3 SYSTEM DEMANDS

3.1 WATER CONSERVATION BILL OF 2009 BASELINES AND TARGETS

Urban Water Management Planning Act Requirement:

10608.20(e) An urban retail water supplier shall include in its urban water management plan … due in 2010 the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

In order to improve the Sacramento-San Joaquin Delta, in 2008 Governor Schwarzenegger directed State water agencies to develop a plan to achieve a twenty percent per capita water use reduction by the year 2020. Senate Bill x7-7, passed in November 2009, provides the legislative framework to implement the conservation goals, and requires retail water suppliers to detail their strategy for achieving the reduction requirement in their 2010 Urban Water Management Plan Updates. The Urban Water Management Planning Act and SBx7-7 can be found in Appendices C and D, respectively.

Explicit methodologies were developed by the California Department of Water Resources (DWR) to assist retail water suppliers in complying with the Water Conservation Act of 2009, and they are detailed in the technical document, "Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use." The District utilized the DWR methods when determining its baseline, interim, and water use target values, the steps of which are described in detail in the following sections.

The methodologies laid out by DWR instruct urban water suppliers to determine their baseline and target water use values through performing four main steps, which are as follows:

- Step 1: Determine Base Daily Per Capita Water Use
- Step 2: Determine Urban Water Use Target
- Step 3: Compare Urban Water Use Target to the 5-year Baseline (verification of 95% minimum reduction requirement)

- Step 4: Determine interim Urban Water Use Target

Water suppliers are given the option of determining their 20x2020 target values either individually, or through a regional alliance. The Triunfo Sanitation District/Oak Park Water Service (District) elected not to join a regional alliance due to its uniquely large residential sector and has determined its baseline and target values individually.

3.1.1 Step 1: Determine Base Daily Per Capita Water Use

Baseline daily per capita water use is defined as an urban water supplier's estimate of its average gross water use, reported in gallons per capita per day (GPCD) and calculated over a continuous base period.

Step 1A – 1C: Determine Supplier 10- to 15-year, and 5-year Base Periods

Urban retail water suppliers are required to choose a continuous, 10-year baseline period ending no earlier than December 31, 2004, and no later than December 31, 2010 when determining Base Daily Per Capita Water Use. The option to extend the baseline to a 15-year period is given to water suppliers if recycled water accounts for at least 10 percent of their 2008 retail water deliveries. The District used over 25% recycled water in the specified qualifying year of 2008 and qualified for a 15-year period to establish its baseline. However, the 10-year baseline period beginning July 1st, 1998 and ending June 30th, 2008 was chosen as representative of OPWS's current build out demand (yielding a higher baseline daily per capita water use).

The 5-year baseline period is used to determine the retail water supplier's minimum water use reduction, and the period must end no earlier than December 31st, 2007 and no later than December 31st, 2010. July 1st, 2003 through June 30th, 2008 was chosen as the 5-year baseline period for the District. Table 3.1.1 summarizes the District's baseline period selections.

Table 3.1.1
Base Period Ranges

Base	Parameter	Value	Units
10- to 15-year base period	2008 total water deliveries	3,145	*acre-ft*
	2008 total volume of delivered recycled water	828	*acre-ft*
	2008 recycled water as a percent of total deliveries	26.33%	percent
	Number of years in base period	10	years
	Fiscal Year beginning base period range	1999	
	Fiscal Year ending base period range	2008	
5-year base period	Number of years in base period	5	years
	Fiscal Year beginning base period range	2004	
	Fiscal Year ending base period range	2008	

Units: acre-feet per year

Step 1D – 1E: Estimate Service Area Population

The District's service area includes the community of Oak Park, which is in an unincorporated area of Ventura County. Therefore, the population estimates obtained from Ventura County were used to estimate the service area's total population for the baseline years.

Step 1F: Calculate Gross Water Use

Wholesale water from the Calleguas Municipal Water District is the sole source of potable water supply for the District's service area. Gross water use was estimated as the total volume purchased for each fiscal year in the baseline period.

