

Date: May 18, 2011
From: David Mitchell
To: Ken Jenkins

Re: Hawthorne District SBx7-7 Targets and Baseline Demand Projection

Historical Per Capita Water Use

Hawthorne District’s historical per capita water use for the years 1996-2010 is summarized in Table 1. It is calculated by dividing annual water delivery net of recycled water by service area population and expressing the result in gallons per day. Over the period examined, daily per capita water use ranged between 77.4 gallons (2010) and 103.2 gallons (1997 and 2000).

Table 1. Hawthorne District Historical Per Capita Water Use

Year	Total Delivered (AF)	Less Recycled Water (AF)	Adjusted Delivered (AF)	Service Area Population	Service Area GPCD
1996	4,177	(61)	4,116	42,784	85.9
1997	5,056	(80)	4,976	43,065	103.2
1998	4,889	(90)	4,799	42,980	99.7
1999	4,929	(87)	4,842	42,957	100.6
2000	5,075	(95)	4,980	43,088	103.2
2001	5,003	(106)	4,897	46,217	94.6
2002	5,118	(123)	4,995	46,175	96.6
2003	4,909	(93)	4,817	45,147	95.2
2004	5,113	(113)	5,000	46,175	96.7
2005	5,034	(119)	4,915	46,190	95.0
2006	4,783	(118)	4,665	46,174	90.2
2007	4,843	(100)	4,743	46,199	91.7
2008	4,685	(103)	4,583	46,175	88.6
2009	4,385	(98)	4,287	47,857	80.0
2010	4,230	(84)	4,146	47,807	77.4

Base Daily Per Capita Water Use

Hawthorne District’s 10-Year and 5-Year base daily per capita water uses are summarized in Table 2. The period 1997-2006 has the maximum 10-year base daily water use. The period 2003-2007 has the maximum 5-year base daily water use. Therefore, these periods should be used for SBx7-7 target calculations. Note that because base daily per capita water use in both

periods is less than 100 gpcd, the requirement that the 2020 target cannot exceed 95% of the 5-year base daily per capita water use does not apply.

Table 2. Hawthorne District Base Daily Per Capita Water Use

10-Yr Base Daily Per Capita Use	GPCD
1996 - 2005	97.1
1997 - 2006	97.5
1998 - 2007	96.3
1999 - 2008	95.2
2000 - 2009	93.2
2001 - 2010	90.6
<i>Maximum 10-Yr Base Daily Use: 1997 - 2006</i>	97.5
5-Year Base Daily Per Capita Use	GPCD
2003 - 2007	93.8
2004 - 2008	92.4
2005 - 2009	89.1
2006 - 2010	85.6
<i>Maximum 5-Yr Base Daily Use: 2003 - 2007</i>	93.8

SBx7-7 Method 1 Target

Under Method 1, the 2020 target is equal to 80% of the 10-year base daily per capita water use. This is equal to 78.0 gpcd. The 2015 target is equal to the mid-point between the 10-year base daily per capita water use and the 2020 target. This is equal to 87.7 gpcd.

SBx7-7 Method 2 Target

The landscape area measurement data needed to calculate the targets under Method 2 is not available. Therefore, targets under Method 2 are not provided.

SBx7-7 Method 3 Target

Under Method 3, the 2020 target is equal to 95% of the South Coast Hydrologic Region 2020 Target. The South Coast Hydrologic Region 2020 Target is equal to 149 gpcd. Therefore, Hawthorne District’s 2020 target under Method 3 is 141.6 gpcd. The 2015 target is equal to 95% of the South Coast Hydrologic Region Interim Target. The South Coast Hydrologic Region Interim Target is 165 gpcd. Therefore, Hawthorne District’s 2015 target under Method 3 is 156.7 gpcd.

SBx7-7 Method 4 Target

Under the provisional Method 4, the 2020 target is calculated using DWR's *Provisional Method 4 Target Calculator*. Hawthorne District's 2020 target under provisional Method 4 is 78.2 gpcd.¹ The 2015 target is equal to the mid-point between the 10-year base daily per capita water use and the 2020 target. This is equal to 87.8 gpcd.

Selection of SBx7-7 Target Method

Non-compliance with SBx7-7 in 2015 and 2020 is minimized by selecting the targets calculated using Method 3. The 2015 and 2020 targets for the three methods are summarized in Table 3.

Table 3. Hawthorne District SBx7-7 Target Selection

Target Method	2015 Target (gpcd)	2020 Target (gpcd)
Method 1	87.7	78.0
Method 2	N/A	N/A
Method 3	156.7	141.6
Method 4	87.8	78.2
Selected Target: Method 3	156.7	141.6

Hawthorne District Baseline Per Capita Daily Water Use through 2020

Table 4 shows unadjusted and adjusted baseline per capita daily water use for Hawthorne District through 2020. Unadjusted baseline per capita daily water use is equal to the average per capita water use for the period 2005-2009. Adjusted baseline per capita daily water use deducts from this average the expected water savings from plumbing codes for residential toilets and showerheads and commercial toilets.² Figure 1 compares the unadjusted and adjusted baseline per capita water use for Hawthorne District to its 2015 and 2020 SBx7-7 targets.

Hawthorne District Baseline Demand through 2020

Table 5 shows unadjusted and adjusted baseline demand in acre-feet for Hawthorne District through 2020. Figure 2 compares the unadjusted and adjusted baseline demand for Hawthorne District to its 2015 and 2020 SBx7-7 targets re-expressed in acre-feet.

