

4

SYSTEM SUPPLIES

4.1 WATER SOURCES

Urban Water Management Planning Act Requirement:

10631 (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).

Triunfo Sanitation District/Oak Park Water Service (District) obtains all of its potable water supplies from the Calleguas Municipal Water District (CMWD). In addition to distributing purchased water through CMWD, the District also has an extensive recycled water system. The two of these systems together delivered 3,137 AFY of water to a population of over 12,000 in 2010. Due to the slow rising population and the per capita demand reduction required by SBx7-7, total water demand for the District by projection is expected to be similar in 2030 to total demand recorded for 2010, as illustrated in Table 3.2.9.

The total projected supplies available to the District through CMWD are shown below in Table 4.1.1. The supply sources are illustrated in Figure 4.1.1.

Water Supply Sources	2010	2015	2020	2025	2030
Calleguas Municipal Water District	2,557	3,100	3,100	3,100	3,100
Supplier-Produced Groundwater ²	0	0	0	0	0
Supplier-Produced Surface Water	0	0	0	0	0
Transfers In	0	0	0	0	0
Exchanges In	0	0	0	0	0
Recycled Water	786	580	587	593	600
Desalinated Water	0	0	0	0	0
Total	3,343	3,680	3,687	3,693	3,700

Units: acre-feet per year

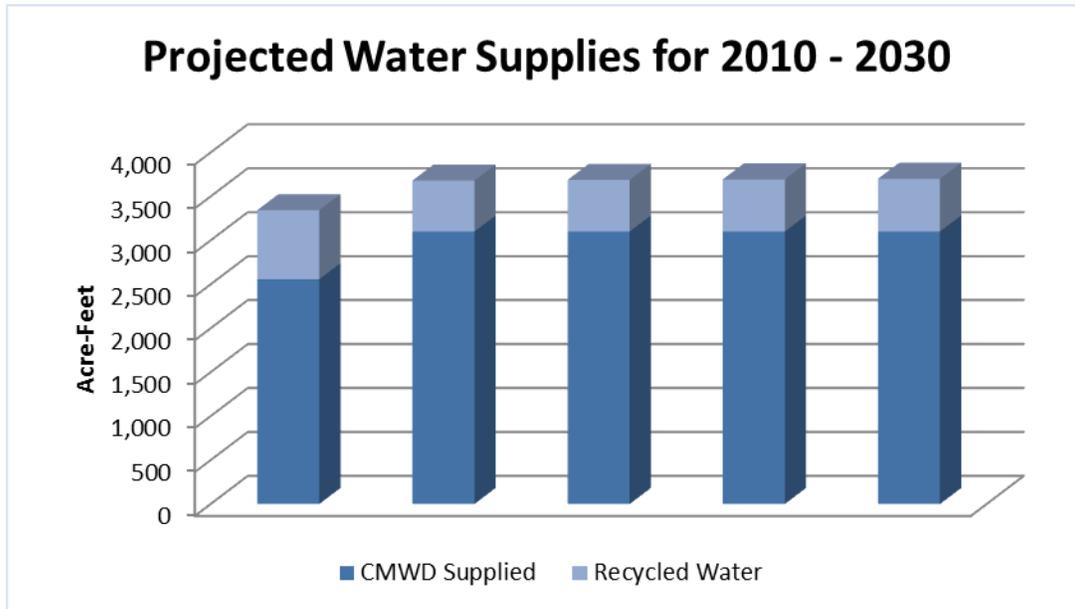


Figure 4.1.1: Projected Water Supplies for TSD through 2030

Wholesale Water Supply

Water is purchased through the CMWD. CMWD obtains its water from a number of sources including local groundwater supplies and recycled water. However, the majority of water supplied to CMWD is done so through the Metropolitan Water District of Southern California (MWD) as part of the State Water Project (SWP). The SWP is a series of reservoirs, aqueducts, and pumping facilities that convey water from Northern to Southern California. The water for use within the District is collected and delivered to MWD via the SWP, subsequently treated at the MWD Joseph Jensen Treatment Facility, and then delivered through pipelines and pumping stations to CMWD.

CMWD has been provided with the following water supply numbers from the District. In return, CMWD has confirmed in the CMWD 2010 UWMP that this supply will be available.

