

APPENDIX F

Compliance with the Water Conservation Act of 2009 (Senate Bill x7-7)
Technical Memorandum, March 21, 2011

RESOLUTION 2011-07

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE COASTSIDE COUNTY WATER DISTRICT AUTHORIZING THE APPROVAL OF A BASELINE DAILY PER CAPITA USE, AN URBAN WATER USE TARGET, AND AN INTERIM URBAN WATER USE TARGET

WHEREAS, the Water Conservation Act of 2009 (Senate Bill x7-7) was signed into law by Governor Arnold Schwarzenegger; and

WHEREAS, the Water Conservation Act of 2009 set a goal of achieving a 20 percent statewide reduction in urban per capita water use by the year 2020; and

WHEREAS, the District is an urban retail water supplier that directly provides potable water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable municipal water annually at retail for municipal purposes; and

WHEREAS, the Coastside County Water District ("District") is subject to the Urban Water Management Planning Act; codified at California Water Code § 10610 et seq. ("Act"); and

WHEREAS, the District shall conduct at least one public hearing per California Water Code § 10608.26 (a) to (1) allow community input regarding the District's implementation plan for compliance (2) consider the economic impacts of the District's implementation plan and (3) adopt a method pursuant to California Water Code § 10608.20 (b), for determining its urban water use target; and

WHEREAS, the District's consultant, West Yost Associates, has completed a technical memorandum dated March 21, 2011, and based on the analysis in that technical memorandum District staff has selected method three, which is ninety-five percent of the applicable state hydrologic region target, as set forth in the State's draft 20x2020 Water Conservation Plan (dated April 30, 2009) ("Method Three") for determining its urban water use target; and

WHEREAS, because the application of Method Three results in a per capita daily water use reduction of less than five percent and because the District's base daily per capita water use is above one hundred gallons per capita per day, the District will comply with the requirements of Water Code Section 10680.22 and therefore the District's per capita water use reduction will be no less than five percent of its base daily per capita water use; and

WHEREAS, the District has published notice of and provided an opportunity for a public hearing on this Resolution.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Coastside County Water District as follows:

A. The Board adopts Method Three for determining its urban water use target under the Water Conservation Act of 2009; and

B. The Board has determined that the five percent reduction of base daily per capita water use requirement of Water Code Section 10608.22 applies, and therefore adopts the following:

1. The Baseline Daily Per Capita Water Use for a ten year period is 128 gallons per capita per day.
2. The Interim (2015) Urban Water Use Target is 124 gallons per capita per day.
3. The Final (2020) Urban Water Use Target is 120 gallons per capita per day.

PASSED AND ADOPTED this 12th day of April 2011, by the following votes of the Coastside County Water District's Board of Directors:

AYES: Director Coverdell, Vice-President Donovan, Directors Larimer, Mickelsen, and President Feldman

NOES:

ABSENT:

ABSTAIN:

Robert C. Feldman

Robert C. Feldman, President
Board of Directors

Attest:



David R. Dickson, Secretary of the Board

TECHNICAL MEMORANDUM

DATE: March 21, 2011 Project No.: 464-02-11-01

TO: David Dickson, Coastside County Water District
Cathleen Brennan, Coastside County Water District

FROM: Gerry Nakano, R.C.E. #29524
Elizabeth Drayer, R.C.E. #46872

SUBJECT: Compliance with the Water Conservation Act of 2009 (Senate Bill x7-7)

BACKGROUND

In November 2009, Senate Bill x7-7 (SBx7-7), The Water Conservation Act of 2009, was signed into law by Governor Arnold Schwarzenegger as part of a comprehensive water legislation package. The Water Conservation Act addresses both urban and agricultural water conservation. The legislation sets a goal of achieving a 20 percent statewide reduction in urban per capita water use by the year 2020 (*i.e.*, “20 by 2020”), and directs urban retail water suppliers to establish an “interim” per capita water use target to be met by 2015 and a “final” per capita water use target to be met by 2020.

The legislation also extended the deadline for the submittal of 2010 Urban Water Management Plans (UWMPs) by urban retail water suppliers from December 31, 2010 to July 1, 2011 to allow for additional time to comply with the SBx7-7 requirements and to incorporate reporting requirements into the 2010 UWMPs. Similar legislation (SB 1478 passed on September 24, 2010) was also passed to extend the 2010 UWMP submittal deadline for urban wholesale water suppliers to permit coordination between urban wholesale water suppliers and urban retail water suppliers.

The Water Conservation Act of 2009 was incorporated into Division 6 of the California Water Code, commencing with Section 10608 of Part 2.55. The methodologies, water use targets, and reporting required by the Water Conservation Act of 2009 apply to urban retail water suppliers that “*directly provide potable municipal water to more than 3,000 end users or that supply more than 3,000 acre-feet of potable water annually at retail for municipal purposes.*”

The Coastside County Water District (District) currently serves approximately 6,500 connections¹ and provided approximately 2,300 acre-feet of potable water to customers in FY2009/10². Therefore, the District is required to comply with the requirements of SBx7-7.

¹ Source: Coastside County Water District 2005 Urban Water Management Plan.

² Source: Coastside County Water District total water production in FY 2009/10.

INTRODUCTION

This memorandum presents the Coastside County Water District's (District's) proposed compliance with SBx7-7. This memorandum includes the following information:

- District's water service area
- Assumptions for gross water use and service area population
- Calculation of base daily per capita water use
- Calculation of interim and final targets using the four target methods established by SBx7-7 and DWR
- Recommended interim and final per capita water use targets for the District
- Allowable adjustments to compliance daily per capita water use
- Provisions for future revision of base daily per capita water use and/or target method used
- Public hearing requirements
- Reporting requirements in the District's 2010 UWMP and subsequent UWMPs
- Consequences of non-compliance with SBx7-7
- References

Calculations of Base Daily Per Capita Water Use, and Interim and Final Per Capita Water Use Targets have been made based on the requirements specified in the SBx7-7 legislation and the California Department of Water Resources (DWR) "Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use" dated October 1, 2010 (referred to as the "DWR Methodologies" in this memorandum).

