

## San Francisco Public Utilities Commission

### Wholesale Customer Water Conservation Potential Technical Report

*Prepared by:*

URS Corporation—Oakland, California

Maddaus Water Management—Alamo, California

Jordan Jones & Goulding—Norcross, Georgia

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**URS**



**JORDAN  
JONES &  
GOULDING**

# TABLE OF CONTENTS

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|                  |  |             |
|------------------|--|-------------|
| <b>Section</b>   | <b>Executive Summary .....</b>   | <b>ES-1</b> |
| <b>Section 1</b> | <b>Introduction.....</b>   | <b>1-1</b>  |
|                  | 1.1 Purpose of Study .....   | 1-1         |
|                  | 1.2 Overview of SFPUC and Wholesale Customers .....                                  | 1-2         |
|                  | 1.3 Approach to Conservation Evaluation .....  | 1-3         |
| <b>Section 2</b> | <b>Selection of Conservation Measures .....</b>                                      | <b>2-1</b>  |
|                  | 2.1 Introduction.....  | 2-1         |
|                  | 2.2 Initial Conservation Measures Considered .....                                   | 2-1         |
|                  | 2.2.1 Wholesale Customers Current Conservation Practices.....                        | 2-1         |
|                  | 2.2.2 Initial List of Conservation Measures.....                                     | 2-3         |
|                  | 2.3 Measure Screening Process.....   | 2-3         |
|                  | 2.4 Measures Selected for Further Evaluation .....                                   | 2-9         |
| <b>Section 3</b> | <b>Evaluation of Conservation Measures.....</b>                                      | <b>3-1</b>  |
|                  | 3.1 Introduction.....  | 3-1         |
|                  | 3.2 Wholesale Customer Service Area Data.....  | 3-1         |
|                  | 3.3 Conservation Measure Assumptions.....  | 3-1         |
|                  | 3.3.1 Targeted Water Use .....   | 3-2         |
|                  | 3.3.2 Market Penetration Goal .....  | 3-2         |
|                  | 3.3.3 Conservation Measure Water Savings .....                                       | 3-6         |
|                  | 3.3.4 Conservation Measure Length: Length of Time the<br>Measure Is Implemented..... | 3-6         |
|                  | 3.3.5 Conservation Measure Life: Length of Time Water Savings<br>Last.....           | 3-6         |
|                  | 3.3.6 Costs of Conservation Measures.....  | 3-7         |
|                  | 3.3.7 Water Savings Decay.....   | 3-8         |
|                  | 3.4 DSS Model Conservation Evaluation .....  | 3-9         |
|                  | 3.4.1 DSS Model Overview.....  | 3-9         |
|                  | 3.4.2 Structure of DSS Model Conservation Evaluation .....                           | 3-10        |
|                  | 3.4.3 Analyzing Benefits and Costs.....  | 3-17        |
| <b>Section 4</b> | <b>Wholesale Customer Conservation Program Development .....</b>                     | <b>4-1</b>  |
|                  | 4.1 Introduction.....  | 4-1         |
|                  | 4.2 Development of Potential Wholesale Customer Conservation<br>Programs .....       | 4-1         |
|                  | 4.2.1 Definition of Conservation Programs .....                                      | 4-2         |
|                  | 4.2.2 Selection of Measures for Program A.....                                       | 4-3         |
|                  | 4.2.3 Selection of Measures for Programs B and C.....                                | 4-3         |

# TABLE OF CONTENTS

---

|                  |   |            |
|------------------|---|------------|
| <b>Section 5</b> | <b>SFPUC Wholesale Customer Service Area Conservation Evaluation Results.....</b> | <b>5-1</b> |
| 5.1              | Introduction.....   | 5-1        |
| 5.2              | Benefit-Cost Analysis of Wholesale Customer Programs.....                         | 5-1        |
| 5.3              | Conservation Evaluation Results.....  | 5-4        |
| 5.4              | Concurrence Process.....  | 5-5        |
|                  | 5.4.1 Workshops and One-On-One Meetings.....                                      | 5-5        |
| <b>Section 6</b> | <b>References.....</b>  | <b>6-1</b> |