Wholesale Sources	Contracted Volume	2015	2020	2025	2030
Calleguas Municipal Water District	No	3,100	3,100	3,100	3,100

Units: acre-feet per year

Recycled Water Supply

The Triunfo Sanitation District Recycled Water system will be discussed in detail in Section 4.5.

4.2 GROUNDWATER

Urban Water Management Planning Act Requirement:

10631 (b)(1) If groundwater is identified as an existing or planned course of water available to the supplier provide...a copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

10631 (b)(2) If groundwater is identified as an existing or planned course of water available to the supplier provide...a description of any groundwater basin or basins from which the urban water supplier pumps groundwater.

10631 (b)(2) For those basins for which a court or the board has adjudicated the rights to pump groundwater, provide a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree.

10631 (b)(2) For basins that have not been adjudicated, (provide) information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

10631 (b)(3) (Provide a) detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

10631 (b)(4) (Provide a) detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

Groundwater is not a source of potable water to the Triunfo Sanitation District, and therefore this section of the UWMP is not applicable.

Table 4.2.1 illustrates the amount of groundwater pumped by the Triunfo Sanitation District in the last five years.

Table 4.2.1						
Groundwater — Volume Pumped						
Basin name(s)	Metered or Unmetered¹	2006	2007	2008	2009	2010
N/A	N/A	0	0	0	0	0
Total groundwater pumped		0	0	0	0	0
Groundwater as a percent of total water supply		0%	0%	0%	0%	0%

Units: acre-feet per year

4.3 TRANSFER OPPORTUNITIES

Urban Water Management Planning Act Requirement:

10631 (d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

There are currently no short-term or long-term transfer opportunities available to the Triunfo Sanitation District. This is illustrated below in Table 4.3.1.

Table 4.3.1			
Transfer and Exchange Opportunities			
Transfer Agency	Transfer or Exchange	Short Term or Long Term	Proposed Volume
Not Applicable	0	0	0
Total	0	0	0

Units: acre-feet per year

4.4 DESALINATED WATER OPPORTUNITIES

Urban Water Management Planning Act Requirement:

10631 (i) Describe the opportunities for development of desalinated water, including but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

The District is currently not exploring the possibility of using desalinated water as a water source independently. However, both CMWD and MWD are currently exploring the potential for use and distribution of desalinated water. As an end user of water supplied through both CMWD and MWD, the District is likely to receive water as a result of this effort in discovering the opportunity for desalination as part of the CMWD and MWD water supply. Therefore, a brief description of efforts in water desalination are discussed.

CMWD has initiated the salinity management pipeline (SMP) project, which is intended to be an integral part of future brackish water desalination projects. The SMP will collect concentrate from demineralization of brackish groundwater, potable water, and high quality recycled water and distribute it for beneficial reuse or discharge it into the ocean. The SMP is currently under construction and is designed to receive and dispose of salt concentrate from Desalter plants, currently in the planning phase. It is estimated that the SMP could ultimately remove 42,300 tons per year of salt from the watershed.

In 2001, the MWD created the Seawater Desalination Project (SDP) to explore the potential for using seawater as a long term water supply. The SDP provides incentives for its member agencies to develop water through desalination; up to \$250 per AF for all produced supplies. Currently, four desalination projects are receiving funding through MWD's SDP program. Each program has been vital in discovering and addressing both the technical and legal challenges associated with constructing a desalination plant. As of 2011, MWD reports that the Long Beach, South Orange Coastal, and West Basin Water Desalination Projects are currently in the pilot study process, while the Carlsbad Seawater Desalination Project is in the permitting phase. Table 4.4.1 shows the projected supplies provided by these four water desalination plants. In the coming years, these projects will help to determine the feasibility of using desalinated water for distribution through the District, either by establishing a water desalinating plant or through purchase of desalinated water through MWD or another source.