¹ Attachment 1 reproduces the input and output worksheets from the *Provisional Method 4 Target Calculator* for Hawthorne District.

² Attachment 2 provides the estimated water savings from plumbing codes for Hawthorne District.

Table 4. Hawthorne District Baseline Per Capita Daily Water Use

Year	Service Area Population	Unadjusted Baseline Per Capita Water Use	Adjusted Baseline Per Capita Water Use
2011	46,719	89.1	88.7
2012	46,826	89.1	88.4
2013	47,015	89.1	88.1
2014	47,288	89.1	87.8
2015	47,644	89.1	87.4
2016	48,084	89.1	87.1
2017	48,524	89.1	86.7
2018	48,966	89.1	86.4
2019	49,409	89.1	86.0
2020	49,852	89.1	85.7

Table 5. Hawthorne District Baseline Demand in Acre-Feet

Year	Service Area Population	Unadjusted Baseline Per Capita Water Use	Adjusted Baseline Per Capita Water Use
2011	46,719	4,662	4,642
2012	46,826	4,672	4,637
2013	47,015	4,691	4,640
2014	47,288	4,718	4,651
2015	47,644	4,754	4,666
2016	48,084	4,798	4,689
2017	48,524	4,842	4,712
2018	48,966	4,886	4,737
2019	49,409	4,930	4,762
2020	49,852	4,974	4,788