WATER SERVICE AREA

The District is a special district providing water to customers within its boundaries, which include the City of Half Moon Bay and several unincorporated communities in San Mateo County, including El Granada, Miramar and Princeton by the Sea. District jurisdictional boundaries are depicted in Figure 1.

GROSS WATER USE

Gross water use is the annual water supplied to the distribution system adjusted for recycled, wholesale, and agricultural deliveries and is defined in the Water Code as follows:

10608.12 (g) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

- (1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.*
- (2) The net volume of water that the urban retail water supplier places into long-term storage.*
- (3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.*
- (4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.*

The District's gross water use includes purchased water from the San Francisco Public Utilities Commission (SFPUC), infiltration well water from the Pilarcitos Well Field, local surface water from Denniston Creek and San Vicente Creeks, and groundwater from the Denniston Well Field. Gross water use from each of these sources is metered as follows:

- Flow from SFPUC's Upper Crystal Springs Reservoir is metered at the Cahill Ridge meter;
- Flow from SFPUC Pilarcitos Lake is metered below (south of) Stone Dam;
- Flows from the Pilarcitos infiltration wells are individually metered at each well;
- Flows from the Denniston groundwater wells are individually metered at each well; and
- Flow from Denniston Creek is metered at the District's Denniston Water Treatment Plant influent meter.

It should be noted that flows from the Upper Crystal Springs Reservoir, Pilarcitos Lake and Pilarcitos wells are also metered at the District's Nunes Water Treatment Plant influent meter as a check for the raw water source meters. The metering locations are shown on Figure 2.

DWR Methodology 1 (Gross Water Use) suggests that water volumes should be adjusted for meter errors and that gross water use calculations should be adjusted for changes in distribution system storage, indirect recycled water use and process water use. However, the District's gross water use has not been adjusted for meter errors as the District's meters are considered to be appropriately calibrated and any meter errors are considered to be negligible. The District has also not adjusted its gross water use for changes in distribution system storage as the volumes of water stored in the District's water storage reservoirs and tanks, although they vary from hour to hour based on diurnal demand patterns, are kept at consistent levels throughout the year. Also, no deductions have been taken for indirect recycled water use, water delivered for agricultural use or process water use as these deductions do not apply to the District. The District's gross water use, presented in the format recommended by the DWR Methodologies, is presented in Table 1.

