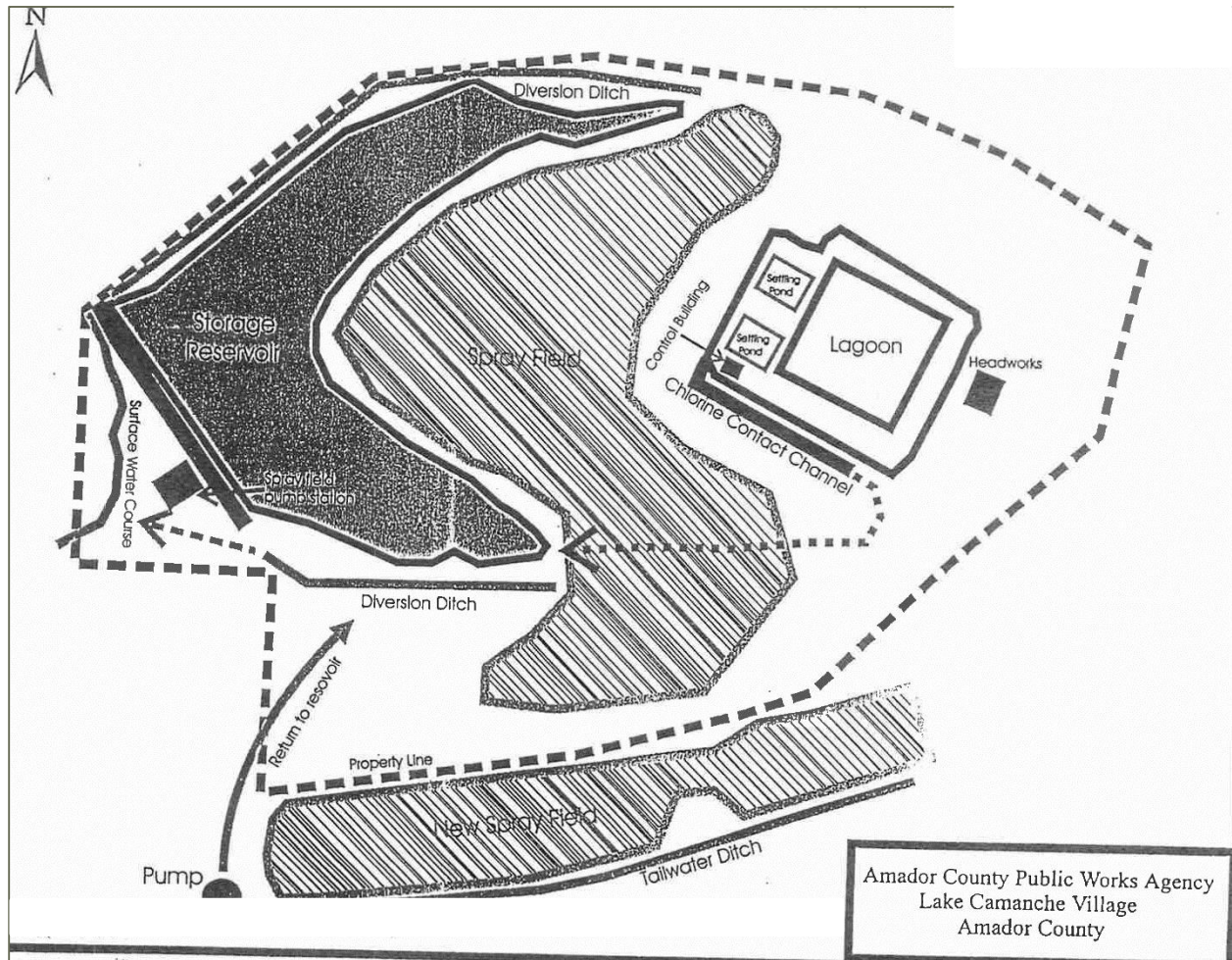


Source: AWA, n.d. (http://www.amadorwater.org/waste_wtr_srv_area.html)

Lake Camanche Wastewater Treatment Plant (WWTP)