## List of Tables, Figures and Appendices

---

| <b>Tables</b>     |  | <b>Page</b> |
|-------------------|--|-------------|
| Table ES-1        | Program-Specific Conservation Evaluation Results for SFPUC Wholesale Customer Service Area.....          | ES-3        |
| Table 1-1         | SFPUC Wholesale Customers.....   | 1-2         |
| Table 2-1         | Initial List of Conservation Measures .....  | 2-5         |
| Table 2-2         | Description of Conservation Measures Selected for Further Evaluation .....                               | 2-10        |
| Table 3-1         | Data Collected to Establish Market Potential for Conservation Measures .....                             | 3-3         |
| Table 3-2         | Conservation Measure Variables .....   | 3-11        |
| Table 3-3         | Summary of SFPUC Conservation Evaluation Results by Measure (example wholesale customer) .....           | 3-18        |
| Table 3-4         | SFPUC Cost of Water Schedule 2003–2015.....  | 3-21        |
| Table 5-1         | Conservation Savings as a Percentage of Total New Demand by SFPUC Wholesale Customer .....               | 5-2         |
| Table 5-2         | Program Specific Conservation Evaluation Results by SFPUC Wholesale Customer .....                       | 5-3         |
| Table 5-3         | Program-Specific Conservation Evaluation Results for SFPUC Wholesale Customer Service Area.....          | 5-4         |
| Table 5-4         | Conservation Savings as a Percentage of Total New Demand for SFPUC Wholesale Customer Service Area ..... | 5-4         |
| Table A-1         | Current Conservation BMPs Being Implemented by SFPUC Wholesale Customers FY 2004/2005.....               | A-8         |
| Table B-1         | Scoring Guidelines Used to Rate Measures .....   | B-2         |
| Table B-2         | Results of Screening Potential Conservation Measures for SFPUC Wholesale Customers .....                 | B-3         |
| <b>Figures</b>    |  | <b>Page</b> |
| Figure 1-1        | SFPUC Wholesale Customer Service Area .....  | 1-5         |
| Figure 4-1        | Present Value of Utility Costs versus Water Saved (30-Year Analysis) (example customer).....             | 4-2         |
| <b>Appendices</b> |  |             |
| Appendix A        | Wholesale Customer Service Area Descriptions and Their Current Water Conservation Programs               |             |
| Appendix B        | Description of Potential Water Conservation Measures Screened for SFPUC Wholesale Area                   |             |
| Appendix C        | Additional Assumptions for Evaluation of DSS Conservation Measures                                       |             |

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## List of Tables, Figures and Appendices

Appendix D SFPUC Wholesale Customer Conservation Information  
*Each Sub-appendix contains the following tables:*  
-Results of Conservation Measures Evaluation  
-Summary of Current Conservation Programs  
-Summary of Conservation Measures Selected in DSS Conservation Programs  
-Present Value of Utility Costs versus Water Saved

| <b>Sub-appendix Number</b> | <b>Wholesale Customer</b>                                      |
|----------------------------|--|
| D1                         | Alameda County Water District                                  |
| D2                         | Brisbane, City of  |
| D3                         | Burlingame, City of  |
| D4                         | California Water Service Company- Bear Gulch District          |
| D5                         | California Water Service Company- Mid Peninsula District       |
| D6                         | California Water Service Company- South San Francisco District |
| D7                         | Coastside County Water District                                |
| D8                         | Daly City, City of   |
| D9                         | East Palo Alto, City of  |
| D10                        | Estero Municipal Improvement District/Foster City              |
| D11                        | Guadalupe Valley Municipal Improvement District                |
| D12                        | Hayward, City of   |
| D13                        | Hillsborough, Town of  |
| D14                        | Los Trancos County Water District                              |
| D15                        | Menlo Park, City of  |
| D16                        | Mid-Peninsula Water District                                   |
| D17                        | Millbrae, City of  |
| D18                        | Milpitas, City of  |
| D19                        | Mountain View, City of   |
| D20                        | North Coast County Water District                              |
| D21                        | Palo Alto, City of   |
| D22                        | Purissima Hills Water District                                 |
| D23                        | Redwood City, City of  |
| D24                        | San Bruno, City of   |
| D25                        | San Jose, City of  |
| D26                        | Santa Clara, City of   |
| D27                        | Skyline County Water District                                  |
| D28                        | Stanford University  |
| D29                        | Sunnyvale, City of   |
| D30                        | Westborough Water District                                     |