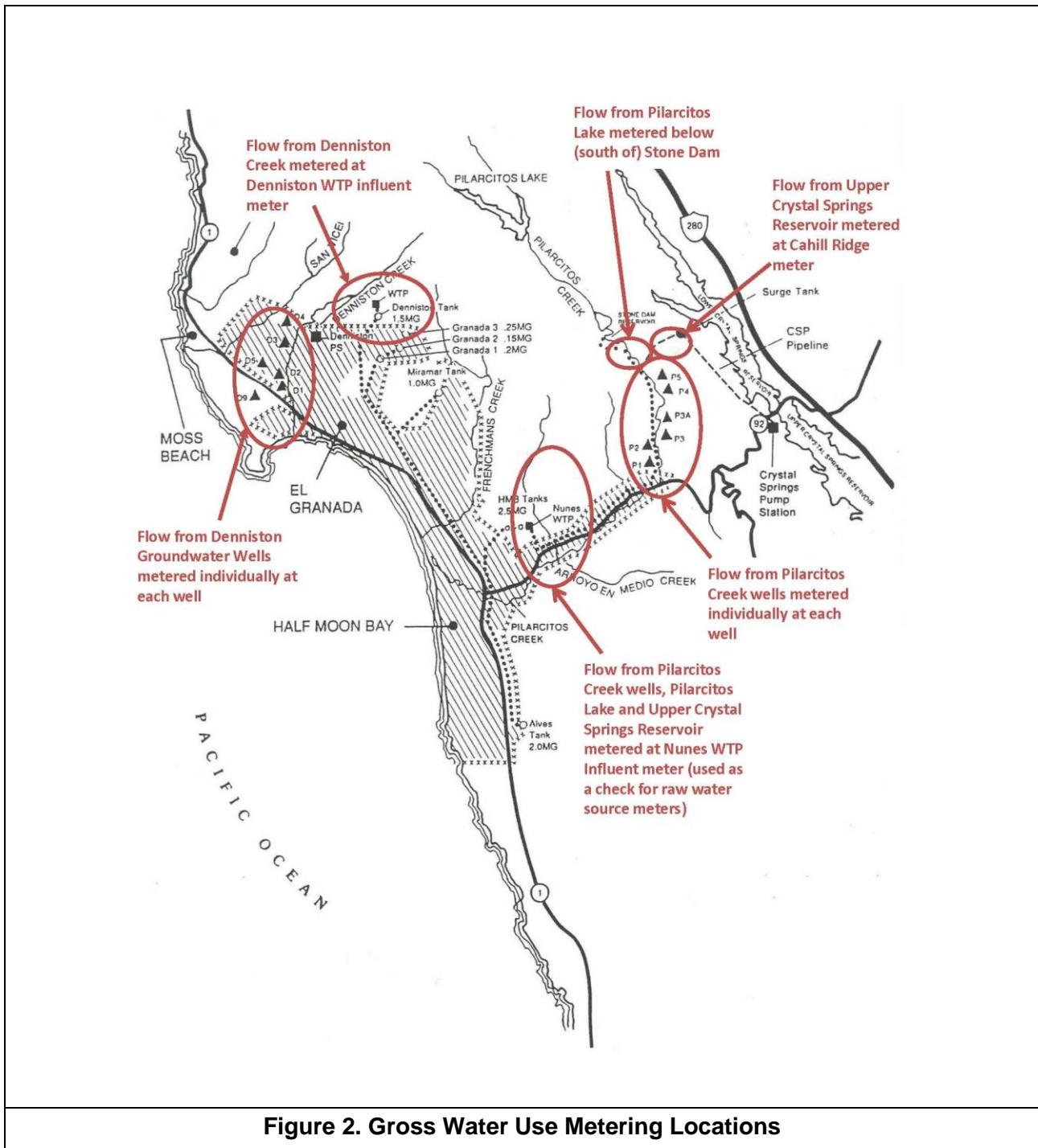


Figure 2. Gross Water Use Metering Locations

**Table 1. Urban Retail Water Supplier Gross Water Use Calculation
(DWR Methodologies Table 1)**

Utility Name: Coastside County Water District
 12-month period: July 1 to June 30
 Volume Units: Million Gallons

Item	Calculation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
		1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
1	Volume from Own Sources (raw data)	315	311	304	293	278	286	316	231	159	192
	Meter error adjustment (+/-)	-	-	-	-	-	-	-	-	-	-
	Subtotal: Corrected Volume from Own Sources	315	311	304	293	278	286	316	231	159	192
2	Volume from Imported Sources (raw data)	477	542	489	633	658	632	690	645	673	752
	Meter error adjustment (+/-)	0	0	0	0	0	0	0	0	0	0
	Subtotal: Corrected Volume from Imported Sources	477	542	489	633	658	632	690	645	673	752
3	Total Volume Into Distribution System = Item 1 + Item 2	792	854	793	926	937	918	1,006	876	831	944
4	Volume Exported to Other Utilities (raw data)	0	0	0	0	0	0	0	0	0	0
	Meter error adjustment (+/-)	0	0	0	0	0	0	0	0	0	0
	Subtotal: Corrected Volume Exported to Other Utilities	0	0	0	0	0	0	0	0	0	0
5	Change in Distribution System Storage (+/-)	0	0	0	0	0	0	0	0	0	0
6	Gross Water Use Before Indirect Recycled Water Use Deductions = Item 3 - Item 4 - Item 5	792	854	793	926	937	918	1,006	876	831	944
7	Indirect Recycled Water Use Deduction	0	0	0	0	0	0	0	0	0	0
8	Gross Water Use After Indirect Recycled Water Use Deductions = Item 6 - Item 7	792	854	793	926	937	918	1,006	876	831	944
9	Water Delivered for Agricultural Use (optional deduction)	0	0	0	0	0	0	0	0	0	0
10	Process Water Use (optional deduction)	-	-	-	-	-	-	-	-	-	-
11	Gross Water Use After Optional Deductions = Item 8 - Item 9 - Item 10	792	854	793	926	937	918	1,006	876	831	944

The District’s historical gross water use from FY1995/96 to FY2009/10 in acre-feet per year (AFY) is summarized in Table 2.

Table 2. Coastside County Water District Historical Gross Water Use	
Year	Gross Water Use (includes water purchased from SFPUC, and local surface water and groundwater), AFY
FY 1995/96	2,310
FY 1996/97	2,388
FY 1997/98	2,430
FY 1998/99	2,620
FY 1999/00	2,435
FY 2000/01	2,842
FY 2001/02	2,876
FY 2002/03	2,816
FY 2003/04	3,088
FY 2004/05	2,689
FY 2005/06	2,552
FY 2006/07	2,897
FY 2007/08	2,754
FY 2008/09	2,380 ^(a)
FY 2009/10	2,265 ^(a)

^(a) FY 2008/09 and FY2009/10 gross water use in the District was reduced due to a number of factors including drought conditions and economic conditions

SERVICE AREA POPULATION

Service area population is used to determine per capita water use and is defined in the Water Code as follows:

- (1) 10608.20 (f) When calculating per capita values for the purpose of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.*

Consistent with DWR Methodology 2 (Service Area Population), the District’s service area population has been estimated using data from the United States Census Bureau to the extent that it is available. 1990 Census data for the 94019 zip code was used to estimate the District’s 1990 service area population. 2000 Census data for three census tracts (Census tracts 6135.01, 6135.02 and 6137) was used to estimate the District’s 2000 population. Projections made by the Association of Bay Area Governments (ABAG) in 2009 for those same Census tracks were then used to estimate District’s population growth since 2000. The District also serves an approximately nine block area in Princeton (Census tract 6136); however, these are primarily non-residential land uses with no population associated with them. The District’s historical service area population from 1990 to 2010 is summarized in Table 3.

Table 3. Coastside County Water District Historical Service Area Population

Year	Estimated Service Area Population
1990	14,034 ^(a)
1991	14,524
1992	15,014
1993	15,504
1994	15,994
1995	16,484
1996	16,974
1997	17,464
1998	17,954
1999	18,444
2000	18,452 ^(b)
2001	18,668 ^(c)
2002	18,884 ^(c)
2003	19,100 ^(c)
2004	19,316 ^(c)
2005	19,617 ^(c)
2006	19,766 ^(c)
2007	19,915 ^(c)
2008	20,064 ^(c)
2009	20,213 ^(c)
2010	20,216 ^(c)

(a) Based on 1990 Census data for zip code 94019
 (b) Based on 2000 Census data for Census tracts 6135.014, 6135.02 and 6137
 (c) Population estimates for 2001 and beyond are based on ABAG 2009 population projections for Census tracts 6135.014, 6135.02 and 6137

BASE DAILY PER CAPITA WATER USE

The Base Daily Per Capita Water Use is the historical gross water use divided by the service area population and is defined in the Water Code as follows:

10608.12 (b) "Base daily per capita water use" means any of the following:

- (1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.
- (2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.
- (3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

Unless the urban retail water supplier's 5-year Base Daily Per Capita Water Use per Water Code Section 10608.12(b)(3) is 100 gallons per capita per day (gpcd) or less, Base Daily Per Capita Water Use must be calculated for both baseline periods. Calculation methods are described in DWR Methodology 3 (Base Daily Per Capita Water Use).