Table 4.4.1
Current Desalination Projected Capacities

Project	Member Agency	Projected Capacity (AFY)
Long Beach Seawater Desalination Project	Long Beach Water Department	10,000
South Orange Costal Ocean Desalination Project	Municipal Water District of Orange County	16,000-28,000
Carlsbad Seawater Desalination Project	San Diego County Water Authority	56,000
West Basin Seawater Desalination Project	West Basin Municipal Water District	20,000
Total		102,000-114,000

MWD's current goal is to supply 125,000 AFY of water through seawater desalination by 2025.

4.5 RECYCLED WATER OPPORTUNITIES

Urban Water Management Planning Act Requirement:

10633 Provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.

The District is committed to potable water conservation through the treatment and distribution of recycled water for non-potable uses. This effectively decreases the total water that must be purchased through CMWD, and is a significant part in the statewide effort to conserve and manage potable water resources.

The District entered into a Joint Powers Authority with Las Virgenes Municipal Water District (LVMWD) in 1964 to treat wastewater at the Tapia Water Reclamation facility, and recycling from the facility began in 1972. Since then, CMWD has joined the recycled water effort with LVMWD and TSD by subsidizing the expense of pipe infrastructure for the OPWS area to allow the area to utilize recycled water. Together, the three Districts are committed to maximizing the use of recycled water to conserve potable water resources through the treatment of wastewater and subsequent distribution as recycled water. Since 1972, the recycled water system of the Joint Powers Authority has evolved to distribute nearly 7,600 AFY of water for non-potable use.

The current infrastructure consists of 4 tanks, 5 pumping stations, 3 reservoirs, and 66 miles of pipeline. Each pumping station has three pumps, with an individual pump capacity anywhere between 800 and 6,200 GPM. Due to the constant fluctuation in daily demand, reservoirs storing approximately 16 million gallons are filled with recycled water to help meet peak flows when the quantity from the Tapia Water Reclamation Facility (TWRP) is not sufficient over the entire Las Virgenes and Triunfo use area. In the event that these reservoirs run dry, the system can also be supplemented with potable water to ensure that irrigation demands are met.

Recycled water, used for irrigation purposes, is treated (as described below) and then distributed or disposed of as necessary. The recycled water system is designed to serve irrigation water for customers including golf courses, homeowner's association grounds, and public landscapes such as parks, schools, and highway medians.

Urban Water Management Planning Act Requirement:

10633 (a) (Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

Wastewater from the District is collected by the District through the sewer system described in Chapter 2. Water is sent to TWRP where it is treated. TWRP was constructed as part of the two District Joint Powers Authority described above, and treats wastewater for multiple service areas. The total capacity of TWRP is currently 16 MGD, all of which receives tertiary treatment and is suitable for recycled water use. However, TWRP has undergone modifications which are estimated to reduce its total capacity to 12 MGD. These modifications, completed in 2010, improve the water treatment process to meet new regulations on the content of ammonia (set at 2.3 mg/L) and nitrate plus nitrite (set at 8 mg/L) in recycled water.

When wastewater enters TWRP, macroscopic materials are removed first. Large materials (e.g., rags and paper) are removed by passing the waste stream through a vertical slatted screen bar. Finer materials (e.g., eggshells and coffee grounds) are removed in a grit chamber. The flow is then slowed down and air is injected to keep small, organic particles suspended while allowing heavier, inert materials to fall to the bottom. These materials are removed from the wastewater and sent to landfill. At this point, the wastewater is 99% water and 1% solids.

Following the initial treatment, the wastewater goes through primary treatment, which takes place in the primary sedimentation tanks. Most of the solids that remain suspended in the wastewater are allowed to settle to the bottom of the tank. At the same time, oil and grease float to the surface and are removed by skimming the surface. Waste collected from this portion

of the process is sent to the Rancho Las Virgenes Composting Facility.

The water is then sent to secondary treatment. This process cleans the water through a biological process, utilizing beneficial microorganisms. These microorganisms remove contaminants as they feed, grow, and multiply. The process is accelerated by holding the water in an environment optimized for the microorganisms to thrive. This is done monitoring oxygen and feed contents in the water through the organic content of the water and injecting air into the tanks.

The microorganisms are then allowed to settle out and are returned to the secondary treatment aeration tanks, while the treated water moves to its final, tertiary treatment stage. Chemicals are added to the water to allow small particles to coagulate so they can be removed by filters. The water is disinfected with chlorine. After four hours, the chlorine is neutralized, and the final product is safe and ready to be distributed as recycled water for non-potable use.