|        |  |
|--------|--|
| 6/3    | Dual Flush   |
| ACWD   | Alameda County Water District  |
| AWWARF | American Water Works Association Research Foundation                       |
| BAWSCA | Bay Area Water Supply and Conservation Agency                              |
| BAWUA  | Bay Area Water Users Association   |
| BMP    | Best Management Practice   |
| CII    | Commercial, Industrial, Institutional                                      |
| CIP    | Capital Improvement Project  |
| CUWCC  | California Urban Water Conservation Council                                |
| CWS    | California Water Service (Company)   |
| DSS    | Demand Side Management Least-Cost Planning Decision Support System (model) |
| ET     | Evapotranspiration   |
| gpd    | gallon(s) per day  |
| gpm    | gallon(s) per minute   |
| MGD    | million gallons per day  |
| MID    | Municipal Improvement District   |
| MOU    | Memorandum of Understanding  |
| PUB    | Public   |
| RSF    | Single-Family Residential  |
| RMF    | Multi-Family Residential   |
| SFPUC  | San Francisco Public Utilities Commission                                  |
| UFW    | Unaccounted-for-Water  |
| US EPA | United States Environmental Protection Agency                              |
| UWMP   | Urban Water Management Plan  |
| WD     | Water District   |
| WMP    | Water Master Plan  |

|  |  |
|--|--|
| <b>“30-year” annual average water savings</b>                  | “30-year” annual average water savings represents the water savings for implementing a conservation measure averaged over the 30-year analysis period.   |
| <b>2001 DSS base year water demand</b>                         | Estimated 2001 DSS base-year water demand developed during the SFPUC Wholesale Customer Water Demand Projections Study.  |
| <b>2030 demand increase (new demand) from 2001</b>             | The difference between water demand in 2001 and 2030. Calculated by subtracting the 2001 demand from the 2030 demand.  |
| <b>2030 DSS projected water demand</b>                         | Projected DSS water demand for the year 2030 developed during the SFPUC Wholesale Customer Water Demand Projections Study.   |
| <b>2030 outdoor water savings due to conservation programs</b> | The amount of outdoor water savings in the year 2030 achieved due to the implementation of a conservation program.   |
| <b>2030 water savings due to conservation programs</b>         | The amount of water saved in the year 2030 due to the implementation of a conservation program.  |
| <b>Account</b>   | Used by water suppliers to bill for water use measured by a water meter for retail customers; one account per meter.   |
| <b>Average gal/day/acct</b>                                    | The amount of water in gallons that is used per day per account and averaged over a period of time (year, month, etc.).  |
| <b>Base year</b>   | The starting year for the water demand analysis; the year used to establish initial conditions. The base year for this study is 2001.  |
| <b>Census 2000</b>   | Data provided by the United States Census Bureau. Census 2000 data (U.S. Census Bureau 2002) were used as a resource to obtain population, household sizes, dwelling units by building type, and age of structures for each individual city and unincorporated areas serviced by the water agencies (wholesale customers). |
| <b>Consumption by customer class</b>                           | Annual amount of water used and billed by each customer class or category (Single-Family Residential, Multi-Family Residential, Commercial, Industrial, etc.)  |
| <b>Cost of water saved</b>                                     | Cost of water saved is calculated by taking the present value of the water utility costs and dividing by the cumulative amount of water saved over the 30-year analysis period. We express it as \$/MG or \$/AF.   |
| <b>Cost-effective</b>  | For purposes of this study, the definition of cost-effective is being less expensive than the water in 2015. For water purchased from SFPUC, that cost is \$1076/AF.   |