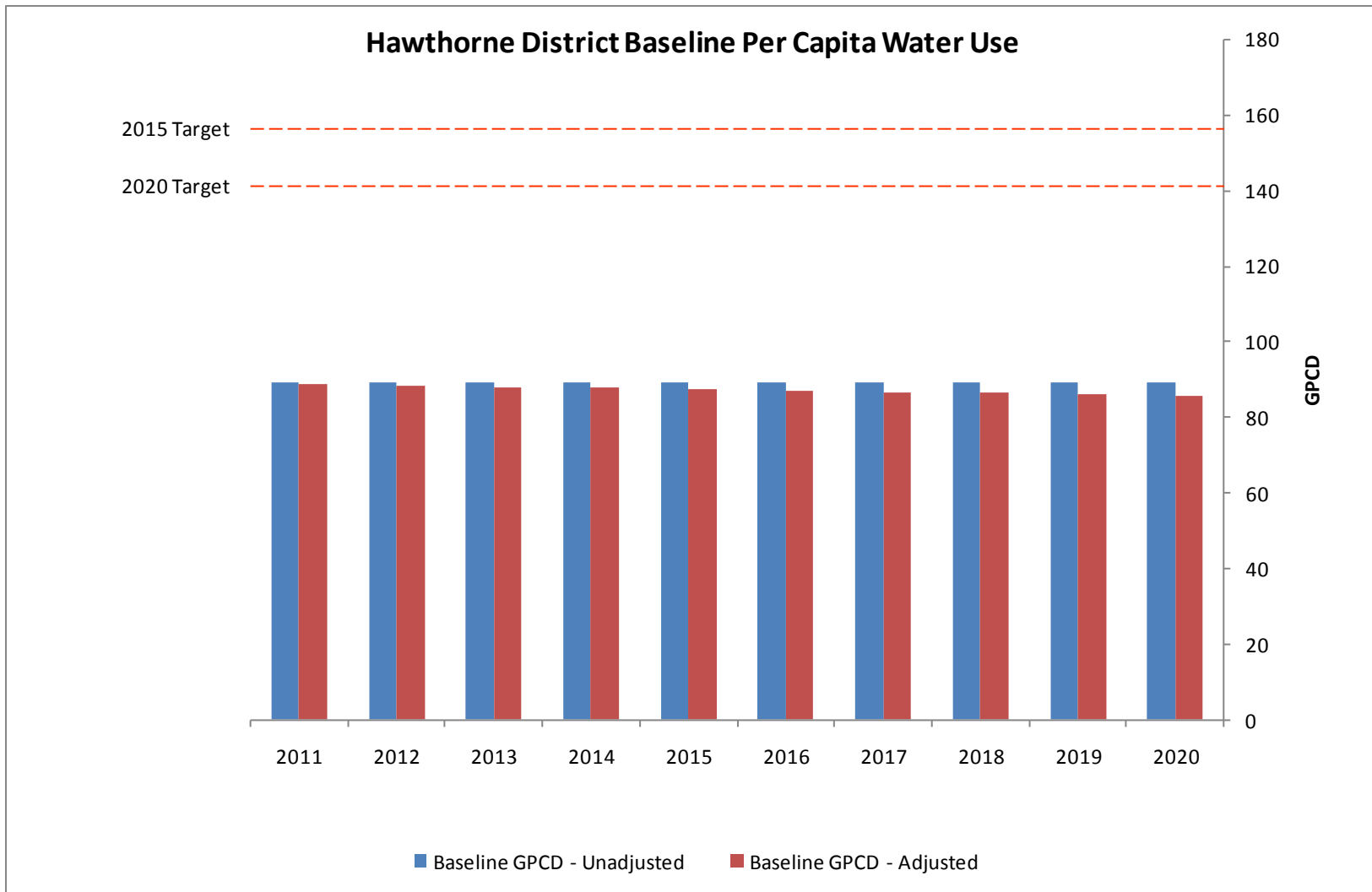


Figure 1

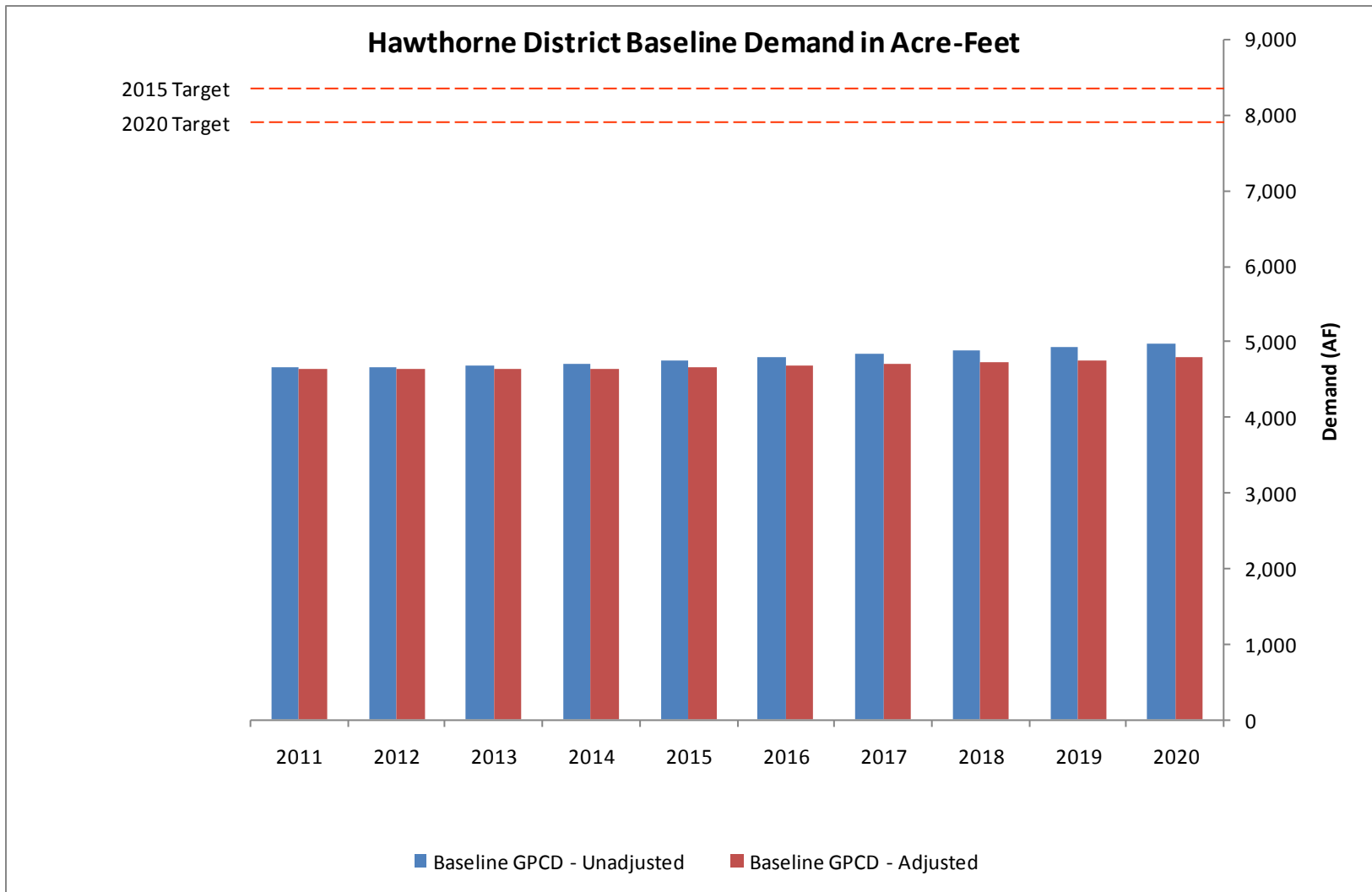


Figure 2

Attachment 1
Input and Output Worksheets from the Provisional Method 4 Target Calculator

User Input -- Provisional Method 4 Target												
Target Calculation Option (select one): * <input type="text" value="Calculate Targets Using Default Indoor Residential Savings"/>											* = Required Data	
Water Supplier Name: * <input type="text" value="Hawthorn District, CWS"/>												
10-15 Year Baseline Water Use Information												
Baseline Period: * <input type="text" value="1991-2006"/>											Midpoint of Baseline Period: <input type="text" value="2001"/>	
Baseline Water Use GPCD: * <input type="text" value="97.5"/>											Population in Midpoint Year: * <input type="text" value="46,217"/>	
5 Year Baseline Water Use Information												
Baseline Period: * <input type="text" value="2000-2007"/>												
Baseline Water Use GPCD: * <input type="text" value="93.8"/>											95% of 5-Year Baseline GPCD: <input type="text" value="89.1"/>	
Unmetered Connections												
Number of Unmetered Connections in 2001: * <input type="text" value="0"/>												
Water Use By Unmetered Connections In 2001: * <input type="text" value="0"/>											Acre-Feet	
Baseline CII Water Use¹												
CII Water Use in 2001: * <input type="text" value="722"/>											Acre-Feet	
Per Capita Use: <input type="text" value="13.9"/>											GPCD	
¹ CII = Commercial, Industrial, Institutional.												
If you have chosen to calculate targets using the Default Indoor Residential Savings, you do not need to complete the remaining tables. Go to the "Calculated Targets" worksheet.												
<input type="button" value="READ ME"/> <input type="button" value="User Input"/> <input type="button" value="Calculated Targets"/> <input type="button" value="BMP 1.3 Metering"/> <input type="button" value="BMP 3.1"/> <input type="button" value="Single Family Toilets"/> <input type="button" value="Multi Family Toilets"/>												