Units: acre feet per year

Urban Water Management Planning Act Requirement:
 10633 (b) (Describe) the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

Currently, 100% of the wastewater collected by the District and sent to TWRP is treated to recycled water standards, and available for use if necessary. However, the water that is not needed for recycled water use is either stored within the reservoirs, or disposed of. In 2010, the TWRP reported an average flow from OPWS of 2.7 MGD, or 3,024 AF. The total projected wastewater from OPWS for the next 20 years is shown below in Table 4.5.1.

Type of Wastewater	2005	2010	2015	2020	2025	2030
Wastewater collected & treated in service area	3,020	3,024	3,055	3,090	3,126	3,162
Volume that meets recycled water standard	3,020	3,024	3,055	3,090	3,126	3,162

Units: acre feet per year

Water that is not sold for recycled water purposes must be discharged. Methods and projected quantities of disposal are summarized below in Table 4.5.2. The numbers provided are based on the average daily flows of wastewater treated at the TWRP of 12 MGD and the average daily recycled water demands on the system (*all* recycled water demand from TWRP), as reported in the 2007 Recycled Water Master Plan. The amount discharged was equal to the average daily flow of 12 MGD, as provided by the TWRP, minus the projected recycled water use of 6.5 MGD for the whole facility.

Method of Disposal	Treatment Level	2010	2015	2020	2025	2030
Discharge to Malibu Creek or LA River Basin	Tertiary	6,161	6,161	6,161	6,161	6,161
Total		6,161	6,161	6,161	6,161	6,161

