

**Appendix J: BMP Economic Analysis Assumptions**

Mid-Peninsula

Table E-1. Assumptions Used for Economic Analysis of Water Conservation BMPs

<b>BMP 1 – Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers</b>
<b>Description:</b> Conduct water surveys that include both indoor and outdoor components. Provide recommendations and install plumbing retrofit devices where needed.
<b>Assumptions:</b> <ol style="list-style-type: none"><li>Number of surveys necessary to complete is 5% of the baseline number of housing units in 1997. 15% of single-family units and 15% of multi-family units will be surveyed within 10 years of the date implementation is to commence. Surveys will be conducted according to the following schedule: 1.5% by end of the first reporting period, 3.6% by end of second reporting period, 6.3% by end of third reporting period, 9.6% by end of fourth reporting period, and 15% by end of the fifth reporting period. <i>MOU, page 16 and page 17 Section E.d. California legislation requires that plumbing fixtures manufactured, sold or installed after early 1992 be low-water-use fixtures. Therefore, the greatest water savings can be achieved in pre-1992 homes.</i></li><li>Single-family water usage = 313 gpd/unit (44% is outdoor use) <i>Single-family water usage was calculated based on historical single family water use and single-family households. The monthly indoor water use is assumed to be equivalent to 90 percent of the total water used in the lowest water use month in 1997. Outdoor water is calculated as the difference between annual total use and the assumed annual indoor water use.</i></li><li>Multi-family water usage = 250156 gpd/unit (20% is outdoor use) <i>Multi-family water usage was calculated based on historical multi-family water use and multi-family households. The monthly indoor water use is assumed to be equivalent to 90 percent of the total water used in the lowest water use month in 1997. Outdoor water is calculated as the difference between annual total use and the assumed annual indoor water use.</i></li><li>Water savings from indoor leak detection, not including toilet leaks = 0.5 gpd per residence <i>A &amp; N Technical Services report (2000, page 2-20) (12.4 gpd per household repair; 4 percent of households audited have leaks).</i></li><li>Water surveys decrease outdoor water use by 4510% <i>MOU estimate is 10% (page 17).; however, we expect water savings in the Cordova System to be greater because it is largely unmetered.</i></li><li>Each water survey costs \$50 <i>It is assumed that this BMP is done in conjunction with BMP 2.</i></li><li>The life span of a water survey is four years. <i>A &amp; N Technical Services report (2000, page 2-20) gives life spans for various components of a water survey. Four years was selected as a reasonable average value based on that information.</i></li><li>Water savings from indoor plumbing retrofits are tracked under BMP 2. Only water savings from a decrease in outdoor water use and water savings from indoor leak detection are tracked in BMP 1 to avoid double counting of water savings.</li></ol>

**Mid-Peninsula**  
**Table E-1. Assumptions Used for Economic Analysis of Water Conservation BMPs**

<p><b>BMP 2 – Residential Plumbing Retrofit</b></p> <p><b>Description:</b> Install plumbing retrofit devices in single- and multi- family residences.</p> <p><b>Assumptions:</b></p> <ol style="list-style-type: none"> <li>1. Plumbing retrofit devices will be installed at a minimum of 10% of residences per reporting period until it can be demonstrated that 75% of pre-1992 single-family residences and 75% of pre-1992 multi-family residences have low flow showerheads (LFSHs). <i>MOU, page 19.</i></li> <li>2. 22.5% of residences have low-water-use fixtures. <i>Based on professional judgement, it was estimated that 45% of plumbing fixtures in pre-1992 residences have been replaced with low-water-use fixtures due to natural attrition. Assuming that one-half of these plumbing fixtures have replaced all fixtures in some pre-1992 residences and one-half of these plumbing fixtures are spreadout, replacing only a portion of the fixtures in some pre-1992 residences, then 22.5 percent of pre-1992 residences already have low-water-use fixtures.</i></li> <li>3. It will take approximately 10.5 years to demonstrate that 75% of residences have LFSHs. <i>It was assumed that two LFSHs in a residence must be replaced to meet MOU requirements. If 22.5% of the residences have low-water-use fixtures, then 52.5% of the pre-1992 residences must still be replaced. At 5% of the residences replaced per year (10% replaced per reporting period) it would take 10.5 years to demonstrate that a total of 75% of residences have LFSHs.</i></li> <li>4. There are an average of 1.1 showers, 1.7 toilets, and 2.6 faucets (1 kitchen faucet and 1.6 other faucets) per residence. <i>For BMP 14, it has been determined that there is an average of 4.81.7 toilets per residence (see BMP 14 for details). Based on professional judgement, it is assumed there are two-thirds the number of showers as toilets, and 1.5 times the number of faucets as toilets.</i></li> <li>5. Water savings from one low-flow showerhead = 5.5 gpd <i>A &amp; N Technical Services report (2000, page 2-16).</i></li> <li>6. Water savings from one faucet aerator = 1.5 gpd <i>A &amp; N Technical Services report (2000, page 2-16).</i></li> <li>7. Water savings from one toilet flapper = 8 gpd; assume 8 percent of toilets leak. <i>A &amp; N Technical Services report (2000, page 2-16).</i></li> <li>8. Water savings from one kitchen “flip” aerator = 3.0 gpd. <i>Based on data provided by Southern California Water Company. Kitchen faucet water savings are due to the intermittent use of the flip feature during the rinse cycle.</i></li> <li>9. Indoor water savings = 12.5 gpd/unit. <i>The following equation was used to calculate indoor water savings, based on assumptions 4 through 8:</i>  <math display="block">[(1.1*5.5) + (1.0*3.0+1.6*1.5) + (1.7*8*0.08)]</math> </li> <li>10. The BMP will cost an average of \$50 per residence. <i>It is assumed that this BMP is done in conjunction with BMP 1.</i></li> <li>11. The life span of the retrofit devices is four years. <i>A &amp; N Technical Services report (2000, page 2-16) gives life spans for a various components of a water survey. Four years was selected as a reasonable average value based on that information.</i></li> </ol>
---