|                                      |  |
|--------------------------------------|--|
| <b>Customer class</b>                | Customer-billing category specific to the types of retail customer (Single-Family Residential, Multi-Family Residential, Commercial, Industrial, etc.)   |
| <b>Customer unit cost</b>            | Customer costs represent the customer's share of the cost to implement the measure. For example, if the rebate on a clothes washer only covers one-third of the cost difference to purchase an efficient model that is eligible for the rebate, then the customer's cost is the difference required for the purchase and installation.   |
| <b>Customer-billing category</b>     | A designation used by water agencies to categorize groups of water users in a billing system. Common customer-billing categories include Single-Family Residential, Multi-Family Residential, Commercial, and Industrial.  |
| <b>DSS model</b>                     | Demand Side Management Least-Cost Planning Decision Support System (DSS) model; an end-use model used to develop water demand projections for this study. The end-use model approach uses growth in number of accounts and a complete breakdown of water uses by customer-billing category ("end uses") to forecast water demands.   |
| <b>End use</b>                       | The ultimate use of the water; can be a fixture, appliance, or other category of water use within an account.  |
| <b>Evapotranspiration</b>            | Loss of water from soil both by evaporation and by transpiration from the plants growing thereon.  |
| <b>First five years utility cost</b> | First five years utility cost is the cost (sum of the actual costs) to the utility of implementing the conservation measure during the first five years of the measure.  |
| <b>Fixture</b>                       | Any plumbing device in homes or businesses using water such as toilets, showers, or faucets.   |
| <b>Implementable</b>                 | For purposes of this study, an implementable conservation measure is a measure that an individual wholesale customer believes can be funded and implemented with success in its service area. An implementable program is a program that consists of a number of measures that can be run concurrently by the individual wholesale customer, can be financed concurrently by an individual wholesale customer, and can be implemented successfully in the customer's service area. |
| <b>Indoor water use</b>              | The amount of water used indoors in an account for uses such as toilets, laundry, showers, faucets, dishwashers, etc.  |



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|---|--|
| <b>Market penetration goal</b>              | The market penetration goal for a measure is the extent to which the product or service related to the conservation measure occupies the potential market. This is also sometimes referred to as the installation rate goal. The market penetration goal is often expressed in terms of the number of fixtures, rebates, surveys, etc., offered or conducted per year.   |
| <b>Measure life</b>                         | The measure life is how long the water savings from implementing a measure can be expected to last. Measure life is expressed in terms of years. In general there are two categories of measure life (1) those measures that have a “permanent life” and (2) those measures that have a “finite life.” Measures with a permanent life include those measures whose water savings essentially last forever. Measures with a finite life experience water savings that decay or are reduced over time. |
| <b>Measure water savings</b>                | Water savings for each conservation measure are considered in terms of end-use water reductions. To determine how much water is saved from implementing each conservation measure, water reductions are applied to the specific end use targeted by the conservation measure and are expressed as a percent reduction in water use per end use.  |
| <b>Multi-Family Residential</b>             | Residential customer class including more than one dwelling unit on a single meter, such as condominiums or apartment buildings.   |
| <b>Net utility benefit</b>                  | Net utility benefit is the present value of the utility benefits less the present value of the utility costs. Measures with benefit-cost ratios less than 1.0 have a negative net utility benefit.   |
| <b>Outdoor water use</b>                    | The amount of water used outdoors in an account for uses such as irrigation and car washing.   |
| <b>Per-capita use</b>                       | Water use per person.  |
| <b>Present value of water-utility costs</b> | The present value of the total utility cost of implementing a measure over the 30-year analysis period   |
| <b>Program length</b>                       | The measure length is the amount of time the measure must be implemented in order to achieve the market penetration goal. Measure length is expressed in terms of years. Some measures are intended to run indefinitely to reach the market penetration or maintain the water savings associated with the market penetration goal.   |
| <b>Reasonable</b>                           | For the purposes of this study, a reasonable range of conservation potential represents the range of water savings that seems achievable based on service area water use characteristics, retail customer behavioral patterns, budgetary consideration, and ease of implementation within the individual wholesale customer service area.  |