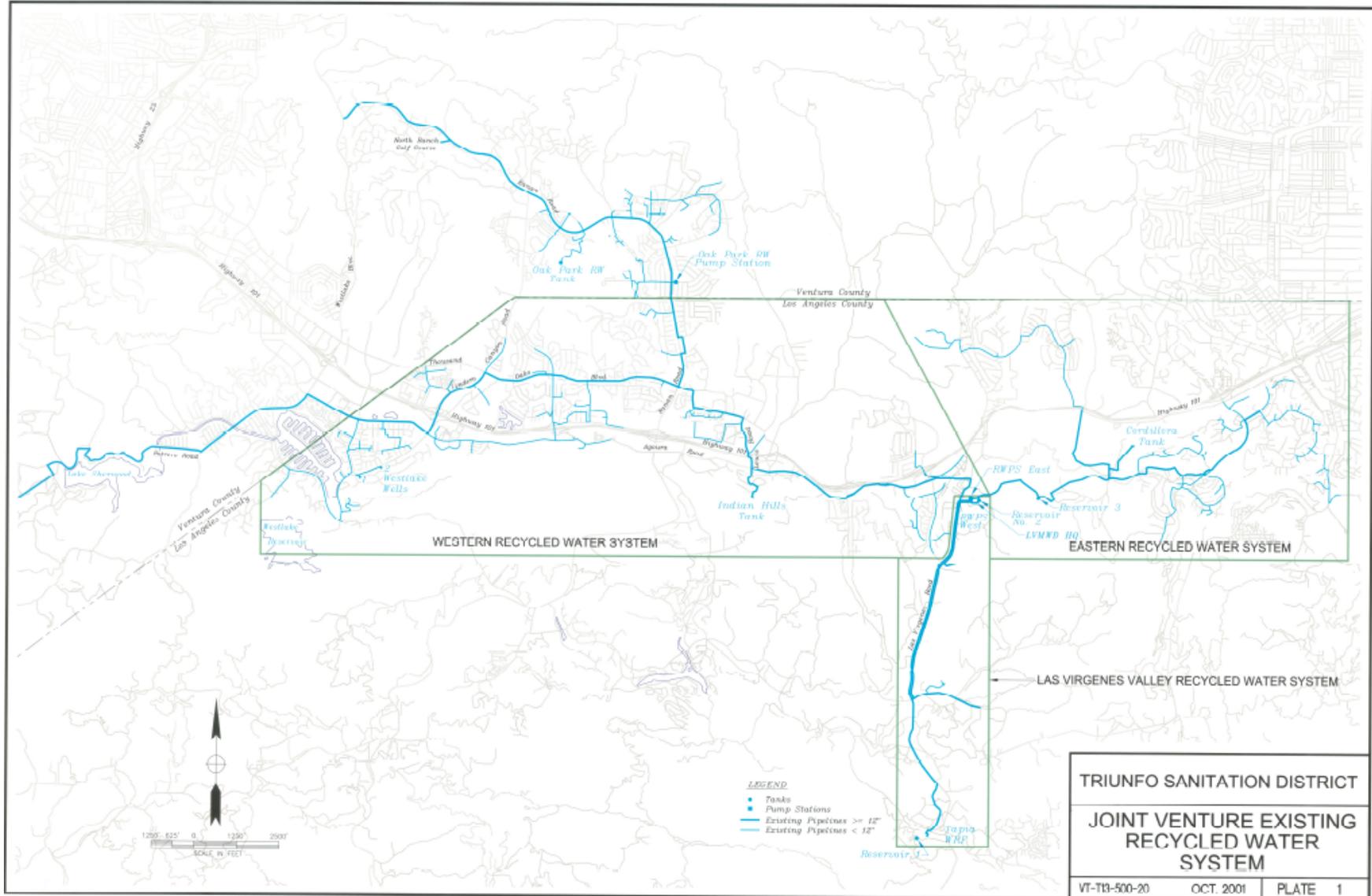
Units: acre feet per year

Urban Water Management Planning Act Requirement:
10633 (c) (Describe) the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use

All reclaimed water use in the OPWS area is subject to supply agreements through the two Districts' Joint Powers Authority (LVMWD and TSD). Specifically, TSD and LVMWD supply the reclaimed water from the TWRP for distribution by CMWD to OPWS. TWRP is the single source of reclaimed water to the OPWS system. TSD offers recycled water discounting in a two-tier incentive system to encourage recycled water use when possible.

Under the Joint Powers Authority agreement, the District conveys reclaimed water at tertiary treatment quality levels. Current data suggests that the District uses about 0.5 MGD (560 AFY) in its service area each day. Reclaimed water is largely applied as landscape irrigation. A map showing the recycled water distribution system for the District is shown in Figure. 4.5.1 on the following page. Water purchased has historically been used to irrigate golf courses, school grounds, highway medians, parks and homeowner association grounds. The use of reclaimed water for irrigation reduced the need for potable water in the District by 35% (including Lake Sherwood).

Figure 4.5.1: TSD Joint Venture Recycled Water System



Urban Water Management Planning Act Requirement:

10633 (d) (Describe and quantify) the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

Currently, the availability of recycled water supply is limited by peak/off-peak infrastructure. In other words, the amount of water available for treatment and use is seasonal due to significantly less irrigation demand during the winter months as opposed to the summer months. During the summer months, wastewater flows are unable to meet peak recycled water demands. Due to infrastructure and funding issues, recycled water produced during the winter months cannot be stored for the summer months. Therefore, the peak demand and peak supply occur at different times and peak supply cannot be offset by stored recycled water from the peak demand, and recycled water must be supplemented with potable water during summer months to meet irrigation needs. The recycled water system is also supplemented with approximately 400 acre-feet per year of groundwater, reducing the amount of potable water needed for this purpose.

The 2007 Recycled Water Master Plan identifies few improvements that can be made to the District's service area to increase the use of recycled water as a result of the peak/off peak infrastructure described above. Instead, the report focuses mainly on other water service areas also served by TWRF.

The potential users of recycled water are identified in Table 4.5.3. These are based on an estimate that half of the water supplied for landscape irrigation use in 2010 was recycled water and the other half was potable. Based on this, an additional 580 AFY of recycled water could potentially be used; however this use is not feasible, as the infrastructure is limited to supply recycled water during peak demand periods to both LVMWD and TSD/OPWS.