Step 1G – 1I: Determine Annual and Base Daily Per Capita Water Use

Annual daily per capita water use for the District was estimated by dividing the gross water use by the service area's total population for each year of the baseline period. The average of these values over the 10-year baseline was then determined, giving the Base Daily Per Capita Water use value for the District, **233** GPCD.

Table 3.1.2 summarizes the data used to determine the Base Daily Per Capita Water Use value.

Table 3.1.2 Base Daily Per Capita Water Use — 10-Year Range				
Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Fiscal Year Ending			
Year 1	1999	12,538	2.80	223
Year 2	2000	11,925	2.91	244
Year 3	2001	12,057	2.76	229
Year 4	2002	12,199	2.90	238
Year 5	2003	12,199	2.86	234
Year 6	2004	12,199	3.00	246
Year 7	2005	12,201	2.78	228
Year 8	2006	12,201	2.73	224
Year 9	2007	12,201	2.86	235
Year 10	2008	12,201	2.81	230
Base Daily Per Capita Water Use (Average)				233

3.1.2 Determine Urban Water Use Target

SBx7-7 provides the retail water supplier the choice of four methods for determining the urban water use target value. The four methods are:

- Method 1: 80% of Base Daily Per Capita Water Use Value
- Method 2: Performance Standards
- Method 3: 95% of the Hydrologic Region 2020 Target Value
- Method 4: Water Savings (developed by DWR)

Method 1 was chosen by the District. The other three methods imposed reduction targets greater than the 20 percent required by Method 1 and were therefore dismissed, in order to prevent placing undue burden on the District. Thus, the District's 2020 Urban Water Use Target is **186 GPCD**.

3.1.3 Confirm Urban Water Use Target

SBx7-7 sets a minimum reduction requirement the water supplier's urban water use target must meet or exceed. The minimum reduction is defined as 95 percent of the 5-year baseline period's Base Daily Per Capita Water Use Value. Table 3.1.3 provides a summary of the 5-year baseline calculations.

Table 3.1.3
Base Daily Per Capita Water Use — 5-Year Range

Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Fiscal Year Ending			
Year 1	2004	12,199	3.00	246
Year 2	2005	12,201	2.78	228
Year 3	2006	12,201	2.73	224
Year 4	2007	12,201	2.86	235
Year 5	2008	12,201	2.81	230
Base Daily Per Capita Water Use (Average)				232

The urban water use target value of 186 GPCD exceeds the minimum reduction requirement of **220 GPCD**, and it is therefore confirmed as OPWS's Urban Water Use Target Value.

3.1.4 Determine Interim Urban Water Use Target

The interim urban water use target is defined as the water use goal the water supplier is to achieve and report in the 2015 UWMP Update, and equals half of the target 2020 reduction. The interim urban water use target for the District is **210 GPCD**.

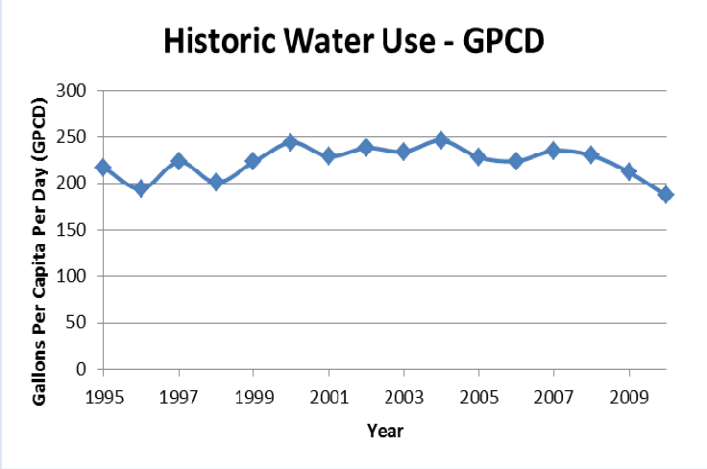
3.2 WATER DEMANDS

Urban Water Management Planning Act Requirement:

10608.20(e)(1)&(2) Quantify, to the extent records are available, past and current water use, and projected water use (over the same five-year increments described in subdivision (a)), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses: (A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; (I) Agricultural.