5-Year Base Daily Per Capita Water Use Per Water Code Section 10608.22

For purposes of Water Code Section 10608.22, the Base Daily Per Capita Water Use must be calculated using a continuous 5-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

Table 4 shows the calculation of the District's Base Daily Per Capita Water Use for the 5-year period ending June 30, 2008 (end of FY 2007/08). As shown, the District's 5-Year Base Daily Per Capita Water Use is 127 gpcd.

10- or 15-Year Base Daily Per Capita Water Use Per Water Code Section 10608.20

Per Water Code Section 10608.20, the District's Base Daily Per Capita Water Use is calculated using one of the following base periods:

- If recycled water made up less than 10 percent of 2008 retail water delivery, use a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.
- If recycled water made up 10 percent or more of 2008 retail water delivery, use a continuous 10- to 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

The District does not currently use recycled water within its service area. As such, the District must use a continuous 10-year period to determine their Base Daily Per Capita Water Use. Table 5 shows the calculation of the District's Base Daily Per Capita Water Use for the 10-year period ending June 30, 2007 (end of FY 2006/07). As shown, the District's 10-Year Base Daily Per Capita Water Use is 128 gpcd.

DETERMINATION OF INTERIM (2015) AND FINAL (2020) TARGETS

Overview of DWR Methods

The District must set an interim (2015) water use target and a final (2020) water use target using one of four methods defined by SBx7-7 and DWR. Three of these methods are defined in Water Code Section 10608.20(a)(1), with the fourth developed by DWR in early 2011. The 2020 water use target will be calculated using one of the following four methods:

- Method 1: 80 percent of the District's base daily per capita water use
- Method 2: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscaped area water use; and commercial, industrial, and institutional uses

**Table 4. Base Daily Per Capita Water Use Calculation for Section 10608.22
(DWR Methodologies Table 3)**

Utility Name: Coastside County Water District
 12-month Period: July 1 to June 30

(1)	(2)	(3)	(4)
Base Years	Service Area Population	Gross Water Use, gpd	Daily Per Capita Water Use (3) ÷ (2), gpcd
2003/04	19,316	2,756,192	143
2004/05	19,617	2,400,822	122
2005/06	19,766	2,277,863	115
2006/07	19,915	2,585,973	130
2007/08	20,064	2,458,548	123
Total of Column (4):			633
Divide Total by 5:			127

**Table 5. Base Daily Per Capita Water Use Calculation for Section 10608.20
(DWR Methodologies Table 4)**

Utility Name: Coastside County Water District
 12-month Period: July 1 to June 30

(1)	(2)	(3)	(4)
Base Years	Service Area Population	Gross Water Use, gpd	Daily Per Capita Water Use (3) ÷ (2), gpcd
1997/98	17,954	2,169,205	121
1998/99	18,444	2,338,630	127
1999/00	18,452	2,173,479	118
2000/01	18,668	2,536,932	136
2001/02	18,884	2,566,959	136
2002/03	19,100	2,513,836	132
2003/04	19,316	2,756,192	143
2004/05	19,617	2,400,822	122
2005/06	19,766	2,277,863	115
2006/07	19,915	2,585,973	130
Total of Column (4):			1,279
Divide Total by 10:			128

- Method 3: 95 percent of the applicable State hydrologic region target as stated in the State's April 30, 2009, draft 20x2020 Water Conservation Plan
- Method 4: A provisional approach that considers the water conservation potential from (1) indoor residential savings, (2) metering savings, (3) commercial, industrial and institutional savings, and (4) landscape and water loss savings. As described below, the target may need to be adjusted further to achieve a minimum reduction in water use regardless of the target method.

Target Method 1

SBx7-7 legislation, Water Code Section 10608.20 (b) (1), defines Method 1 as:

Eighty percent of the urban retail water supplier's baseline per capita daily water use.

Urban water use targets calculated using Method 1 rely on the historical gross water use and service area population to determine a base daily per capita water use. The definitions and methodologies used for Method 1, as defined in the legislation and in the DWR Methodologies, are detailed below.

Target Method 1 is based on a 20 percent reduction from the District's 10-year Base Daily Per Capita Water Use. The Interim (2015) target is based on 90 percent of the Base Daily Per Capita Water Use and the Final (2020) target is based on 80 percent of the Base Daily Per Capita Water Use.

As calculated above, the District's Base Daily Per Capita Water Use for the 10-year period ending June 30, 2007 is 128 gpcd (see Table 5). Therefore, the District's interim (2015) target per Target Method 1 is 115 gpcd (90 percent of 128 gpcd), and the District's final (2020) target per Target Method 1 is 102 gpcd (80 percent of 128 gpcd).

The District's targets using Target Method 1 are summarized as follows:

- Interim (2015) Target = 115 gpcd
- Final (2020) Target = 102 gpcd

Target Method 2

SBx7-7 legislation, Water Code Section 10608.20 (b) (2), defines Method 2 as:

The per capita daily water use that is estimated using the sum of the following performance standards:

- (A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.*
- (B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.*

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, institutional water use by 2020.