Table 4.5.3 Recycled Water — Potential Future Use						
User type	Description	Feasibility	2015	2020	2025	2030
Agricultural irrigation						
Landscape irrigation	Recycled water used for golf course, park, street median and homeowner association landscape irrigation	No	145	145	145	145
Commercial irrigation³						
Golf course irrigation						
Wildlife habitat						
Wetlands						
Industrial reuse						
Groundwater recharge						
Seawater barrier						
Geothermal/Energy						
Indirect potable reuse						
Total		No	145	145	145	145

Units: acre-feet per year

Urban Water Management Planning Act Requirement:

10633 (e) (Describe) the projected use of recycled water within the supplier’s service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

As can be seen in Table 4.5.4, the District’s 2005 UWMP overestimated the total amount of water supplied within the service area. This may be the result of interpolation based on data leading up to 2004, in which significant improvements were made to the recycled water distribution system. However, as identified in the 2007 Recycled Water Master Plan, there is little improvement to be made in terms of diversifying the supply of recycled water to customers within the District’s area.

Use type	2010 Actual Use	2005 Projection for 2010
Agricultural irrigation	0	0
Landscape irrigation	580	850
Commercial irrigation	0	0
Golf course irrigation	0	0
Wildlife habitat	0	0
Wetlands	0	0
Industrial reuse	0	0
Groundwater recharge	0	0
Seawater barrier	0	0
Geothermal/Energy	0	0
Indirect potable reuse	0	0
Total	580	850

Units: acre-feet per year

Urban Water Management Planning Act Requirement:

10633 (f) (Describe the) actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

TSD, LVMWD, and CMWD all encourage recycled water use among their customers through financial incentives and assisting with the installation and adoption of recycled water for landscape users. For TSD, recycled water is available at a 10% discount to customers who use water, allowing financial savings while encouraging water conservation. In addition, the District provides technical support to landscape users interested in switching to recycled water. This encourages users to retrofit previous potable water systems with recycled water systems while educating them regarding the requirements and regulations of proper recycled water use and maintenance.

Quantification of the results of the potential impact of the incentives is estimated below in Table 4.5.5. The numbers reported are based on the estimate that recycled water use is not expected to increase within the District, as supplies are limited during peak demand periods. Due to the sufficiency and extensive use of the current recycled water systems, as well as the limited potential for additional recycled water customers, methods to encourage facilities to switch to

recycled water are limited. The quantities reported in Table 4.5.5 illustrate the predictions that the anticipated use of recycled water is not expected to increase as new facilities and landscapes are not expected to be constructed in the service area.

Table 4.5.5					
Methods to Encourage Recycled Water Use					
Actions	Projected Results				
	2010	2015	2020	2025	2030
Financial Incentives	0	0	0	0	0
Total	0	0	0	0	0

Units: acre-feet per year

In addition to the TSD incentives, MWD also has an extensive incentive program for encouraging the use of recycled water among its member agencies. Please refer to the Metropolitan Water District of Southern California 2010 UWMP for more information.

Urban Water Management Planning Act Requirement:

10633 (g) (Provide a) plan for optimizing the use of recycled water in the supplier’s service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

The TSD/LVMWD recycled water system was implemented in 1972. Since then, the system has become sophisticated and efficient in terms of the treatment, delivery, and disposal of recycled water. The District includes in its annual budget funds specifically for maintaining, repairing, and expanding the recycled water system. Funds for this are provided solely through the revenue generated by recycled water sales. Projects currently include renovating recycled water pump stations, expanding wastewater collection, and maintaining and updating the TWRF. These projects are separately funded through CMWD, TSD, and LVMWD.

4.6 FUTURE WATER PROJECTS

Urban Water Management Planning Act Requirement:

10631 (h) (Describe) all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635.

Due to the fact that the District does not pump its own water, and instead purchases all water through the CMWD, there are currently no capital projects in progress or planned to increase the quantity of water supply to the area. In addition, the slow growth of the population, combined with the water conservation efforts being implemented reduces the total demand of water from the system. The projected demands on the supply system customers within OPWS were discussed in Chapter 3. This is summarized below in Table 4.6.1.

Project Name	Start & End Date	Potential Project Constraints	Normal -year supply	Single-dry year supply	Multiple -dry year first year supply³	Multiple -dry year second year supply³	Multiple -dry year third year supply³
N/A	N/A	N/A	0	0	0	0	0
Total		N/A	0	0	0	0	0

Units: acre-feet per year