|  |  |
|--|--|
| <b>Recycled water</b>                                    | Treated water available for nonpotable reuse.  |
| <b>Single-Family Residential</b>                         | Residential customer class including single-family dwelling units.   |
| <b>Target water user group</b>                           | Targeted water user groups could include Single-Family Residential (RSF); Multi-Family Residential (RMF); Commercial, Industrial, and Institutional (CII); and public (PUB). Measures may apply to more than one water user group.   |
| <b>Total potential 2030 water savings</b>                | The potential water savings in the year 2030 due to the plumbing code and implementing conservation programs.  |
| <b>Total utility-customer benefit-cost ratio</b>         | Total utility-customer benefit-cost ratio is calculated by taking the present value of the water saved plus reduced retail customer energy costs (present value of utility water benefits and customer energy benefits <i>based on water's projected value in the year 2015</i> ) divided by the present value of the total utility and retail customer costs of implementing a measure over its life                    |
| <b>Unaccounted-for-water (UFW)</b>                       | The mathematical difference between amount of water produced in a system and water billed to customers (water consumed). This water is often referred to as “lost” water and includes water delivery system leaks and water not billed or tracked in the system (i.e., water used for flushing water system pipelines, fire fighting).   |
| <b>Utility administration and marketing costs</b>        | Utility costs also include an administrative cost that covers the cost to the utility of the staff administering the measure. The administrative cost often includes consultant contract administration, marketing and participant tracking. The administrative cost is expressed as a percentage of the cost of the utility unit cost (rebate, incentive, or consultant cost per participant) to implement the measure. |
| <b>Utility unit cost</b>                                 | Utility unit costs include the costs of rebates and incentives and contractors hired to implement measures. Utility unit costs exclude administrative costs.   |
| <b>Water consumed</b>                                    | Water billed to retail customers in a wholesale customer service area.   |
| <b>Water demand projections</b>                          | Estimates of water demands for the future based on applying a projection (or growth forecast) to an established base-year value.   |
| <b>Water produced</b>                                    | Water produced is the total of water consumed plus UFW. This includes water purchased from others (such as SFPUC), groundwater, or other sources.  |
| <b>Water purchased</b>                                   | Same as water produced for agencies with a single source of water, such as those who buy all their water from SFPUC.   |
| <b>Water savings as a percentage of total new demand</b> | The water savings due to conservation programs taken as a percentage of the 2030 total new demand (demand increase from 2001 to 2030).   |

|   |  |
|---|--|
| <b>Water savings decay</b>              | Water savings decay is the reversal of the water use reductions achieved through implementing a conservation measure. Water savings decay occurs in two ways: (1) as a result of an end user's behavioral change and (2) as a result of a fixture's loss of water use efficiency.                          |
| <b>Water utility benefit-cost ratio</b> | Water utility benefit-cost ratio is calculated by taking the present value of the water saved (present value of the benefits <i>based on water's projected value in the year 2015</i> ) divided by the present value of the total utility cost of implementing a measure over the 30-year analysis period. |
| <b>Wholesale customer</b>               | Water agency purchasing water from SFPUC for distribution to retail customers in their service area.   |

### INTRODUCTION

In spring 2004, the San Francisco Public Utilities Commission (SFPUC), in conjunction with its 28 wholesale customers, embarked on a comprehensive study to assess the potential for water conservation savings in the SFPUC's wholesale customers' service area. The Bay Area Water Supply and Conservation Agency (BAWSCA)<sup>1</sup> had an active role throughout this study in coordinating the efforts of the wholesale customers with the SFPUC and its consultant team to ensure overall project integrity. This report documents the methodology used in the study and the resulting water conservation potential.