The Lake Camanche WWTP has unknown capacity, as accurate flow meters were not in place at the time the Waste Discharge Requirements (WDRs) were adopted in 2001. It is regulated under the Central Valley Regional Water Quality Control Board’s Order no. 5-01-033, as well as Cease and Desist Order No. R5-2003-0126. Wastewater collected by the Lake Camanche system is treated using a 7 acre-foot (AF) aerated facultative pond, two 0.08 AF settling basins, chlorination facilities, a 19.5 AF unlined storage pond, and a 12-acre effluent sprayfield. Average flow to the facility between 2002 and 2005, which serves 243 residences, ranged from 41,000 to 90,000 gallons per day (gpd) (AWA 2006). Complete buildout of Lake Camanche Village is 395 parcels. The facility was designed for a buildout capacity of 281,000 gpd, but the spray field and storage pond were not built for this capacity. The facility had a history of violations, with three documented spills between 2003 and 2006, as the storage pond does not have the capacity to accommodate existing flows (RWQCB, 2006). There were no reported spills in 2012 or 2013, and a moratorium is in place for new wastewater services (Amador LAFCO, 2014). The Lake Camanche WWTP layout is provided in **Figure 2**.

Figure 2: Lake Camanche WWTP



Jackson Valley Irrigation District (JVID)

Jackson Valley Irrigation District (JVID) serves agricultural, industrial, and domestic users within its service area. JVID sells raw water to its agricultural, industrial, and some domestic users, and sells bottled water to the approximately 61 domestic users without access to private wells. Water provided by JVID is diverted from Jackson Creek and the Mokelumne River. JVID also owns and operates the Lake Amador Resort Area (LARA) treatment plant, which has a capacity of 175 gpm, but generally operations at 150 gpm when necessary. The LARA plant is supplied by water stored at Lake Amador (Amador LAFCO, 2014).

Recycled Water

Tertiary-treated recycled wastewater can be used for non-potable purposes in compliance with Title 22 of the California Code of Regulations. Recycled water is a local, drought proof supply, and can be used to offset demands for potable water, thereby conserving potable supplies. Common applications of recycled water include irrigation, landscape irrigation in public parks, ornamental fountains, and industrial uses such as cooling towers. There is limited recycled water use within Amador County.

Project Information

Project Description

The Proposed Project will develop a study to explore the feasibility of upgrading the Lake Camanche WWTP to tertiary treatment and providing recycled water for local use. There is potential for this recycled water to be distributed via a regional system.

Project Location

The Project would be located in Amador County, at the Lake Camanche WWTP, within the AWA service area, as shown in **Figure 1**, above.

Project Sponsor

The project is sponsored by the Amador Water Agency (AWA) in partnership with Jackson Valley Irrigation District (JVID).