Residential Indoor Water Use

Per DWR Methodology 5 (Indoor Residential Use), the residential indoor urban water use target is set at 55 gpcd. The legislation requires that DWR assess whether this is a reasonable assumption in a report due in 2016. Depending on the findings, the residential indoor urban water use target may be adjusted after 2016.

Landscape Irrigation Water Use

The landscaped area urban water use target relies on the state-adopted Model Water Efficient Landscape Ordinance for definitions and calculations. The 2020 landscaped area for the service area must be estimated and then the Maximum Applied Water Allowance (MAWA) calculated from the Model Water Efficient Landscape Ordinance. Two different MAWA equations are specified in the DWR Methodologies. For landscapes installed prior to January 1, 2010, the MAWA equation as defined in the 1992 version of the Model Water Efficient Landscape Ordinance is to be used. For landscapes installed after January 1, 2010, the MAWA equation as defined in the 2009 version of the Model Water Efficient Landscape Ordinance is to be used.

Per the DWR Methodology 6 (Landscaped Area Water Use), a rigorous application of this method requires a data-intensive analysis using GIS, coupled with site visits, to estimate to 2020 landscape areas. Such an analysis is not possible for the District as the District does not currently have a GIS, other detailed property data or satellite imagery of its service area.

Commercial, Industrial and Institutional Water Use

Per DWR Methodology 7 (Baseline Commercial, Industrial and Institutional Water Use), the commercial, industrial and institutional (CII) urban water use target is based on a 10 percent reduction in water use from the baseline CII water use by 2020. The calculation of the baseline CII water use is performed in the same way that the 10-year Base Daily Per Capita Water Use is calculated.

Because the District does not currently have data with regards to landscaped areas within its service area, a target using Method 2 cannot be determined at this time. As the District begins to develop a GIS system for its water service area, additional data may become available to evaluate targets using Method 2 in the future. The use of Method 2 may be considered for the District's 2015 UWMP if adequate data is available.

The District's targets using Target Method 2 are summarized as follows:

- Interim (2015) Target = Not calculated due to insufficient data
- Final (2020) Target = Not calculated due to insufficient data

Target Method 3

SBx7-7 legislation, Water Code Section 10608.20 (b) (3), defines Method 3 as:

Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

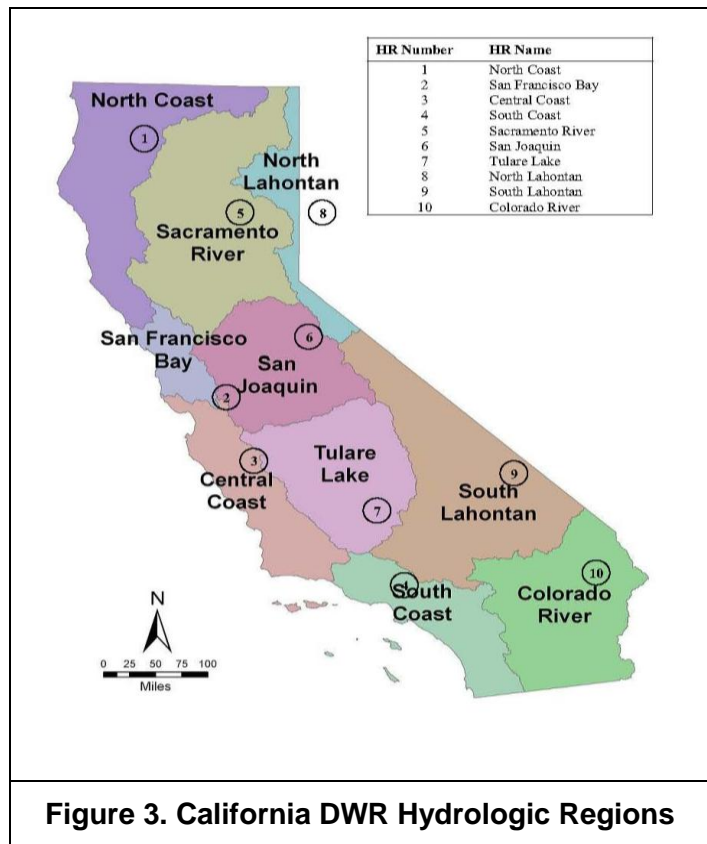
Method 3 is based solely on the hydrologic region targets that have been established in the draft 20x2020 Water Conservation Plan dated April 30, 2009³.

DWR has defined ten hydrologic regions for water resources planning purposes (see Figure 3). The District is located in the San Francisco Bay Hydrologic Region (Region No. 2).

The baseline, interim and final targets established in the 20x2020 Water Conservation Plan are summarized in Table 6.

Table 6 also shows 95 percent of the final (2020) hydrologic region targets, which are the required 2020 targets for SBx7-7 Target Method 3. For the District, the 2020 target is 124 gpcd (95 percent of the Region No. 2 target of 131 gpcd).

The Method 3 interim target is calculated based on the midpoint between the District's 10-year Base Daily Per Capita Water Use (128 gpcd) and the Method 3 2020 Target (124 gpcd) and equals 126 gpcd.



The District's targets using Target Method 3 are summarized as follows:

- Interim (2015) Target = 126 gpcd
- Final (2020) Target = 124 gpcd

³ A final version of the 20x2020 Water Conservation Plan was published in February 2010.

Table 6. California Hydrologic Region Per Capita Water Use Targets

DWR Hydrologic Region Number and Name	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	Region 10
	North Coast	SF Bay	Central Coast	South Coast	Sacto River	San Joaquin	Tulare Lake	North Lahontan	South Lahontan	Colorado River
20x2020 Water Conservation Plan Targets										
Baseline (1995-2005), gpcd	165	157	154	180	253	248	285	243	237	346
Interim (2015) Targets, gpcd	151	144	139	165	215	211	237	208	204	278
Final (2020) Targets, gpcd	137	131	123	149	176	174	188	173	170	211
SBx7-7 Targets										
95% of Final (2020) Targets, gpcd	130	124	117	142	167	165	179	164	162	200

Note: The Coastside County Water District is located in Region 2 (San Francisco Bay).