**Mid-Peninsula**

**Table E-1. Assumptions Used for Economic Analysis of Water Conservation BMPs**

|

**Mid-Peninsula**

**Table E-1. Assumptions Used for Economic Analysis of Water Conservation BMPs**

<b>BMP 5 – Large Landscape Conservation Programs and Incentives</b>
<p><b>Description:</b> Conduct water surveys for accounts with large landscaped areas including schools, cemeteries, parks, and civic centers. Provide recommendations for water conservation.</p>
<p><b>Assumptions:</b></p> <ol style="list-style-type: none"> <li>1. Eto-based water use budgets will be developed for 90 percent of the CII accounts with dedicated irrigation meters by the end of the second reporting period (22.5 percent per year for four years). <i>MOU (Page 27, Section C.a.)</i></li> <li>2. Water surveys will be offered to 20 percent of the CII accounts with mixed use or no meters every reporting period (10 percent per year). <i>MOU (Page 27, Section C.b.)</i></li> <li>3. Irrigation water use surveys will be completed for 15 percent of CII accounts with mixed use or no meters within 10 years of the date implementation was to commence. An agency will be considered on track if the percent of CII accounts with mixed use or no meters receiving landscape water use equals or exceeds the following: 1.5% by end of the first reporting period, 3.6% by end of second reporting period, 6.3% by end of third reporting period, 9.6% by end of fourth reporting period, and 13.5 percent by end of the 9<sup>th</sup> year. 15% must be reached by the end of the fifth reporting period. <i>MOU (Page 28, Section E.d.)</i></li> <li>4. There are 0 dedicated landscape metered accounts and 3,945 CII mixed use accounts. <i>Data provided by California Water Service Company in a spreadsheet entitled <u>Water Supply and Demand Analysis and Projections</u>, prepared October 16, 2000.</i></li> <li>5. <del>Water</del>CII mixed use account landscape areas are assumed to be an average of 0.5 acre in size. <i>This is based on professional judgement.</i></li> <li>6. Water use prior to the survey is 4.8 ft per year. <i>Irrigation allocation is equal to 100 percent of local evapotranspiration (ETo), and the MOU estimates that surveys will reduce water usage by 15 percent. The local ETo was determined (50 in/year based on California Irrigation Management Information System data) and multiplied by 1.15 to obtain 57 inches (4.8 ft) per year for current water use. (Most conservative approach for economic analysis)<del>The handbook for BMP-5 (CUWCC, 1999) presents two case studies where the annual irrigation allocation is equal to 100% of local evapotranspiration (ETo), and the MOU estimates that surveys will reduce water usage by 15%. We determined the local ETo (57 in/year based on California Irrigation Management Information System data) and multiplied it by 1.15 to obtain 65 inches per year.</del></i></li> <li>7. Surveys will reduce water usage by 15%. <i>MOU, page 29.</i></li> <li>8. The life span <del>of the</del>of the large landscape water surveys is four years. <i>A &amp; N Technical Services report (2000) gives a life span of four years for turf audits (page 2-20). It is assumed that water surveys for large landscapes will have a similar life span.</i></li> <li>9. Each survey will cost <del>\$125</del>-250 per acre. <i>This estimate is based on information presented in Cal Poly's 1988/89 annual report on their landscape water management program. The estimate includes labor, administration, evaluation and overhead.</i></li> </ol>

**Mid-Peninsula**  
**Table E-1. Assumptions Used for Economic Analysis of Water Conservation BMPs**

<b>BMP 6 – High-Efficiency Washing Machine Rebate Programs</b>
<b>Description:</b> Provide rebates to single-family residences for high-efficiency washing machines.
<b>Assumptions</b> <ol style="list-style-type: none"><li>1. Each rebate will cost <u>\$6575</u>. <i>The MOU does not require implementation of this BMP if the maximum cost-effective rebate is less than \$50 (MOU, page 31). A \$50 rebate plus an additional <u>\$15-25</u> per rebate for program administration <u>and overhead</u> was assumed.</i></li><li>2. Each high efficiency washing machine will reduce water usage by 5,100 gallons per year. <i>MOU, page 32.</i></li><li>3. Rebates will be accepted by one percent of single-family residences per year for 20 years. <i>Estimate based on professional judgement.</i></li><li>4. The life span of a high efficiency washing machine is 12 years. <i>CUWCC, 1996, <u>Guidelines for Preparing Cost Effective Analysis of Urban Water Conservation Best Management Practices</u>, September 1996, page 3-2.</i></li></ol>

## Mid-Peninsula

Table E-1. Assumptions Used for Economic Analysis of Water Conservation BMPs

<b><u>BMP 9 – Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts</u></b>
<b><u>Description:</u></b> Implement a program to conduct water-use surveys and customer incentives programs for CII customers.
<b><u>Assumptions:</u></b> <ol style="list-style-type: none"><li><u>Water-use surveys will be conducted at 10% of CII accounts</u> within <u>10 years</u> of the date implementation is to commence. Surveys will be conducted according to the following schedule: 0.5% of the total number of surveys required by the end of the first reporting period, 2.4% by end of second reporting period, 4.2% by end of third reporting period, 6.4% by end of fourth reporting period, and 10% by the end of the fifth reporting period. <u>Those customers will also be included in an incentives program.</u> <i>MOU, page 37 and page 40, Section E.b.3</i></li><li>Ultra-low-flush toilets (ULFT) in CII establishments will be replaced to produce water savings over a 10 year implementation period equal to 15 percent of total water savings potential as determined in Table E-2. Economic Analysis Worksheets. <i>MOU, BMP 9, A.(b)ii.</i></li><li>Given the choice to implement BMP 9 A (c) or (d), BMP 9 A (c), <u>CII Water Use Survey and Customer Incentives Program</u>, was selected for implementation. <i>MOU BMP 9, A.(c)</i></li><li><u>The life span of a water survey is four years.</u> <i>It was assumed that the life span for a CII water survey is the same as the life span for a residential survey. A &amp; N Technical Services report (2000, page 2-20) gives life spans for various components of a residential water survey. Four years was selected as a reasonable average value based on that information.</i></li><li><u>The average annual water savings resulting from a commercial and institutional water survey is 0.83 acre-feet per account.</u> <i>A &amp; N Technical Services report (2000, page 2-35) gives average annual water savings for three types of surveys; “analyst surveys”, “consultant surveys” and “water efficiency studies”. Analyst surveys are conducted by non-engineers, consultant surveys are conducted by engineers for sites that have process water, and water efficiency studies are conducted at major industrial facilities that use very large quantities of water. For purposes of this economic analysis, it was assumed that only analyst surveys will be conducted for commercial and institutional account surveys. Values for water savings in the A &amp; N report represent the maximum potential water savings that could occur if a customer were to implement every possible water conservation measure. Experience has shown that approximately 25% of the maximum potential water savings is actually realized, which is what was assumed (personal communication with John Sweeten, Metropolitan Water District, 5-9-00.)</i></li><li>The average annual water savings resulting from an industrial water survey is 2.1 acre-feet per account. <i>A &amp; N Technical Services report (2000, page 2-35) gives average annual water savings for three types of surveys; “analyst surveys”, “consultant surveys” and “water efficiency studies”. Analyst surveys are conducted by non-engineers, consultant surveys are conducted by engineers for sites that have process water, and water efficiency studies are conducted at major industrial facilities that use very large quantities of water. For purposes of this economic analysis, it was assumed that only consultant surveys will be conducted for industrial account surveys. Values for water savings in the A &amp; N report represent the maximum potential water savings that could occur if a customer were to implement every possible water conservation measure. Experience has shown that approximately 25% of the maximum potential water savings is actually realized, which is what was assumed (personal communication with John Sweeten, Metropolitan Water District, 5-9-00.)</i></li><li><u>Each analyst survey</u> (for commercial and institutional accounts) <u>will cost an average of \$680</u> and each consultant survey (for industrial accounts) will cost an average of \$1,680. These costs <u>include the cost of conducting the survey and overhead.</u></li></ol>