3.2.1 Historic Water Use

Figure 3.2.1 – Historic Water Use



The Triunfo Sanitation District/Oak Park Water Service System currently serves approximately 12,200 people within its service area. With the completion of its last major development in 2001 and close to 100% build out, the community does not anticipate significant additional growth or water demands in future years.

Usage of water per capita day has shown significant fluctuation during the last fifteen years, as shown in Table 3.2.1. Consumption has ranged from a low 187 GPCD in 2010 to a maximum of 246 GPCD in 2004. The average use per day during the period from 1995 through 2010 was 223 gallons per person.

Table 3.2.1
Historic Water Use

Year	Gross Water Use (MGY)	Population	Usage Per Capita Day (GPCD)
1995	1,105	13,943	217
1996	977	13,829	194
1997	1,005	12,358	223
1998	916	12,466	201
1999	1,021	12,538	223
2000	1,062	11,925	244
2001	1,008	12,057	229
2002	1,059	12,199	238
2003	1,044	12,199	234
2004	1,096	12,199	246
2005	1,013	12,201	228
2006	996	12,201	224
2007	1,046	12,201	235
2008	1,025	12,201	230
2009	944	12,201	212
2010	833	12,201	187

The District's past water use and number of customer connections for the 2005 calendar year is shown in Table 3.2.2, separated by water use sector. Data is in acre feet per year.

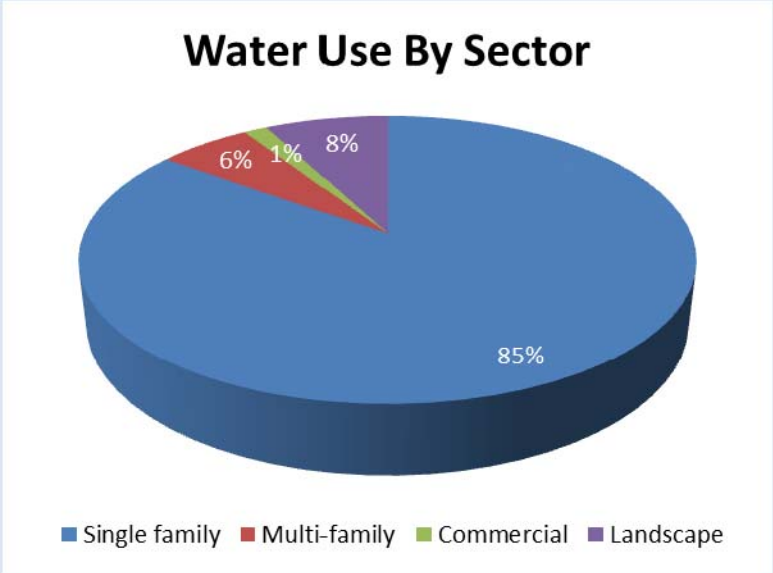
Table 3.2.2 Water Deliveries — Actual, 2005					
	2005				
	Metered		Not metered		Total
Water use sectors	# of Accounts	Volume	# of Accounts	Volume	Volume
Single family	4,346	2,346	0	0	2,346
Multi-family	112	130	0	0	130
Commercial/Institutional	42	41	0	0	41
Industrial	0	0	0	0	0
Landscape	108	253	0	0	253
Agriculture	0	0	0	0	0
Other	0	0	0	0	0
Total	4,608	2,770	0	0	2,770
Units: acre-feet per year					

3.2.2 Current and Projected Water Use by Sector

In 2010, OPWS used 2,331 acre-feet of potable water as measured by metered sales throughout OPWS. Water deliveries are broken down into the following sectors:

- Single Family Residential
- Multi-Family Residential
- Commercial & Industrial
- Government / Institutional
- Landscape

Figure 3.2.2 – Water Deliveries



Number of connections and water use are projected for the next 20 years, in five year increments, and are broken down by sector. The future estimations of water use and connections (by sector) are extrapolated based on the current (2010) values, anticipated population growth, and the Interim (2015) and Final (2020) Target Water Use Reduction Goals.