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	
1	Target Calculation -- Provisional Method 4 Target																	
2																		
3	Step 1. Calculation of Landscape Water Use and System Water Loss																	
4																		
5	Urban Supplier		1997-2006 Baseline GPCD	-	Assumed Indoor Residential per Capita Water Use GPCD	-	CII per Capita Water Use GPCD	=	Estimated Landscape Water Use and System Water Loss GPCD									
6	Hawthorn District, CWS		97.5		70.0		13.9		13.6									
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14	Step 2. Calculation of Savings Using BMP Calculators (Alternate) STEP 2 BEING USED TO CALCULATE TARGET																	
15																		
16	Urban Supplier		Indoor Residential Savings Calculators					+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Landscape + Water Loss Savings 21.6%	=	Total Savings GPCD			
17			Single Family Toilets	Multi Family Toilets	Residential Washers	Residential Showers	Total IR Savings											
18	Hawthorn District, CWS		XXXX	XXXX	XXXX	XXXX	XXXX		XXXX		XXXX		XXXX		XXXX			
19																		
20																		
21																		
22																		
23																		
24																		
25	[Alternate] Step 2. Calculation of Savings Using Default Indoor Residential Savings																	
26																		
27	Urban Supplier		Default Residential Indoor Savings	+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Landscape + Water Loss Savings 21.6%	=	(alt) Total Savings GPCD							
28	Hawthorn District, CWS		15.0		0.0		1.4		2.9		19.3							
29																		
30																		
31																		
32																		
33																		
34																		
35																		
36	Step 3. Calculation of Urban Water Use Targets																	
37																		
38	Urban Supplier		1997-2006 Baseline GPCD	-	Total Savings GPCD	=	Computed 2020 Target GPCD	➔	Less Than 95% of 5-Year Baseline	➔	Final 2020 Target	➔	Final 2015 Target					
39	Hawthorn District, CWS		97.5		19.3		78.2		TRUE		78.2		87.8					
40																		
41																		
42																		
43																		
44																		

Attachment 2 Hawthorne District Plumbing Code Savings Projection

Single Family Toilets

Year	Total Toilets	Non			Avg Flush Vol.	2010	Projected Use (AF)	Projected Savings (AF)
		ULFT	ULFT	HET		Baseline Use* (AF)		
2010	8,745	3,958	4,787	0	2.57	334	334	0
2011	8,818	3,800	5,018	0	2.53	337	331	6
2012	8,829	3,648	5,181	0	2.49	338	326	11
2013	8,855	3,502	5,354	0	2.45	339	323	16
2014	8,898	3,362	5,536	0	2.41	340	319	21
2015	8,955	3,227	5,314	414	2.36	343	314	28
2016	9,029	3,098	5,102	829	2.31	345	310	36
2017	9,102	2,974	4,898	1,230	2.26	348	306	42
2018	9,176	2,855	4,702	1,619	2.21	351	302	49
2019	9,249	2,741	4,514	1,994	2.17	354	298	56
2020	9,323	2,631	4,333	2,358	2.13	357	295	62

*Baseline use is based on the average flush volume in 2010. Projected use is based on the average flush volume in each year.

Multi Family Toilets

Year	Total Toilets	Non			Avg Flush Vol.	2010	Projected Use (AF)	Projected Savings (AF)
		ULFT	ULFT	HET		Baseline Use* (AF)		
2010	10,042	4,546	5,496	0	2.57	399	399	0
2011	10,143	4,364	5,780	0	2.52	403	396	8
2012	10,173	4,189	5,984	0	2.49	405	391	14
2013	10,220	4,022	6,199	0	2.45	407	387	20
2014	10,286	3,861	6,425	0	2.41	409	383	26
2015	10,370	3,706	6,168	495	2.35	413	377	35
2016	10,472	3,558	5,921	992	2.30	417	373	44
2017	10,574	3,416	5,684	1,474	2.25	421	368	53
2018	10,677	3,279	5,457	1,941	2.20	425	364	61
2019	10,780	3,148	5,239	2,393	2.16	429	360	69
2020	10,883	3,022	5,029	2,832	2.11	433	356	77

*Baseline use is based on the average flush volume in 2010. Projected use is based on the average flush volume in each year.

CII Toilets

Year	Total Toilets	Non ULFT	ULFT	HET	Avg Flush Vol.	2010	Projected Use (AF)	Projected Savings (AF)
						Baseline Use* (AF)		
2010	4,152	1,458	2,694	0	2.35	137	137	0
2011	4,185	1,399	2,786	0	2.32	138	136	2
2012	4,191	1,343	2,848	0	2.29	138	134	4
2013	4,203	1,290	2,913	0	2.26	138	133	6
2014	4,223	1,238	2,985	0	2.23	139	132	7
2015	4,249	1,188	2,866	195	2.19	140	130	10
2016	4,283	1,141	2,751	391	2.14	141	128	13
2017	4,316	1,095	2,641	580	2.10	142	127	15
2018	4,350	1,051	2,535	763	2.06	143	125	18
2019	4,384	1,009	2,434	941	2.03	144	124	20
2020	4,417	969	2,337	1,111	1.99	145	123	22

*Baseline use is based on the average flush volume in 2010. Projected use is based on the average flush volume in each year.