Mid-Peninsula

Table E-1. Assumptions Used for Economic Analysis of Water Conservation BMPs

**BMP 9 – Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts**

**Description:** Implement a program to conduct water-use surveys and customer incentives programs for CII customers.

*A & N Technical Services report (2000, page 2-35).*

8. The cost of toilets, advertising, administration, overhead, and toilet recycling is \$126 per ULFT. The cost does not include installation, which will be covered by the customer.

9. The life span of the new ULFTs is 20 years.

*MOU, page 70.*

10. Table E-2. Economic Analysis Worksheet for BMP 9 requires the input of toilet counts per CII subsector. Number of 1992 toilets per CII subgroup provided by CUWCC 10/4/00.

Mid-Peninsula

Table E-1. Assumptions Used for Economic Analysis of Water Conservation BMPs

<p><b>BMP 14 – Residential ULFT Replacement Programs</b></p>
<p><b>Description:</b> Implement a program to replace existing high-water-using toilets with ultra-low-flush toilets (ULFT) in single- and multi-family residences.</p>
<p><b>Assumptions:</b></p> <ol style="list-style-type: none"> <li>There are an average of <del>2.9</del>3.1 people per single-family residence and <del>2.4</del>2.3 people per multi-family residence. <i>Mid-Peninsula has an average of 2.5 people per household (California Department of Finance Report E-5, Table 2 “City/County Population and Housing Estimates” January 1, 2000). Because useful data quantifying single-family and multi-family household sizes in this CSA are unavailable, it is assumed that a ratio of multi-family to single-family household sizes is 0.7.</i></li> <li>There are an average of <del>2</del>1.7 toilets per single-family residence and <del>4.5</del>1.5 toilets per multi-family residence. <i>An average of <del>4.8</del>1.7 toilets per unit was calculated using 1990 census data concerning the number of bedrooms per housing unit. Based on professional judgement, it was assumed a one bedroom unit has 1 toilet, a two bedroom unit has 1.5 toilets, a three bedroom unit has 2 toilets, a four bedroom unit has 2.5 toilets and a five bedroom unit has 3 toilets. Because multi-family units tend to have fewer toilets on average than single-family units, it was assumed 1.5 toilets per multi-family residence and calculated that the single-family units would need to have <del>2</del>1.7 toilets per unit to achieve an overall average of <del>4.8</del>1.7 toilets per dwelling unit.</i></li> <li>Water savings from ULFTs are <del>42.7</del>37.8 gpd/unit for single-family residences and <del>47.6</del>50.3 gpd/unit for multi-family residences. <i>MOU, Exhibit 6, Table 1 and Table 2.</i></li> <li>Homes constructed after 1991 already have ULFTs. <i>As of January 1992, California legislation requires that ULFTs be installed in all newly constructed homes.</i></li> <li>The life span of the new ULFTs is 20 years. <i>MOU, page 70.</i></li> <li>Natural toilet replacement rate is 4% per year. <i>MOU, page 70.</i></li> <li>Average resale rate for single-family units in San Mateo County is 4.7% <i>Assumption based on the 1996 single-family average resale rate for San Mateo County. This rate was obtained from the CUWCC Website, <a href="http://WWW.CUWCC.ORG">WWW.CUWCC.ORG</a>, November 2000.</i></li> <li>Average resale rate for multi-family units in San Mateo County is 2.2% <i>Assumption based on the 1998 multi-family average resale rate for San Mateo County. This rate was obtained from the CUWCC Website, <a href="http://WWW.CUWCC.ORG">WWW.CUWCC.ORG</a>, November 2000.</i></li> <li>The cost of toilets, advertising, administration, <u>overhead</u>, and toilet recycling is <del>\$140-126</del> per ULFT. The cost does not include installation, which will be covered by the customer.</li> </ol>

**Mid-Peninsula  
Results of Economic Analysis of Water Conservation BMPs**

<b>BMP No.</b>	<b>BMP Name</b>	<b>Total Discounted Cost (\$)</b>	<b>Total Water Saved (acre-feet)</b>	<b>Benefit / Cost Ratio</b>	<b>Simple Payback Analysis (years)</b>	<b>Discounted Cost / Water Saved (\$/acre-feet)</b>	<b>Net Present Value / Water Saved (\$/acre-feet)</b>
1	Water Survey Programs for Single-family Residential and Multi-family Residential Customers	289,410	330	0.5	26	878	-443
2	Residential Plumbing Retrofits	871,015	1,275	0.6	25	683	-297
5	Large Landscape Conservation Programs and Incentives	56,256	790	5.8	2	71	339
6	High-efficiency Washing Machine Rebate Programs	286,056	863	0.9	23	332	550
9	Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts	554,789	2,884	1.8	12	192	149
14	Residential ULFT Replacement Programs	1,651,291	7,435	1.3	15	222	75

Value of conserved water (\$/AF) = 550  
Discount rate (real) = 6.15%  
System name = Mid-Peninsula

**Mid-Peninsula**  
**Table E-2. Economic Analysis Worksheets**  
**BMP 1. Water Survey Programs for Single-Family and Multi-Family Residential Customers**