Residential Sector

The District began separating single- and multi-family connections and water usage statistics in 2005. Current and future water demand projections for single- and multi-family residential customers are shown in Tables 3.2.3 – 3.2.6.

Commercial and Industrial Sectors

Commercial users include markets, restaurants, stores, offices, gas stations and other businesses. The District, as stated in Chapter 2, does not have industrial users. Total water usage is shown in Table 3.2.3. Future water demand predictions, shown in Tables 3.2.4 – 3.2.6, are developed based on the current year's information.

Institutional / Governmental Sector

The District does not have governmental users as shown in Table 3.2.3. However, institutional users, such as schools, are included with Commercial users as shown in Table 3.2.3.

Landscape Sector

The District uses both potable and recycled water for the landscape sector. Potable water accounts for approximately fifty percent of the total landscape water deliveries, with the remainder consisting of recycled water. The current and projected landscape water demands are shown in Tables 3.2.3 – 3.2.6.

Agricultural Sector

The District does not provide water for agricultural uses.

Table 3.2.3
Water Deliveries — Actual, 2010

	2010				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	4,345	1,972	0	0	1,972
Multi-family	114	136	0	0	136
Commercial/Institutional	47	34	0	0	34
Industrial	0	0	0	0	0
Landscape	88	178	0	0	178
Agriculture	0	0	0	0	0
Other	2	11	0	0	11
Total	4,596	2,331	0	0	2,331

Units: acre-feet per year

Table 3.2.4
Water Deliveries — Projected, 2015

	2015				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	4,395	2,241	0	0	2,241
Multi-family	115	155	0	0	155
Commercial/Institutional	48	39	0	0	39
Industrial	0	0	0	0	0
Landscape	89	200	0	0	200
Agriculture	0	0	0	0	0
Other	2	12	0	0	12
Total	4,649	2,646	0	0	2,646

Units: acre-feet per year

Table 3.2.5
Water Deliveries — Projected, 2020

	2020				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	4,445	2,007	0	0	2,007
Multi-family	117	138	0	0	138
Commercial/Institutional	48	35	0	0	35
Industrial	0	0	0	0	0
Landscape	90	179	0	0	179
Agriculture	0	0	0	0	0
Other	2	11	0	0	11
Total	4,702	2,370	0	0	2,370

Units: acre-feet per year

Table 3.2.6
Water Deliveries — Projected 2025 and 2030

	2025		2030	
	metered		metered	
Water use sectors	# of accounts	Volume	# of accounts	Volume
Single family	4,497	2,030	4,548	2,054
Multi-family	118	140	119	142
Commercial/Institutional	49	35	49	35
Industrial	0	0	0	0
Landscape	91	181	92	183
Agriculture	0	0	0	0
Other	2	11	2	11
Total	4,757	2,398	4,810	2,425

Units: acre-feet per year

3.2.3. Sales to Outside Agencies

The District does not sell wholesale water to other agencies. Table 3.2.7 is provided to quantify that the District does not intend to sell water to other water agencies within the planning period.

Table 3.2.7
Sales to Other Water Agencies

Water Distributed	2005	2010	2015	2020	2025	2030
Not Applicable	0	0	0	0	0	0
Total	0	0	0	0	0	0

Units: acre-feet per year

3.2.4. Other Water Uses and Losses

System losses are shown in Table 3.2.8. In addition to system losses, the District also uses Recycled water, also shown in Table 3.2.8 and accounted for in the total water demands in Section 3.2.5.