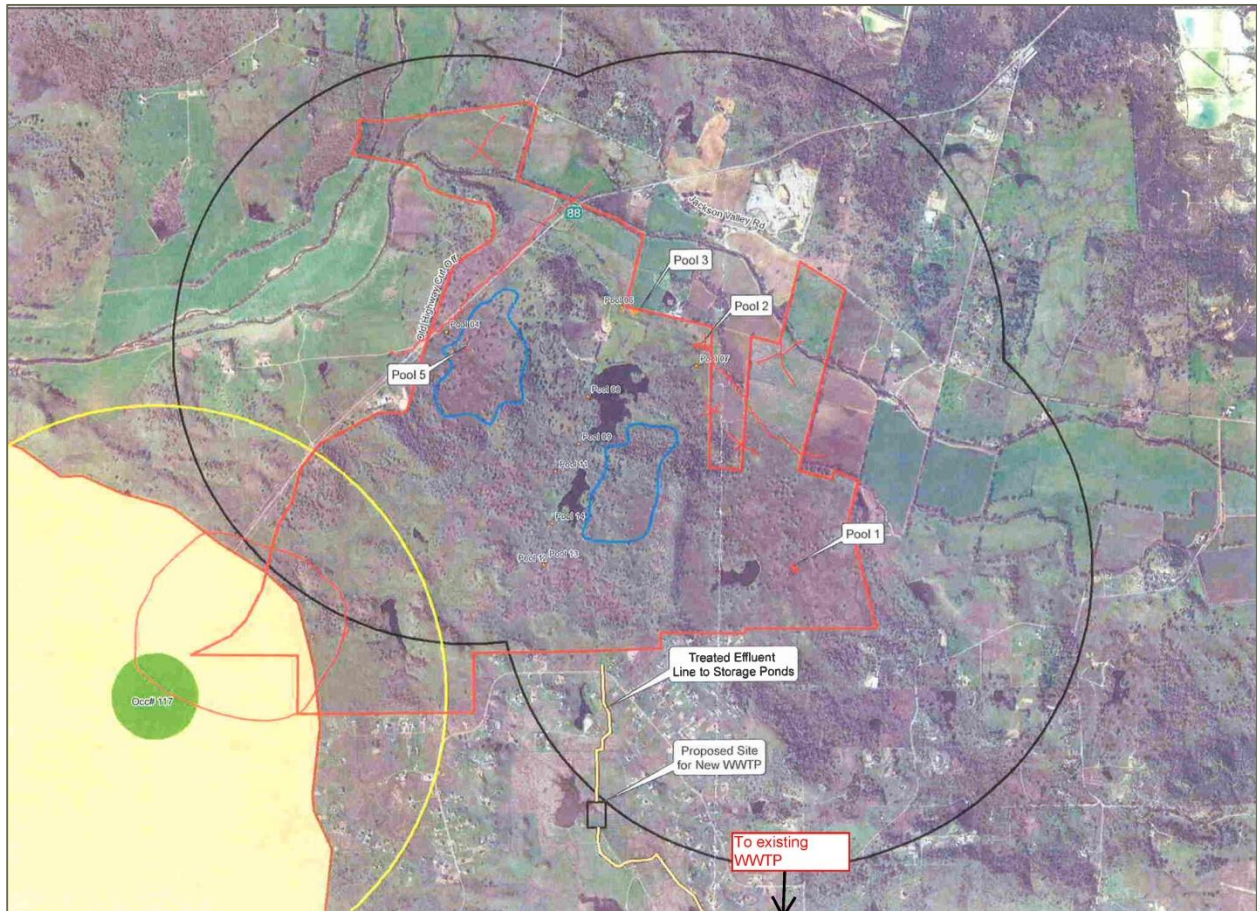
Scope of Work

Task 1. Treatment Plant Upgrade Assessment

The Lake Camanche WWTP would require upgrades to increase its capacity sufficiently to provide service to all residences in Lake Camanche Village. Buildout at Lake Camanche Village is anticipated to produce 281,000 gpd. Upgrades should, at minimum, include an increase to this capacity.

In addition to evaluating upgrades to the existing WWTP, the feasibility of constructing a new WWTP should be evaluated. A preliminary site for a new WWTP has been identified, approximately 1.5 miles northwest of the existing WWTP, as shown in **Figure 3**.

Figure 3: Proposed Site for New WWTP



Task 2. Demand Assessment

Task 2 would identify potential demand for recycled water that could be produced by the upgraded Lake Camanche WWTP.

Task 3. Project Alternatives

Upon identification of potential recycled water customers and demands, project alternatives will be developed to maximize recycled water reuse. Potential project components could include pipelines, storage facilities, and pump stations.

Task 4. Alternatives Assessment

Once project alternatives have been identified, this task will assess the feasibility of each alternative. Evaluation criteria could include, but are not limited to, cost, permitting, complexity/ease of implementation, confidence that demand could be served, compliance with relevant regulations and permits, potential for outside funding, and other considerations.

Based on this assessment, a preferred alternative will be selected. This preferred alternative will be refined enough to support decision-making, funding applications, and coordination on preliminary permitting.

Budget

Based on similar efforts, the Feasibility Study is anticipated to cost approximately \$150,000 to complete.

References

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