Single Family Showerheads

Year	Total Showerheads	Non Low Flow	Low Flow	Avg GPCD Use	2010	Projected Use (AF)	Projected Savings (AF)
					Baseline Use* (AF)		
2010	7,433	1,053	6,380	9.44	223	223	0
2011	7,495	948	6,547	9.37	225	223	2
2012	7,504	853	6,652	9.31	225	222	3
2013	7,527	768	6,760	9.26	226	222	4
2014	7,563	691	6,872	9.21	227	222	5
2015	7,612	622	6,990	9.17	228	222	7
2016	7,675	560	7,115	9.13	230	223	8
2017	7,737	504	7,233	9.09	232	224	8
2018	7,799	453	7,346	9.06	234	225	9
2019	7,862	408	7,454	9.03	236	226	10
2020	7,924	367	7,557	9.01	238	227	11

*Baseline use is based on the average flow rate in 2010. Projected use is based on the average flow rate in each year.

Multi Family Showerheads

Year	Total Showerheads	Non Low Flow	Low Flow	Avg GPCD Use	2010		
					Baseline Use* (AF)	Projected Use (AF)	Projected Savings (AF)
2010	7,933	1,124	6,809	9.44	266	266	0
2011	8,013	1,011	7,002	9.37	269	267	2
2012	8,036	910	7,126	9.31	270	266	4
2013	8,074	819	7,255	9.26	271	266	5
2014	8,126	737	7,388	9.21	273	266	7
2015	8,192	664	7,528	9.16	275	267	8
2016	8,273	597	7,675	9.12	278	269	9
2017	8,354	538	7,816	9.09	281	270	10
2018	8,435	484	7,951	9.06	283	272	11
2019	8,516	435	8,081	9.03	286	274	12
2020	8,598	392	8,206	9.01	289	276	13

*Baseline use is based on the average flow rate in 2010. Projected use is based on the average flow rate in each year.

Hawthorne District Program Savings and Cost Assumptions

Activity ID	Activity Name	Customer Class	Unit Savings (gal/yr)	Useful Life (yrs)	Free Riders (%)	Unit Costs (\$)	Annual Natural Replacement Rate (%)
1	HE Toilets: Cust Rebates or Vouchers	Single Family	8,788 ----- Based on toilet savings formula in CUWCC Costs & Savings Study. Varies with persons per household. Assumes that replaced toilets are 25% ULFTs, 75% non ULFTs.	25		\$140.00 ----- \$100 rebate + \$40 administration	4.00%
2	HE Toilets: Cust Rebates or Vouchers	Multi Family	22,444 ----- Based on toilet savings formula in CUWCC Costs & Savings Study. Varies with persons per household. Assumes that replaced toilets are 25% ULFTs, 75% non ULFTs.	25		\$125.00 ----- \$100 rebate + \$25 administration	4.00%
3	HE Toilets: Cust Rebates or Vouchers	Commercial	9,791 ----- CUWCC CII Toilet Savings Study and Zip Code Toilet Inventory. Assumes 25% of replaced toilets are ULFTs and 75% are not ULFTs.	25		\$240.00 ----- \$200 rebate + \$40 administration	4.00%
4	Clotheswasher: Cust Reb or Voucher	Single Family	7,079 ----- CUWCC Cost and Savings Study, revised 2005.	12	20%	\$165.00 ----- \$125 rebate + \$40 administration	4.00%
5	CW common: Cust Reb or Voucher	Multi Family	25,310 ----- Alliance for Water Efficiency Guide, p. 136.	8		\$440.00 ----- \$400 rebate + \$40 administration	4.17%
6	CW in-unit: Cust Reb or Voucher	Multi Family	5,244 ----- CUWCC Cost and Savings Study, revised 2005.	12	20%	\$165.00 ----- \$125 rebate + \$40 administration	4.17%
7	CW coin-op: Cust Reb or Voucher	Commercial	31,435 ----- Alliance for Water Efficiency Guide, p. 159.	8		\$440.00 ----- \$400 rebate + \$40 administration	4.17%
8	Urinals (0.25 gpf): Cust Rebates or Vouchers	Commercial	9,310 ----- Savings estimate for 0.5 gpf urinal from Alliance for Water Efficiency Library. Savings for 0.25 gpf urinal is 1.5 x the AWE figure.	25		\$340.00 ----- \$300 rebate + \$40 administration	4.00%
9	HE Toilets: Direct Install	Single Family	10,472 ----- Based on toilet savings formula in CUWCC Costs & Savings Study. Varies with persons per household. Based on Cal Water's existing direct install program. Assumes that replaced toilets are 10% ULFTs, 50% 5 gpf and 40% 3.5 gpf.	25		\$384.50 ----- Based on Cal Water program experience.	4.00%
10	HE Toilets: Direct Install	Multi Family	26,746 ----- Based on toilet savings formula in CUWCC Costs & Savings Study. Varies with persons per household. Based on Cal Water's existing direct install program. Assumes that replaced toilets are 10% ULFTs, 50% 5 gpf and 40% 3.5 gpf.	25		\$254.50 ----- Based on Cal Water program experience.	4.00%
11	HE Toilets: Direct Install	Commercial	11,667 ----- Based on toilet savings formula in CUWCC Costs & Savings Study. Varies with persons per household. Based on Cal Water's existing direct install program. Assumes that replaced toilets are 10% ULFTs, 50% 5 gpf and 40% 3.5 gpf.	25		\$479.50 ----- Based on Cal Water program experience.	4.00%
12	Urinals: Direct Install	Commercial	6,207 ----- Alliance for Water Efficiency Library.	25		\$224.50 ----- Based on experience of other water utilities.	4.00%