Table 3.2.8
Additional Water Uses and Losses

Water Use	2005	2010	2015	2020	2025	2030
Saline barriers	N/A	N/A	N/A	N/A	N/A	N/A
Groundwater recharge	N/A	N/A	N/A	N/A	N/A	N/A
Conjunctive use	N/A	N/A	N/A	N/A	N/A	N/A
Raw water	N/A	N/A	N/A	N/A	N/A	N/A
Recycled water	786	580	587	593	600	607
System losses	175	226	257	230	233	235
Other (define)	N/A	N/A	N/A	N/A	N/A	N/A
Total	961	806	844	823	833	842

Units: acre-feet per year

3.2.5 Total Water Demands

The total past, current, and future water demands for the District are summarized in Table 3.2.9.

Table 3.2.9
Total Water Use

Water Use	2005	2010	2015	2020	2025	2030
Total water deliveries (Tables 3.2.2 to 3.2.6)	2,770	2,331	2,646	2,370	2,398	2,425
Sales to other water agencies (Table 3.2.7)	N/A	N/A	N/A	N/A	N/A	N/A
Additional water uses and losses (Table 3.2.8)	961	806	844	823	833	842
Total	3,731	3,137	3,490	3,193	3,231	3,267

Units: acre-feet per year

3.2.6 Lower Income Housing Projections

Urban Water Management Planning Act Requirement:

10631.1(a) The water use projections required by Section 10631 shall include projected water use for single-family and multi-family residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

The Housing Element of the Ventura County General Plan 2008 revision was utilized to determine the low-income projected water demands within the Triunfo Sanitation District/Oak Park Water Service's service area, specifically within the unincorporated community of Oak Park. The General Plan identifies the need for 409 dwelling units within the unincorporated area of Ventura County by the year 2014; however, the assumptions detailing the potential areas available for low-income housing development do not identify Oak Park as a potential development area, since the community is predominantly built-out. Table 3.2.10 illustrates the assumption that no low-income housing will be built in the community of Oak Park.

Table 3.2.10
Low-Income Projected Water Demands

Low Income Water Demands	2014	2015	2020	2025	2030
Single-family residential	0	0	0	0	0
Multi-family residential	0	0	0	0	0
Total	0	0	0	0	0

Units: acre-feet per year

3.3 WATER DEMAND PROJECTIONS

Urban Water Management Planning Act Requirement:

10631(k) Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for the inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

The Triunfo Sanitation District/Oak Park Water Service relies on wholesale water from the Calleguas Municipal Water District as the primary source of potable water. Table 3.3.1 is provided to quantify the District demand projections provided to the Calleguas Municipal Water District for incorporation into Calleguas' Urban Water Management Plan. As illustrated below, the previously projected demand was significantly higher than the projected demands incorporating the water use targets and conservation efforts, thus, resulting in a conservative analysis in Calleguas' Urban Water Management Plan, which indicated a reliable supply with the demands listed below.

Table 3.3.1
Retail Agency Demand Projections Provided to Wholesale Suppliers

Wholesaler	2010	2015	2020	2025	2030
Calleguas Municipal Water District	3,100	3,100	3,100	3,100	3,100
Total	3,100	3,100	3,100	3,100	3,100

Units: acre-feet per year

3.4 WATER USE REDUCTION PLAN

Urban Water Management Planning Act Requirement:

CWC §10608.29 Urban wholesale water suppliers shall include in the urban water management plans … an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part (10608.36). Urban retail water suppliers are to prepare a plan for implementing the Water Conservation bill of 2009 requirements and conduct a public meeting which includes consideration of economic impacts.

The Triunfo Sanitation District/Oak Park Water Service has implemented an economical, yet sound, water use reduction plan in order to meet the 20x2020 water use reduction requirements. Options to reduce water demand in the District include:

- Encouraging the use of recycled water for landscape and irrigation purposes.
- Increasing public awareness regarding water conservation requirements and efforts that can easily be implemented to conserve water through methods such as on site reviews with customers, water hotline, and rebate participation.
- Active involvement with the California Urban Water Conservation Council training programs and Best Management Practices progress.