The Interim (2015) SBx7-7 target is the midpoint of the agency's 10-year Base Daily Per Capita Water Use and the SBx7-7 2020 Target shown above.

Target Method 4

On February 16, 2011, DWR released the Provisional Method 4. It should be noted that Method 4 is “provisional”, and it is expected that DWR will continue to make improvements to the method, prior to finalizing the methodology before the end of 2014 as stated in Water Code Section 10608.20 (d):

The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.

Possible improvements to Method 4 may include changes to the landscape and water loss savings calculations and adjustments to baselines based on data provided in 2010 UWMPs.

Method 4 develops water use targets which consider the water conservation potential from the following four sources:

1. Indoor Residential Savings
2. Metering Savings
3. CII Savings
4. Landscape and Water Loss Savings

The sum of the calculated water use savings from the four sources listed above will be subtracted from the 10-year Base Daily Per Capita Water Use to determine the Method 4 final (2020) water use target. The Method 4 interim target is calculated based on the midpoint between the 10-year Base Daily Per Capita Water Use and the Method 4 2020 Target. A summary of the water savings assumptions and calculations for each of these four sources is provided below.

Indoor Residential Savings

Indoor residential water use is assumed to be 70 gpcd for all water suppliers. The indoor residential savings can be calculated in two ways, either by using a default savings of 15 gpcd, or by using the Best Management Practice (BMP) Calculator. The BMP Calculator sums the potential savings from the following four elements:

- Single-family housing toilets,
- Multi-family housing toilets,
- Residential washers, and
- Showerheads.

Based on the four categories of fixtures listed above, the BMP Calculator estimates how much indoor residential water use would be saved if the saturation for efficient fixtures was increased to reach saturation goals for 2020. Saturation goals for each of the elements listed above are defined as:

- Single-family housing toilets = 85 percent 1.28 gallons per flush toilets
- Multi-family housing toilets = 85 percent 1.28 gallons per flush toilets
- Residential washers = 85 percent Water Factor of 6 (Water Factor = gallons of water per cubic foot of laundry), 15 percent average 2000 Water Factor
- Showerheads = 95 percent low flow showerheads

Existing saturation estimates are based on the midpoint year of the supplier's baseline, which for the District would be 2002. Therefore, water suppliers with existing high percentages of efficient fixtures will have to install fewer efficient fixtures in the future, and subsequently, will have a smaller calculated indoor residential savings requirement (i.e., higher Method 4 per capita water use target).

Metering Savings

The metering savings calculation assumes (per BMP 1.3 of the California Urban Water Conservation Council Memorandum of Understanding) that water deliveries to unmetered accounts can be lowered by 20 percent once meters are installed.

CII Savings

The CII savings are equal to 10 percent of the baseline CII water use, which is identical to the calculation of the CII water use target in Target Method 2 as discussed above.

Landscape and Water Loss Savings

Estimated landscape water use and water loss is equal to the 10-year Base Daily Per Capita Water Use minus the following per capita water uses: residential indoor, unmetered, and CII. Landscape and water loss savings are defined to be 21.6 percent of the calculated estimated landscape water use and water loss. DWR calculated the value of 21.6 percent based on the percent reduction required for a random sample of 52 California water suppliers to reduce their collective total per capita water demand by 20 percent. DWR anticipates adjusting the required percent reduction in landscape and water loss savings to be included in the 2015 UWMP.

Target Method 4 Calculation

West Yost has calculated the District’s targets using Method 4 based on the default savings for the indoor residential savings as follows:

Calculation for Estimated Landscape Water Use and Water Loss:								
10-Year Baseline, gpcd	Minus	Standard Indoor Residential, gpcd	Minus	10-Year Baseline CII, gpcd	Equals	Estimated Landscape Water Use and Water Loss, gpcd		
128	-	70	-	49 (based on 2005 CII water use)	=	9		
Calculation of Total Savings:								
Indoor Residential Savings (Default), gpcd	Plus	Metered Savings BMP 1.3, gpcd	Plus	CII Savings BMP 4 (10% of CII Baseline), gpcd	Plus	Landscape plus Water Loss Savings (21.6% of Estimated Landscape Water Use and Water Loss), gpcd	Equals	Total Savings, gpcd
-15	+	0	+	-5	+	-2	=	-22
Calculation of Provisional Method 4 2020 Urban Water Use Target:								
10-Year Baseline, gpcd	Plus	Total Savings, gpcd	Equals	2020 Urban Water Use Target, gpcd				
128	+	-22	=	106				

The Method 4 interim target is calculated based on the midpoint between the District’s 10-year Base Daily Per Capita Water Use (128 gpcd) and the Method 4 2020 Target (106 gpcd) and equals 117 gpcd.

The District’s targets using Target Method 4 are summarized as follows:

- Interim (2015) Target = 117 gpcd
- Final (2020) Target = 106 gpcd

Minimum Water Use Reduction Requirement

Water Code Section 10608.22 specifies the minimum water use reduction requirement as follows:

Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier’s per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivision (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.

The calculation of the minimum water use reduction requirement includes the following three steps:

1. Calculate Base Daily Per Capita Water Use using a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.
2. Multiply the result from Step 1 by 0.95. The 2020 per capita water use target cannot exceed this value (unless the water supplier's five year baseline per capita water use is 100 gpcd or less). If the 2020 target is greater than this value, reduce the target to this value.
3. Set the 2015 target to the mid-point between the 10- or 15-year baseline per capita water use and the 2020 target determined in Step 2.