Calendar Year	Single Family Interventions	Multi Family Interventions	Percent Surveyed <sup>a</sup>	Benefits (\$)										Costs (\$)				Net Present Value (\$)				
				Single-Family	Multi-Family	Total Outdoor Savings (AF/yr)	Total Indoor Savings (AF/yr)	Annual Water Savings (AF/yr)	Avoided Capital Costs	Avoided Variable Costs	Avoided Purchase Costs	Total Undiscounted Benefits	Total Discounted Benefits	Capital Costs	Financial Incentives	Operating Expenses	Total Undiscounted Costs		Total Discounted Costs			
				Family	Family	Units	Family	Family	Outdoor Savings (AF/yr)	Indoor Savings (AF/yr)	Water Savings (AF/yr)	Capital	Variable	Purchase	Undiscounted	Discounted	Costs		Incentives	Expenses	Undiscounted	Discounted
Pre-1998	0	0	0.0%	0.0	0.00	0.0	0.000	0.0	0	0	0	0	0	0	0	0	0	0	0	0		
1998	231	104	0.8%	3.6	0.36	3.9	0.188	4.1	0	2,266	0	2,266	2,710	0	0	16,766	16,766	20,053	-17,343			
1999	231	104	0.8%	3.6	0.36	3.9	0.188	8.2	0	4,532	0	4,532	5,107	0	0	16,766	16,766	18,891	-13,785			
2000	324	146	1.1%	5.0	0.51	5.5	0.263	14.0	0	7,705	0	7,705	8,178	0	0	23,472	23,472	24,916	-16,737			
2001	324	146	1.1%	5.0	0.51	5.5	0.263	19.8	0	10,877	0	10,877	10,877	0	0	23,472	23,472	23,472	-12,595			
2002	416	187	1.4%	6.4	0.65	7.1	0.338	23.1	0	12,690	0	12,690	11,955	0	0	30,179	30,179	28,430	-16,475			
2003	416	187	1.4%	6.4	0.65	7.1	0.338	26.4	0	14,503	0	14,503	12,871	0	0	30,179	30,179	26,783	-13,912			
2004	509	229	1.7%	7.9	0.80	8.7	0.413	29.7	0	16,316	0	16,316	13,641	0	0	36,885	36,885	30,838	-17,197			
2005	509	229	1.7%	7.9	0.80	8.7	0.413	33.0	0	18,128	0	18,128	14,278	0	0	36,885	36,885	29,052	-14,773			
2006	833	374	2.7%	12.8	1.31	14.2	0.676	40.4	0	22,207	0	22,207	16,478	0	0	60,357	60,357	44,785	-28,307			
2007	833	374	2.7%	12.8	1.31	14.2	0.676	47.8	0	26,286	0	26,286	18,374	0	0	60,357	60,357	42,190	-23,816			
2008								38.7	0	21,301	0	21,301	14,027						14,027			
2009								29.7	0	16,316	0	16,316	10,121						10,121			
2010								14.8	0	8,158	0	8,158	4,768						4,768			
2011																						
2012																						
2013																						
2014																						
2015																						
2016																						
2017																						
2018																						
2019																						
2020																						
<b>Totals:</b>	<b>4,627</b>	<b>2,080</b>	<b>15%</b>	<b>71</b>	<b>7.3</b>	<b>79</b>	<b>3.76</b>	<b>330</b>	<b>0</b>	<b>181,285</b>	<b>0</b>	<b>181,285</b>	<b>143,385</b>	<b>0</b>	<b>0</b>	<b>335,318</b>	<b>335,318</b>	<b>289,410</b>	<b>-146,025</b>			
<sup>a</sup> Percent surveyed from MOU, Exhibit 1.1.E(d)											Value of conserved water (\$/AF) =		<b>550</b>	Benefit cost ratio:							<b>0.5</b>	
											Discount rate (real) =		<b>6.15%</b>	Simple pay-back period (years):							<b>26</b>	
Credit Table for Previously Performed Surveys											Water savings from indoor leak detection (gpd/unit) =		<b>0.50</b>	Discounted cost / water saved (\$/acre-foot):							<b>878</b>	
Year	Single family units surveys	Multi-family units surveys	% Credit	Single family credits	Multi-family credits											Outdoor water savings =	<b>10%</b>	NPV / water saved (\$/acre-foot):				<b>-443</b>
Pre-1990	0	0	0.0%	0	0											Single-family outdoor water usage (gpd/unit) =	<b>138</b>					
1990	0	0	12.5%	0	0											Multi-family outdoor water usage (gpd/unit) =	<b>31</b>					
1991	0	0	25.0%	0	0											Conservation measure unit cost (\$) =	<b>50</b>					
1992	0	0	37.5%	0	0											1997 single family units =	<b>30,845</b>					
1993	0	0	50.0%	0	0											1997 multi-family units =	<b>13,864</b>					
1994	0	0	62.5%	0	0																	
1995	0	0	75.0%	0	0																	
1996	0	0	87.5%	0	0																	
1997	0	0	100.0%	0	0																	
				0	0																	