13	Audits & Surveys	Single Family	11,753 ----- Chesnutt, T.W., C. N. McSpadden, and D. M. Pekelney, "What is the Reliable Yield from Residential Home Water Survey Programs? The Experience of the Los Angeles Department of Water and Power", Proceedings of the American Water Works Association Conference in Anaheim, June 1995.	5		\$201.50 ----- Whitcomb, J. Residential Water Survey Evaluation, Contra Costa Water District, May 2000	
14	Audits & Surveys	Multi Family	57,815 ----- Assumes 5% of per-acct usage	5		\$662.97 ----- Based on \$56 per AF of annual per-acct usage.	
15	Audits & Surveys	Commercial	42,320 ----- Based on AWWARF, <i>Water Use Efficiency in IRP</i> , pg 155-58. CII typical survey savings potential is around 15%. Assuming half of recommended conservation activities are completed, this results in 7.5% savings per audit.	10		\$1,016.50 ----- Based on AWWARF, <i>Water Use Efficiency in IRP</i> , pg 155-58.	
16	High Efficiency Pop-Up Nozzle Web Voucher	Single Family	1,303 ----- Source: MWDSC Save Water - Save A Buck program assumptions.	5		\$3.53 ----- \$3 per nozzle material cost + \$0.5 per nozzle marketing cost + \$0.03 per nozzle to cover fixed setup costs.	
17	High Efficiency Pop-Up Nozzle Web Voucher	Multi Family	1,303 ----- Source: MWDSC Save Water - Save A Buck program assumptions.	5		\$3.53 ----- \$3 per nozzle material cost + \$0.5 per nozzle marketing cost + \$0.03 per nozzle to cover fixed setup costs.	
18	High Efficiency Pop-Up Nozzle Web Voucher	Commercial	1,303 ----- Source: MWDSC Save Water - Save A Buck program assumptions.	5		\$3.53 ----- \$3 per nozzle material cost + \$0.5 per nozzle marketing cost + \$0.03 per nozzle to cover fixed setup costs.	
19	Showerhead/Aerator,Tablet Kit Dist	Single Family	5,091 ----- Based on Cal Water program experience: 2.628 gpy showerhead 821 gpy kitchen aerator 1.642 gpy bathroom aerator	5		\$29.00 ----- Based on Cal Water program experience: \$26 for kit + \$3 for marketing	12.00%
20	Showerhead/Aerator,Tablet Kit Dist	Multi Family	5,091 ----- Based on Cal Water program experience: 2.628 gpy showerhead 821 gpy kitchen aerator 1.642 gpy bathroom aerator	5		\$29.00 ----- Based on Cal Water program experience: \$26 for kit + \$3 for marketing	12.00%
21	WBIC Vendor, Dist, & Cont Inc	Single Family	9,650 ----- Based on district-specific landscape savings model.	10		\$460.00 ----- Required vendor incentive assumed to be less than estimated \$530 customer rebate.	
22	WBIC Vendor, Dist, & Cont Inc	Multi Family	16,920 ----- Based on district-specific landscape savings model.	10		\$460.00 ----- Required vendor incentive assumed to be less than estimated \$530 customer rebate.	

23	WBIC Vendor, Dist, & Cont Inc	Commercial	16,920 ----- Based on district-specific landscape savings model.	10		\$460.00 ----- Required vendor incentive assumed to be less than estimated \$530 customer rebate.	
24	Large Landscape Water Use Reports	Irrigation	34,750 ----- Based on district-specific landscape savings model.	1		\$64.99 ----- Set up cost of \$142 amortized over 10 years, plus \$48/year report cost.	
25	Lg Lndscp Surveys & Irrig Sys: Rebates	Irrigation	119,424 ----- Based on district-specific landscape savings model.	5		\$1,400.00	
26	Comm Irrigation System: Rebates	Commercial	59,712 ----- Based on district-specific landscape savings model.	10		\$515.00	
27	Dishwashers: Vendor, Dist & Cont Inc	Commercial	57,757 ----- Source: Alliance for Water Efficiency Library	20		\$330.00 ----- Source: Alliance for Water Efficiency Library. Incentive is half the cost difference between conventional and water-efficient machines.	
28	Food Steamers: Cust Rebates	Commercial	81,407 ----- Source: MOU pp. 45-46.	10		\$2,411.00 ----- Half of average fixture cost from industry sources + marketing + admin cost	
29	Ice Machines: Cust Rebates	Commercial	271,739 ----- Source: MOU pp. 45-46.	10		\$1,985.00 ----- Half of fixture cost in CUWCC PBMP Year 2 Report + admin + mktg	
30	Pre-Rinse Spray Valves: Cust rebates	Commercial	28,285 ----- Industry sources	5		\$110.00 ----- Half of estimated fixture cost + admin	
31	Cooling Tower Cond Cont: Cust Reb, Inc	Industrial	336,129 ----- Source: MOU pp. 45-46.	5		\$1,000.00 ----- Based on Cal Water program experience.	
32	Cooling Tower pH Cont: Cust Reb, Inc	Industrial	1,296,502 ----- Source: MOU pp. 45-46.	5		\$3,810.00 ----- Industry data + admin costs	
33	Industrial Process: Audits & Incentives	Industrial	325,851 ----- Activity levels and costs expressed relative to AF of savings.	5		\$1,282.80 ----- Based on experience of other water utilities. Includes cost of audit + rebate per AF savings	



High Efficiency Toilet Rebate Program

Hawthorne District

Program Description

High-efficiency toilets use approximately 70% less water than non-efficient toilets and 20% less water than ultra-low flush toilets. This program will provide customer incentives for residential and non-residential high-efficiency toilets. Cal Water will centrally administer the program as part of a company-wide toilet rebate program.