As described above, the District's Base Daily Per Capita Water Use for the five-year period ending June 30, 2008 was 127 gpcd (see Table 4). Therefore, per Water Code Section 10608.22, the 2020 per capita water use target cannot exceed 95 percent of 127 gpcd, or 120 gpcd. The Interim (2015) target is then set at the midpoint between the District's 10-year Base Daily Per Capita Water Use (128 gpcd) (see Table 5) and 120 gpcd, which equals 124 gpcd.

The District's targets using the required minimum reduction are summarized as follows:

- Interim (2015) Target = 124 gpcd
- Final (2020) Target = 120 gpcd

Recommended Target Method and Resulting Targets for the Coastside County Water District

Table 7 summarizes the methods for calculating base daily water use and the interim and final target daily water use in gallons per capita per day (gpcd).

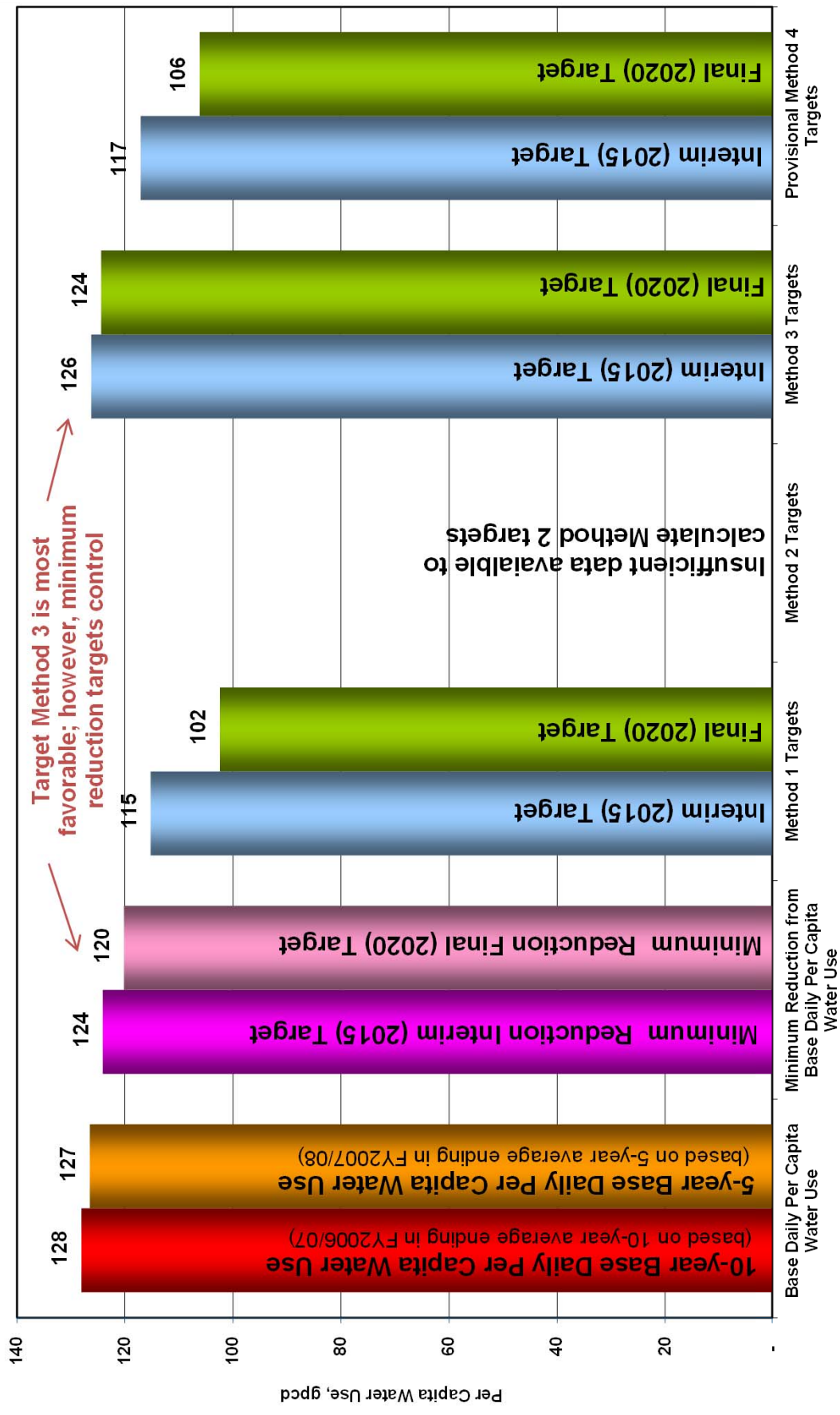
Table 7. Summary of SBx7-7 Methodologies for Determining Urban Water Use Targets

Target Method Number	Target Method Description	Base Daily Per Capita Water Use	Interim (2015) Target	Final (2020) Target
1	<ul style="list-style-type: none"> Uses historical gross water use and service area population to determine a base daily per capita water use. The Urban Water Use Target is 80 percent of this value. Based on 10-year running average per capita water use ending between December 31, 2004 and December 31, 2010. Gross water use is that total water supplied to the system less recycled, wholesale or agricultural deliveries 	128 gpcd	115 gpcd	102 gpcd
2	<ul style="list-style-type: none"> Uses performance standards for indoor water use, landscape irrigation use and commercial, institutional and industrial (CII) uses. Residential water use = 55 gpcd Uses Model Water Efficient Landscape Ordinance for definitions and calculations. Uses estimated landscaped area and applies a Maximum Applied Water Allowance, calculated from the ordinance^(b). CII use based on historical CII per capita use less 10 percent 	128 gpcd ^(a)	The District does not currently have a GIS, detailed property data or satellite imagery of its service area required for this analysis,	
3	<ul style="list-style-type: none"> Uses 95 percent of the applicable state hydrologic region target as defined in the state's draft 20x2020 Water Conservation Plan issued by DWR in April 2009 Coastside County Water District is located in state hydrologic region number 2 (San Francisco Bay) 	128 gpcd ^(a)	126 gpcd	124 gpcd
4	<ul style="list-style-type: none"> Results shown based on Provisional Method 4 released by DWR in February 2011 Provisional Method 4 is subject to change 	128 gpcd ^(a)	117 gpcd	106 gpcd
Minimum Requirement	<ul style="list-style-type: none"> Based on 95 percent of the 5-year running average per capita water use ending between December 31, 2007 and December 31, 2010. 	127 gpcd	124 gpcd	120 gpcd