**Mid-Peninsula**  
**Table E-2. Economic Analysis Worksheets**  
**BMP 2. Residential Plumbing Retrofit**

Calendar Year	Single Family Interventions	Multi Family Interventions	Percent Units Receiving Retrofits	Incremental Water Savings (AF/yr)	Annual Water Savings (AF/yr)	Benefits (\$)					Costs (\$)					Net Present Value (\$)	
						Avoided Capital Costs	Avoided Variable Costs	Avoided Purchase Costs	Total Undiscounted Benefits	Total Discounted Benefits	Capital Costs	Financial Incentives	Operating Expenses	Total Undiscounted Costs	Total Discounted Costs		
2001	1,521	648	5.0%	30.4	30.4	0	16,701	0	16,701	16,701	0	0	108,433	108,433	108,433	-91,731	
2002	1,521	648	5.0%	30.4	60.7	0	33,403	0	33,403	31,467	0	0	108,433	108,433	102,150	-70,683	
2003	1,521	648	5.0%	30.4	91.1	0	50,104	0	50,104	44,467	0	0	108,433	108,433	96,232	-51,765	
2004	1,521	648	5.0%	30.4	121.5	0	66,805	0	66,805	55,854	0	0	108,433	108,433	90,657	-34,803	
2005	1,521	648	5.0%	30.4	121.5	0	66,805	0	66,805	52,618	0	0	108,433	108,433	85,404	-32,787	
2006	1,521	648	5.0%	30.4	121.5	0	66,805	0	66,805	49,569	0	0	108,433	108,433	80,456	-30,887	
2007	1,521	648	5.0%	30.4	121.5	0	66,805	0	66,805	46,697	0	0	108,433	108,433	75,795	-29,097	
2008	1,521	648	5.0%	30.4	121.5	0	66,805	0	66,805	43,992	0	0	108,433	108,433	71,403	-27,412	
2009	1,521	648	5.0%	30.4	121.5	0	66,805	0	66,805	41,443	0	0	108,433	108,433	67,267	-25,824	
2010	1,521	648	5.0%	30.4	121.5	0	66,805	0	66,805	39,042	0	0	108,433	108,433	63,369	-24,327	
2011	761	324	2.5%	15.2	106.3	0	58,455	0	58,455	32,183	0	0	54,216	54,216	29,849	2,334	
2012					75.9	0	41,753	0	41,753	21,656						21,656	
2013					45.5	0	25,052	0	25,052	12,241						12,241	
2014					15.2	0	8,351	0	8,351	3,844						3,844	
2015																	
2016																	
2017																	
2018																	
2019																	
2020																	
<b>Totals:</b>	15,971	6,800	53%	319	1275	0	701,457	0	701,457	491,773	0	0	1,138,541	1,138,541	871,015	-379,242	
									Value of conserved water (\$/AF) =	550					Benefit cost ratio:	0.6	
									Discount rate (real) =	6.15%					Simple pay-back period (years):	25	
									Water savings (gpd/unit) =	12.5					Discounted cost / water saved (\$/acre-feet):	683	
									Conservation measure unit cost (\$) =	50					NPV / water saved (\$/acre-feet):	-297	
									Percent units receiving retrofits =	5%							
									1991 single family units =	30,420							
									1991 multi-family units =	12,953							

**Mid-Peninsula**  
**Table E-2. Economic Analysis Worksheets**  
**BMP 5. Large Landscape Conservation Programs and Incentives**

Calendar Year	CII Accounts w/Dedicated Irr. Meters	CII Accounts w/Mixed Use or No Meters	CII Accounts w/Mixed Use or No Meters	Incremental Water Savings (AF/yr)	Annual Water Savings (AF/yr)	Benefits (\$)						Costs (\$)				Net Present Value (\$)		
						Avoided Capital Costs	Avoided Variable Costs	Avoided Purchase Costs	Total Undiscounted Benefits	Total Discounted Benefits	Capital Costs	Financial Incentives	Operating Expenses	Total Undiscounted Costs	Total Discounted Costs			
Pre-1999				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0.0	369	0.8%	27.7	9.9	9.9	0	5,434	0	5,434	6,123	0	0	3,459	3,459	3,898	2,225	
2000	0.0	369	0.8%	27.7	9.9	19.8	0	10,868	0	10,868	11,536	0	0	3,459	3,459	3,672	7,864	
2001	0.0	369	1.1%	38.7	13.8	33.6	0	18,476	0	18,476	18,476	0	0	4,843	4,843	4,843	13,632	
2002	0.0	369	1.1%	38.7	13.8	47.4	0	26,083	0	26,083	24,572	0	0	4,843	4,843	4,563	20,009	
2003		369	1.4%	49.8	17.8	55.3	0	30,430	0	30,430	27,006	0	0	6,227	6,227	5,526	21,480	
2004		369	1.4%	49.8	17.8	63.2	0	34,778	0	34,778	29,076	0	0	6,227	6,227	5,206	23,870	
2005		369	1.7%	60.9	21.7	71.1	0	39,125	0	39,125	30,816	0	0	7,611	7,611	5,994	24,821	
2006		369	1.7%	60.9	21.7	79.0	0	43,472	0	43,472	32,256	0	0	7,611	7,611	5,647	26,609	
2007		369	2.7%	99.6	35.6	96.8	0	53,253	0	53,253	37,224	0	0	12,454	12,454	8,705	28,519	
2008		369	2.7%	99.6	35.6	114.6	0	63,034	0	63,034	41,508	0	0	12,454	12,454	8,201	33,308	
2009						92.9	0	51,079	0	51,079	31,687						31,687	
2010						71.1	0	39,125	0	39,125	22,865						22,865	
2011						35.6	0	19,562	0	19,562	10,770						10,770	
2012																		
2013																		
2014																		
2015																		
2016																		
2017																		
2018																		
2019																		
2020																		
<b>Totals:</b>	0	3690	15%	554	198	790	0	434,719	0	434,719	323,916	0	0	69,188	69,188	56,256	267,660	
*Percent surveyed from MOU, Exhibit 1.5.E(d)																		
Credit Table for Previously Performed Surveys																		
Year	# of Surveys	% Credit	Credits	Value of conserved water (\$/AF) =				550	Benefit cost ratio:				5.8					
Surveyed prior to July 1, 1996 w/follow up inspection	0	100%	0	Discount rate (real) =				6.15%	Simple pay-back period (years):				2.3					
Surveyed prior to July 1, 1996 - have not received follow up inspection	0	50%	0	Acres / CII accounts with dedicated irrigation meters =				0.0	Discounted cost / water saved (\$/acre-feet):				71					
				Acres / CII accounts with mixed use meters =				0.5	NPV / water saved (\$/acre-feet):				339					
				Annual water use (ac-ft/acre) =				4.8										
				Water savings =				15%										
				Conservation measure unit cost (\$/acre) =				250										
Surveyed after July 1, 1996	0	100%	0	Number of CII accounts with dedicated irrigation meters in 1997 =				0										
Total			0	Number of CII accounts with mixed use or no meter as of 1997 =				3,690										
				Percent of CII accounts with dedicated irrigation meters to receive Eto-based water use budgets annually for two reporting periods =				22.5%										
				Percent of CII accounts with mixed use or no meters offered surveys annually =				10%										

**Mid-Peninsula**  
**Table E-2. Economic Analysis Worksheets**  
**BMP 6. High-Efficiency Washing Machine Rebate Programs**