Program Marketing

This program will be available to all residential and non-residential customers. Cal Water will market the program through direct mail, print media, bill stuffers, and its website. Expected program participation levels (rounded up to nearest 10 units) are shown in the table to the right.



Year	Rebate Goal
2011	7
2012	7
2013	7
2014	7
2015	7

*Combined goal for single family, multi family, and commercial toilet rebates.

IMPLEMENTATION COST

Costs Per Rebate and Per AF of Water Savings: Program costs vary by fixture type and customer class. Expected program costs per fixture (including marketing and administration) and per AF of water savings are shown below.

Customer Class	Program Cost (\$/Rebate)	Water Savings (\$/AF)
Single Family	\$150	\$450
Multi Family	\$130	\$230
Non-Residential	\$250	\$710

*Costs rounded to nearest \$10.

WATER SAVINGS

Fixture and Program Savings: Projected water savings per fixture vary by customer class. Projected savings per fixture, and annual and lifetime program water savings are shown below.

Customer Class	Unit Savings (gal/yr)	Lifetime Savings (AF/Rebate)
Single Family	8,900	0.5
Multi Family	15,900	1.0
Non-Residential	9,600	0.6

*Unit savings rounded to nearest 100 gal.

Year	Annual Program Cost
2011	\$1,200
2012	\$1,200
2013	\$1,200
2014	\$1,200
2015	\$1,200
Five-Year Cost	\$6,000

*Annual cost rounded to nearest \$100.

Year	Water Savings (AF)
2011	0.2
2012	0.4
2013	0.5
2014	0.7
2015	0.9
5-Year Total Savings	2.7



High Efficiency Clothes Washer Rebate Program

Hawthorne District



Program Description

Washing clothes is the second biggest use of water inside most homes, accounting for approximately 20% of indoor water use for a typical family. High-efficiency clothes washers can cut this water use by up to 60%, and save a significant amount of energy too. Unfortunately, many households and businesses are still purchasing low-efficiency washers because of their

lower up-front purchase cost. Rebates are an effective way to level the playing field.

This program will provide customer incentives for residential and non-residential high-efficiency clothes washers. The program will target single-family households, multi-family units, multi-family common laundry areas, and commercial coin-op laundries.

Cal Water will centrally administer the program as part of a company-wide toilet rebate program.



Program Marketing

This program will be available to all residential and non-residential customers. Cal Water will market the program through direct mail, print media, bill stuffers, and its website. Expected program participation levels (rounded up to nearest 10 units) are shown in the table below.

Year	Rebate Goal
2011	7
2012	7
2013	7
2014	7
2015	7

*Combined rebates for single family, multi family, and commercial customers.

IMPLEMENTATION COST

Costs per Rebate and per AF of Water Savings: Program costs vary by fixture type and customer class. Expected program costs per rebate (including marketing and administration) and per AF of water savings are shown below.

Washer Location	Program Cost (\$/Rebate)	Water Savings (\$/AF)
Single Family	\$170	\$1,200
Multi Family - In Unit	\$170	\$1,640
Multi Family - Common	\$460	\$950
Commercial Coin-op	\$460	\$770

Year	Annual Program Cost
2011	\$1,200
2012	\$1,200
2013	\$1,200
2014	\$1,200
2015	\$1,200
Five-Year Cost	\$6,000

*Annual cost rounded to nearest \$100.

WATER SAVINGS

Fixture and Program Savings: Projected water savings per fixture vary by customer class. Projected savings per fixture, and annual and lifetime program water savings are shown below.

Customer Class	Unit Savings (gal/yr)	Lifetime Savings (AF/Rebate)
Single Family	7,100	0.3
Multi Family - In Unit	5,200	0.2
Multi Family - Common	25,300	1.1
Commercial Coin-op	31,400	1.3

Year	Water Savings (AF)
2011	0.1
2012	0.2
2013	0.4
2014	0.5
2015	0.6
Total Five-Year Savings	1.8



Residential & Commercial Survey Program

Hawthorne District

Program Description

This program will provide residential and non-residential water use surveys to Cal Water customers. Residential surveys will evaluate a customer's indoor and outdoor water use and provide information on how to reduce household water use. Customers will receive a report with specific water saving recommendations as well as information on available Cal Water

conservation rebate programs that may benefit them. Multi family and commercial surveys will be used to assist high-bill customers, as well as to screen potential properties for the bathroom fixture direct installation program (if available in the district).

Surveys will be conducted by trained professionals. Cal Water will centrally administer the program as part of a company-wide program.

Program Marketing

This program will be available to all residential and non-residential customers. Cal Water will market the program through direct mail, print media, bill stuffers, and its website. Expected program participation levels (rounded up to nearest 10 units) are shown in the table to the right.

Year	Survey Goal
2011	15
2012	15
2013	15
2014	15
2015	15

*Combined surveys for single family, multi family, and commercial customers.



IMPLEMENTATION COST

Costs Per Rebate and Per AF of Water Savings: Program costs vary by fixture type and customer class. Expected program costs per fixture (including marketing and administration) and per AF of water savings are shown below.