^(a) The baseline for this method is the same as Method 1 and is used to establish the interim target.
^(b) Rigorous application of this method requires a data-intensive analysis using GIS, coupled with site visits to estimate appropriate irrigation areas. This type of data is currently not available for the District's service area (see additional discussion under Target Method 2).

Based on the results for the four target methods, Target Method 3 results in the highest allowable SBx7-7 gpcd, and therefore is the most favorable. However, based on the District's minimum reduction requirements, the minimum reduction targets control and become the District's interim and final gpcd target goals. These targets are summarized and graphically shown on Figure 4.

Figure 4. Summary of SBX7-7 Targets for Coastside County Water District



Therefore, the District should adopt the following SBx7-7 per capita water use targets based on the minimum reduction targets:

- Interim (2015) Target = 124 gpcd
- Final (2020) Target = 120 gpcd

The District's compliance with these targets in 2015 and 2020 shall be determined in accordance with DWR Methodology 4 (Compliance Daily Per Capita Water Use) based on gross water use and service area population in the compliance years (2015 and 2020).

ADJUSTMENTS TO COMPLIANCE DAILY PER CAPITA WATER USE

Water Code Section 10608.24(d) provides for adjustments when determining the compliance daily per capita water use. It states that an urban retail water supplier may consider the following factors:

- Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.
- Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.
- Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.

As described in DWR Methodology 8 (Criteria for Adjustments to Compliance Daily Per Capita Water Use), if the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described above, it shall provide the basis for, and data supporting, the adjustment.

FUTURE REVISION OF METHODS AND/OR TARGETS

The District may revise its calculated Base Daily Per Capita Water Use after submitting its 2010 UWMP if better information becomes available. The revisions may be included in the District's 2015 and subsequent plans or may be submitted in an amended 2010 UWMP, provided it follows the process required for amendments to UMWPs. It should be noted that if the revisions to the Base Daily Per Capita Water Use change the water use target, the water use target must be revised as well.

In addition, the District may choose to change the method it uses to set its water use target, and report the method change and target revision in an amended 2010 UWMP or in its 2015 UWMP. However, target method changes are not permitted in an amended 2015 UWMPs or in 2020 UWMPs.

PUBLIC HEARING REQUIREMENTS

To comply with Water Code Section 10608.26, the District shall conduct at least one public hearing to discuss and adopt the water use target method and resulting water use targets for 2015 and 2020. The following issues must be addressed during the public hearing:

- Allow community input regarding the urban retail water supplier’s implementation plan for complying with SBx7-7;
- Consider the economic impacts of the urban retail water supplier’s implementation plan for complying with SBx7-7; and
- Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.

The Water Code has no other specific requirements for this public hearing. The District may choose to hold a specific public hearing for this purpose only, or may choose to combine this public hearing with the public hearing required for the preparation of the District’s 2010 UWMP (per Water Code Section 10642).

REPORTING REQUIREMENTS

The District must report on their SBx7-7 compliance in their upcoming UWMPs. Table 8 provides an outline of the specific reporting requirements for the District’s 2010, 2015, and 2020 UWMPs.

Table 8. SBx7-7 Reporting Requirements			
Reporting Element	2010 UWMP	2015 UWMP	2020 UWMP
Baseline Gross Water Use and Service Area Population	✓	✓	✓
2020 Urban Water Use Target	✓	✓	✓
Interim 2015 Urban Water Use Target	✓	✓	
Compliance Year Gross Water Use		✓	✓
Adjustments to Gross Water Use in the Compliance Year		✓	✓
Water Suppliers who choose Target Method 2 must provide Landscaped Area Water Use and Baseline CII Water Use data	✓	✓	✓
Water suppliers who choose Target Method 4 must provide the components of calculation as required by Target Method 4	✓	✓	✓

The District will incorporate these reporting requirements into their 2010, 2015 and 2020 UWMPs.

CONSEQUENCES OF NON-COMPLIANCE WITH SBX7-7

The District must comply with the SBx7-7 requirements by establishing 2015 interim and 2020 final water use targets, demonstrating that its water use is in compliance with its targets, and reporting water use baselines, targets, compliance year water use, and supporting data in its 2010, 2015 and 2020 UWMPs.

Water Code Section 10608.56(a) states that a water supplier not in compliance will not be eligible for water grants or loans that may be administered by DWR or other state agencies:

On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

Two exceptions to this are allowed.

- Water Code Section 10608.56 (c) states that a water supplier shall be eligible for a water loan or grant if it “has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions.”
- Water Code Section 10608.56 (e) states that a water supplier can also be eligible for a water loan or grant if it “has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.”

REFERENCES

- Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use, prepared by California Department of Water Resources, October 1, 2010.
- Senate Bill 1478, approved by Governor Arnold Schwarzenegger on September 24, 2010.
- Water Conservation Act of 2009 (Senate Bill x7-7), approved by Governor Arnold Schwarzenegger on November 10, 2009.