Calendar Year	Total Single-Family Units	Number of Units Accepting Rebates	Incremental Water Savings (AF/yr)	Annual Water Savings (AF/yr)	Benefits (\$)					Costs (\$)					Net Present Value (\$)
					Avoided Capital Costs	Avoided Variable Costs	Avoided Purchase Costs	Total Undiscounted Benefits	Total Discounted Benefits	Capital Costs	Financial Incentives	Operating Expenses	Total Undiscounted Costs	Total Discounted Costs	
2001	31146	311	4.9	4.9	0	2,681	0	2,681	2,681	0	15,573	7,786	23,359	23,359	-20,678
2002	31220	312	4.9	9.8	0	5,369	0	5,369	5,058	0	15,610	7,805	23,415	22,058	-17,000
2003	31293	313	4.9	14.7	0	8,063	0	8,063	7,155	0	15,647	7,823	23,470	20,829	-13,674
2004	31367	314	4.9	19.6	0	10,763	0	10,763	8,998	0	15,684	7,842	23,525	19,669	-10,670
2005	31441	314	4.9	24.5	0	13,470	0	13,470	10,609	0	15,721	7,860	23,581	18,573	-7,964
2006	31515	315	4.9	29.4	0	16,183	0	16,183	12,007	0	15,758	7,879	23,637	17,538	-5,531
2007	31590	316	4.9	34.4	0	18,902	0	18,902	13,213	0	15,795	7,897	23,692	16,561	-3,348
2008	31664	317	5.0	39.3	0	21,628	0	21,628	14,242	0	15,832	7,916	23,748	15,638	-1,396
2009	31739	317	5.0	44.3	0	24,360	0	24,360	15,112	0	15,869	7,935	23,804	14,767	345
2010	31813	318	5.0	49.3	0	27,099	0	27,099	15,837	0	15,907	7,953	23,860	13,944	1,893
2011	31889	319	5.0	54.3	0	29,844	0	29,844	16,431	0	15,944	7,972	23,916	13,167	3,263
2012	31964	320	5.0	59.3	0	32,595	0	32,595	16,906	0	15,982	7,991	23,973	12,434	4,472
2013	32040	320	5.0	59.4	0	32,672	0	32,672	15,964	0	16,020	8,010	24,030	11,741	4,223
2014	32115	321	5.0	59.5	0	32,750	0	32,750	15,075	0	16,058	8,029	24,087	11,087	3,988
2015	32191	322	5.0	59.7	0	32,827	0	32,827	14,235	0	16,096	8,048	24,143	10,469	3,765
2016	32267	323	5.1	59.8	0	32,904	0	32,904	13,442	0	16,134	8,067	24,200	9,886	3,556
2017	32343	323	5.1	60.0	0	32,982	0	32,982	12,693	0	16,172	8,086	24,258	9,335	3,358
2018	32420	324	5.1	60.1	0	33,060	0	33,060	11,986	0	16,210	8,105	24,315	8,815	3,170
2019	32496	325	5.1	60.3	0	33,138	0	33,138	11,318	0	16,248	8,124	24,372	8,324	2,994
2020	32572	326	5.1	60.4	0	33,216	0	33,216	10,687	0	16,286	8,143	24,429	7,860	2,827
<b>Totals:</b>		6,371	100	863	0	474,504	0	474,504	243,647	318,543	318,543	159,271	477,814	286,056	-42,408
								Value of conserved water (\$/AF) =	550					Benefit cost ratio:	0.9
								Discount rate (real) =	6.15%					Simple pay-back period (years):	23
								Water savings (gpy/unit) =	5,100					Discounted cost / water saved (\$/acre-feet):	332
								Amount of rebate (\$) =	50					NPV / water saved (\$/acre-feet):	550
								Cost to administer rebate (\$) =	25						
								Percent accepting rebates =	1.0%						
								Single family units in year 2000 =	31,072						
								Single family units in year 2005 =	31,441						
								Single family units in year 2010 =	31,813						
								Single family units in year 2015 =	32,191						
								Single family units in year 2020 =	32,572						

**Mid-Peninsula**  
**Table E-2. Economic Analysis Worksheets**  
**BMP 9. Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts**

Calendar Year	From BMP 9 ULFT Coverage Calculator		CII accounts surveyed				Benefits (\$)						Costs (\$)					Net Present Value (\$)					
							Incremental Savings	Annual Savings	Avoided Capital	Avoided Variable	Avoided Purchase	Total Undiscounted	Total Discounted	Capital Costs	Financial Incentives	Operating Expenses	Total Undiscounted		Total Discounted				
							(Surveys)	(Total)	Costs	Costs	Costs	Benefits	Benefits	Costs	Costs	Costs	Costs		Costs				
	No. of Installed Toilets	Annual Savings (AF/yr)	Percent Surveyed <sup>a</sup>	Commercial Interventions	Industrial Interventions	Institutional Interventions	(AF/yr)	(AF/yr)															
Pre-1999			0.0%	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0			
1999			0.25%	8.2	0.3	0.8	8.0	8.0	0	4,386	0	4,386	4,942	0	0	6,523	6,523	7,350	-2,408				
2000			0.25%	8.2	0.3	0.8	8.0	15.9	0	8,772	0	8,772	9,311	0	0	6,523	6,523	6,924	2,387				
2001	352	10.4	0.95%	31.1	1.0	3.0	30.3	56.6	0	31,143	0	31,143	31,143	0	0	69,163	69,163	69,163	-38,020				
2002	352	20.7	0.95%	31.1	1.0	3.0	30.3	97.3	0	53,514	0	53,514	50,414	0	0	69,163	69,163	65,156	-14,742				
2003	352	31.1	0.9%	29.4	0.9	2.9	28.7	128.4	0	70,622	0	70,622	62,676	0	0	67,858	67,858	60,223	2,453				
2004	352	41.5	0.9%	29.4	0.9	2.9	28.7	159.5	0	87,731	0	87,731	73,349	0	0	67,858	67,858	56,734	16,614				
2005	352	51.9	1.1%	36.0	1.1	3.5	35.1	174.7	0	96,067	0	96,067	75,665	0	0	73,077	73,077	57,557	18,108				
2006	352	62.2	1.1%	36.0	1.1	3.5	35.1	189.8	0	104,404	0	104,404	77,467	0	0	73,077	73,077	54,222	23,244				
2007	352	72.6	1.8%	58.9	1.8	5.7	57.4	228.9	0	125,898	0	125,898	88,003	0	0	91,341	91,341	63,848	24,155				
2008	352	83.0	1.8%	58.9	1.8	5.7	57.4	268.0	0	147,392	0	147,392	97,059	0	0	91,341	91,341	60,149	36,910				
2009	352	93.4						243.3	0	133,799	0	133,799	83,003	0	0	44,376	44,376	27,529	55,474				
2010	352	103.7						218.6	0	120,207	0	120,207	70,250	0	0	44,376	44,376	25,934	44,317				
2011								161.1	0	88,629	0	88,629	48,795						48,795				
2012								103.7	0	57,051	0	57,051	29,590						29,590				
2013								103.7	0	57,051	0	57,051	27,875						27,875				
2014								103.7	0	57,051	0	57,051	26,260						26,260				
2015								103.7	0	57,051	0	57,051	24,739						24,739				
2016								103.7	0	57,051	0	57,051	23,306						23,306				
2017								103.7	0	57,051	0	57,051	21,955						21,955				
2018								103.7	0	57,051	0	57,051	20,683						20,683				
2019								103.7	0	57,051	0	57,051	19,485						19,485				
2020								103.7	0	57,051	0	57,051	18,356						18,356				
<b>Totals:</b>	3,522	571	10%	327	10	32	319	2,884	0	1,586,018	0	1,586,018	984,326	0	0	704,676	704,676	554,789	429,537				
Percent surveyed from MOU, Exhibit 1.9.E(b.3)																							
Credit Table for Previously Installed Toilets												Value of conserved water (\$/AF) =		550		Benefit cost ratio:				1.8			
												Discount rate (real) =		6.15%		Simple pay-back period (years):				12			
Year	Avg. # of Installed Toilets	Incremental Water Savings (Ac-ft/yr)	Annual Water Savings (AF)	Analyst survey - Annual water savings (AF/account) =												0.83		Discounted cost / water saved (\$/acre-foot):				192	
1991	0	0	0	Analyst survey - Conservation measure unit cost (\$) =												680		NPV / water saved (\$/acre-foot):				149	
1992	0	0	0	Consultant survey - Annual water savings (AF/account) =												2.1							
1993	0	0	0	Consultant survey - Conservation measure unit cost (\$) =												1,680							
1994	0	0	0	Cost of conservation measure for ULFT replacement (\$) =												126							
1995	0	0	0	Number of commercial accounts in 1997 =												3,271							
1996	0	0	0	Number of Industrial accounts in 1997 =												100							
1997	0	0	0	Number of Institutional accounts in 1997 =												319							
1998	0	0	0	Percent units surveyed =												10%							
1999	0	0	0																				
2000	0	0	0																				
Total			0																				