Customer Class	Program Cost (\$/Survey)	Water Savings (\$/AF)
Single Family	\$210	\$1,470
Multi Family	\$770	\$1,320
Non-Residential	\$1,070	\$2,100

*Cost rounded to nearest dollar. Water savings cost rounded to nearest \$10. Multi family program cost is per property complex.

Year	Annual Program Cost
2011	\$3,000
2012	\$3,000
2013	\$3,000
2014	\$3,000
2015	\$3,000
Five-Year Cost	\$15,000

*Annual cost rounded to nearest \$100.

WATER SAVINGS

Fixture and Program Savings: Projected water savings per fixture vary by customer class. Projected savings per fixture, and annual and lifetime program water savings are shown below.

Customer Class	Unit Savings (gal/yr)	Lifetime Savings (AF/Survey)
Single Family	12,300	0.2
Multi Family	49,900	0.6
Non-Residential	29,100	0.4

*Unit savings rounded to nearest 100 gal/yr.

Year	Water Savings (AF)
2011	0.5
2012	1.0
2013	1.5
2014	1.9
2015	2.2
Five-Year Savings	7.1



Residential Conservation Kit Distribution Program

Hawthorne District

Program Description

This program will offer Cal Water residential customers conservation kits featuring a range of water-saving plumbing retrofit fixtures. Kits will be available at no charge to customers, who can request them via Cal Water's website, via mail, or by contacting or visiting their district.

Each kit can include up to two of each of the following items: high-efficiency

showerhead, kitchen faucet aerator, bathroom faucet aerator, full-stop hose nozzle, and toilet leak detection tablets. Customers may customize items and quantities included in their kit.

Cal Water will centrally administer this program as part of a company-wide program operated in each of its 24 service districts.

Year	Kits Distributed
2011	25
2012	25
2013	25
2014	25
2015	25



Program Marketing

This program will be available to all residential customers. Cal Water will market the program through direct mail, print media, bill stuffers, and through its website. Expected program participation levels (rounded up to nearest 10 units) are shown in the table to the right.



IMPLEMENTATION COST

Costs Per Nozzle and Per AF of Water Savings: Bulk purchasing will help keep program costs low. Kit distribution costs about \$29/kit, including the costs for the kit, marketing, and administration.

Fixture	Program Cost (\$/Kit)	Water Savings (\$/AF)
Residential Conservation Kit	\$29	\$550

*Water savings cost rounded to nearest \$10.

Year	Annual Program Cost
2011	\$1,000
2012	\$1,000
2013	\$1,000
2014	\$1,000
2015	\$1,000
Five-Year Cost	\$5,000

*Annual cost rounded to nearest \$100.

WATER SAVINGS

Kit and Program Savings: Projected savings per kit are based on prior program experience and assume a 50% to 60% installation rate for each device included in the kit. Annual and lifetime savings per kit and for the five-year program are shown below.

Fixture	Unit Savings (gal/yr)	Lifetime Savings (gal/Kit)
Residential Conservation Kit	5,100	25,500

*Unit savings rounded to nearest 100 gal/yr. Savings assumed to last five years.

Year	Water Savings (AF)
2011	0.4
2012	0.7
2013	1.0
2014	1.3
2015	1.5
Five-Year Total Savings	4.9



Sprinkler Nozzle Distribution Program

Hawthorne District

Program Description

Water efficient sprinkler nozzles use up to 20% less water than a standard sprinkler head by distributing water more slowly and uniformly to the landscape. In addition to reducing water use, water directed from these nozzles reduces run-off onto streets and sidewalks with a more directed flow.

Customers will be able to obtain the



nozzles either directly through Cal Water or via a web-voucher program. Restrictions on the number of nozzles individual customers may receive will vary by customer class and/or landscape size.

Cal Water will centrally administer this program as part of a company-wide program operated in each of its 24 service districts.



Program Marketing

This program will be available to all residential and non-residential customers. Cal Water will market the program through direct mail, print media, bill stuffers, and its website. Expected program participation levels (rounded up to nearest 10 units) are shown in the table to the right.

Year	Nozzles Distributed
2011	1,110
2012	1,110
2013	1,110
2014	1,110
2015	1,110

IMPLEMENTATION COST

Costs Per Nozzle and Per AF of Water Savings: Bulk purchasing will help keep program costs low. Nozzles are expected to cost about \$3/nozzle. Program marketing and administration is estimated at under \$1/nozzle.

Fixture	Program Cost (\$/Nozzle)	Water Savings (\$/AF)
Sprinkler Nozzle	\$4	\$190

*Fixture cost rounded to nearest dollar. Water savings cost rounded to nearest \$10.

Year	Annual Program Cost
2011	\$4,000
2012	\$4,000
2013	\$4,000
2014	\$4,000
2015	\$4,000
Five-Year Cost	\$20,000

*Annual cost rounded to nearest \$100.

WATER SAVINGS

Nozzle and Program Savings: Projected savings per nozzle, and annual and lifetime program water savings are shown below. These estimates are based on Metropolitan Water District's Save Water-Save A Buck program estimates.

Fixture	Unit Savings (gal/yr)	Lifetime Savings (gal)
Sprinkler Nozzle	1,300	6,500

*Unit savings rounded to nearest 100 gal/yr. Nozzles assumed to have a five-year useful life.

Year	Water Savings (AF)
2011	4.4
2012	8.9
2013	13.3
2014	17.8
2015	22.2
Five-Year Total Savings	66.6