**Mid-Peninsula**  
**Table E-2. Economic Analysis Worksheets**  
**BMP 9. Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts**

Credit Table for Previously Performed Surveys																					
Year	# of Surveys			% Credit	Credits																
	Commercial	Industrial	Institutional		Commercial	Industrial	Institutional														
Surveyed prior to July 1, 1996 w/follow up inspection	0	0	0	100%	0	0	0														
Surveyed prior to July 1, 1996 - have not received follow up inspection	0	0	0	50%	0	0	0														
Surveyed after July 1, 1996	0	0	0	100%	0	0	0														
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>														
Enter CII Toilet Census Results																					
				Annual Savings (gpd)																	
CII Subsector	Unadjusted Toilet Count	Adjusted Toilet Count	Savings Per ULFT (gpd)	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total							
Hotels/Motels	1,980	1,550	16	23,806	22,854	21,939	21,062	20,219	19,411	18,634	17,889	17,173	16,486	199,474							
Eating and Drinking	537	420	47	18,966	18,207	17,479	16,780	16,109	15,464	14,846	14,252	13,682	13,134	158,918							
Health Services	2,092	1,638	21	33,013	31,692	30,424	29,207	28,039	26,918	25,841	24,807	23,815	22,862	276,619							
Offices	6,211	4,862	20	93,345	89,611	86,027	82,586	79,282	76,111	73,066	70,144	67,338	64,644	782,153							
Retail/Wholesale	5,773	4,519	40	173,524	166,583	159,920	153,523	147,382	141,487	135,827	130,394	125,179	120,171	1,453,992							
Other	1,531	1,198	18	20,708	19,880	19,085	18,321	17,589	16,885	16,210	15,561	14,939	14,341	173,519							
Industrial	1,006	787	23	17,387	16,692	16,024	15,383	14,768	14,177	13,610	13,065	12,543	12,041	145,689							
Churches	333	261	28	7,006	6,726	6,457	6,199	5,951	5,713	5,484	5,265	5,054	4,852	58,709							
Gov't	472	369	25	8,867	8,512	8,172	7,845	7,531	7,230	6,941	6,663	6,397	6,141	74,299							
Schools K-12	574	449	20	8,627	8,282	7,950	7,632	7,327	7,034	6,753	6,482	6,223	5,974	72,284							
<b>Total</b>	<b>20,509</b>	<b>16,054</b>	<b>258</b>	<b>405,249</b>	<b>389,039</b>	<b>373,477</b>	<b>358,538</b>	<b>344,197</b>	<b>330,429</b>	<b>317,212</b>	<b>304,523</b>	<b>292,342</b>	<b>280,649</b>	<b>3,395,655</b>							
Estimated Rate of CII Toilet Turnover (percent of remaining stock per year)	0.04																				
Average Savings per toilet (gpd)	26.30																				
Coverage requirement is 15 percent of Total Savings Potential:																					
(gpd)	(ac-ft)																				
509,348	571																				

**Mid-Peninsula**  
**Table E-2. Economic Analysis Worksheets**  
**BMP 14. Residential ULFT Replacement Programs (3 pages)**

Determination of Water Conservation Goal: Single-Family Units											
Calendar Year	Single-Family Units	SF Units Naturally Retrofitted	SF Toilets Naturally Retrofitted	Water Savings from Natural Replacement SF (AF/yr)	Single-Family Units	SF Units Naturally Retrofitted	Single-Family Turnover	Combined SF Homes Retrofitted	Combined SF Toilets Retrofitted	Water Savings from Natural Replacement and Turnover SF (AF/yr)	Water Savings from Turnover SF (AF/yr)
1998	22,859	0	0	0.0	22,859	0	0	0	0	0.0	0.0
1999	21,945	914	1,554	38.7	20,879	914	1,065	1,980	3,365	83.8	45.1
2000	21,067	878	1,492	37.2	19,071	835	973	1,808	3,074	76.6	39.4
2001	20,224	843	1,433	35.7	17,420	763	889	1,652	2,808	69.9	34.3
2002	19,415	809	1,375	34.3	15,911	697	812	1,509	2,565	63.9	29.6
2003	18,639	777	1,320	32.9	14,533	636	741	1,378	2,342	58.3	25.5
2004	17,893	746	1,267	31.6	13,275	581	677	1,259	2,140	53.3	21.7
2005	17,177	716	1,217	30.3	12,125	531	619	1,150	1,954	48.7	18.4
2006	16,490	687	1,168	29.1	11,075	485	565	1,050	1,785	44.5	15.4
2007	15,831	660	1,121	27.9	10,116	443	516	959	1,630	40.6	12.7
2008	15,197	633	1,076	26.8	9,240	405	471	876	1,489	37.1	10.3
2009	14,590	608	1,033	25.7	8,440	370	431	800	1,360	33.9	8.1
2010	14,006	584	992	24.7	7,709	338	393	731	1,242	30.9	6.2
2011	13,446	560	952	23.7	7,041	308	359	668	1,135	28.3	4.5
2012	12,908	538	914	22.8	6,431	282	328	610	1,037	25.8	3.0
2013	12,392	516	878	21.9	5,875	257	300	557	947	23.6	1.7
2014	11,896	496	843	21.0	5,366	235	274	509	865	21.5	0.6
2015	11,420	476	809	20.1	4,901	215	250	465	790	19.7	0.0
2016	10,963	457	777	19.3	4,477	196	228	424	722	18.0	0.0
2017	10,525	439	746	18.6	4,089	179	209	388	659	16.4	0.0
2018	10,104	421	716	17.8	3,735	164	191	354	602	15.0	0.0
2019	9,700	404	687	17.1	3,411	149	174	323	550	13.7	0.0
2020	9,312	388	660	16.4	3,116	136	159	295	502	12.5	0.0
<b>Totals:</b>											
Credit Table for Previously Installed ULF Toilets											
Year	Avg. # of Installed Toilets		Incremental Water Savings (Ac-ft/yr)	Annual Water Savings (Ac-ft/yr)							
	Single Family	Multi-family									
1991	0	0	0	0							
1992	0	0	0	0							
1993	0	0	0	0							
1994	0	0	0	0							
1995	0	0	0	0							
1996	0	0	0	0							
1997	19	18	1	1							
1998	0	0	0	1							
1999	0	0	0	1							
2000	0	0	0	1							
	19	18		5							



**Mid-Peninsula**  
**Table E-2. Economic Analysis Worksheets**  
**BMP 14. Residential ULFT Replacement Programs (3 pages)**

Calendar Year	Water Savings from ULFT Replacement Program						Benefits (\$)					Costs (\$)					Net Present Value (\$)	
	No. of SF Toilets Required to be Replaced	Incremental <sup>a</sup>	No. of MF Toilets Required to be Replaced	Incremental <sup>a</sup>	Annual <sup>b</sup>	Cummulative <sup>c</sup>	Avoided Capital Costs	Avoided Variable Costs	Avoided Purchase Costs	Total Undiscounted Benefits	Total Discounted Benefits	Capital Costs	Financial Incentives	Operating Expenses	Total Undiscounted Costs	Total Discounted Costs		
		Water Savings SF (AF/yr)		Water Savings MF (AF/yr)	Water Savings (AF/yr)	Water Savings (AF/yr)	Water Savings (AF/yr)											
Pre-2001	19	0	18	1	1	5	0	0	0	0	0	0	0	0	0	0		
2001	1,500	37	500	19	57	62	0	31,511	0	31,511	31,511	0	0	252,000	252,000	252,000	-220,489	
2002	1,500	37	500	19	113	175	0	62,390	0	62,390	58,775	0	0	252,000	252,000	237,400	-178,625	
2003	1,500	37	500	19	170	345	0	93,268	0	93,268	82,774	0	0	252,000	252,000	223,646	-140,871	
2004	1,500	37	500	19	226	571	0	124,147	0	124,147	103,795	0	0	252,000	252,000	210,688	-106,893	
2005	1,500	37	500	19	282	852	0	155,026	0	155,026	122,103	0	0	252,000	252,000	198,482	-76,379	
2006	1,500	37	500	19	338	1,191	0	185,905	0	185,905	137,940	0	0	252,000	252,000	186,982	-49,042	
2007	1,500	37	500	19	394	1,585	0	216,784	0	216,784	151,533	0	0	252,000	252,000	176,149	-24,616	
2008	1,500	37	500	19	450	2,035	0	247,662	0	247,662	163,087	0	0	252,000	252,000	165,944	-2,856	
2009					450	2,485	0	247,662	0	247,662	153,639	0	0	0	0	0	153,639	
2010					450	2,936	0	247,662	0	247,662	144,737	0	0	0	0	0	144,737	
2011					450	3,386	0	247,662	0	247,662	136,352	0	0	0	0	0	136,352	
2012					450	3,836	0	247,662	0	247,662	128,452	0	0	0	0	0	128,452	
2013					450	4,286	0	247,662	0	247,662	121,010	0	0	0	0	0	121,010	
2014					450	4,737	0	247,662	0	247,662	113,999	0	0	0	0	0	113,999	
2015					450	5,187	0	247,662	0	247,662	107,394	0	0	0	0	0	107,394	
2016					450	5,637	0	247,662	0	247,662	101,172	0	0	0	0	0	101,172	
2017					450	6,088	0	247,662	0	247,662	95,310	0	0	0	0	0	95,310	
2018					450	6,538	0	247,662	0	247,662	89,788	0	0	0	0	0	89,788	
2019					450	6,988	0	247,662	0	247,662	84,586	0	0	0	0	0	84,586	
2020					450	7,438	0	247,662	0	247,662	79,686	0	0	0	0	0	79,686	
	12,000		4,000		7,435		0	4,088,642	0	4,088,642	2,207,642	0	0	2,016,000	2,016,000	1,651,291	556,351	
<sup>a</sup> Incremental Water Savings is water savings from replaced toilets during corresponding year only.															Benefit cost ratio:		<b>1.3</b>	
<sup>b</sup> Annual Water Savings is water savings from all replaced toilets through corresponding year.															Simple pay-back period (years):		<b>15</b>	
<sup>c</sup> Cummulative Water Savings is running total of water saved through corresponding year. "Cummulative Water Savings" must match "Cummulative Water Savings from Turnover" within 10% each reporting period through 2008.															Discounted cost / water saved (\$/acre-foot):		<b>222</b>	
															NPV / water saved (\$/acre-foot):		<b>74.8</b>	