This water conservation potential report is a companion document to other technical memoranda and reports that document water demand projections and ranges for potential recycled water in the wholesale and retail service areas, as well as estimates of future SFPUC purchases:

- *SFPUC Wholesale Customer Water Demand Projections* (URS 2004)
- *SFPUC Wholesale Customer Recycled Water Potential* (RMC 2004)
- *SFPUC Wholesale Customer Water Purchase Estimates* (SFPUC 2004)
- *City and County of San Francisco Retail Water Demands and Conservation Potential* (SFPUC 2004)

### WATER CONSERVATION EVALUATION METHODOLOGY

The SFPUC employed the Demand Side Management Least-Cost Planning Decision Support System (DSS) model in determining water conservation potential in the wholesale customer service area. The DSS model is an "end-use model" that was also used to develop water demand projections to year 2030 for each wholesale customer. For the conservation potential evaluation, the DSS model was specifically used to evaluate the cost-effectiveness of implementing 32 conservation measures over a 30-year planning period for the 28 wholesale customers.

An initial list of 75 conservation measures was screened using qualitative criteria related to the following:

- Does the product (water-using fixture) work well and is it readily available?
- Would the measure have widespread application in the Bay Area?
- Will the retail customer participate in the measure or use the product and is it fair how the measure is applied throughout the service area among the different customer types?
- Among similar measures that accomplish the same thing, is this measure the best way to save water?

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<sup>1</sup> The Bay Area Water Supply and Conservation Agency (BAWSCA) was created to represent the interests of 26 cities and water districts, and two private utilities, in Alameda, Santa Clara and San Mateo counties that purchase water on a wholesale basis from the San Francisco regional water system. BAWSCA is the only entity having the authority to directly represent the needs of the cities, water districts and private utilities (wholesale customers) that depend on the regional water system (BAWSCA website).

Thirty-two measures passed the initial screening. The market potential, costs, and benefits<sup>2</sup> were identified for these 32 conservation measures. A benefit-cost analysis was conducted to evaluate the cost-effectiveness<sup>3</sup> of each individual conservation measure for each wholesale customer. Using the results of a benefit-cost analysis for each conservation measure, and considering other factors such as service area water use characteristics, retail customer behavioral patterns, budgetary consideration, and relative ease of implementation for each conservation measure, three packages of measures were selected by each wholesale customer to develop Programs A, B, and C. In general, Program A represents the conservation measures from the list of 32 measures currently being implemented by the wholesale customers. Program B includes the Program A measures plus the additional measures determined to be most implementable<sup>4</sup> by the wholesale customers. Program C includes all the measures included in Programs A and B plus the additional measures that represent the full extent of measures that appear to be implementable, and cost-effective. Together, the three programs represent a reasonable<sup>5</sup> range of conservation potential for long-range planning purposes. A benefit-cost analysis was conducted for each of the three conservation programs to indicate program cost-effectiveness.

### WATER CONSERVATION POTENTIAL

Table ES-1 presents the results of the cost-effectiveness analysis for the wholesale customer service area. Results are provided for the range of conservation potential represented by Programs A, B, and C. The range of conservation potential reflects a potential water savings associated with packages of specific conservation measures chosen by the individual wholesale customers that are considered implementable in their individual service areas. The table also includes an estimate of the savings associated with the effects of the plumbing code changes that result in more water-efficient toilets, showerheads, and clothes washers. Table ES-1 provides the total potential water savings in the year 2030 (including the plumbing code savings) if the programs were implemented by the individual wholesale customers. The results presented in Table ES-1 do not necessarily represent water savings to the SFPUC regional water system because several SFPUC wholesale customers meet water demands through multiple sources of supply.

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<sup>2</sup> For purposes of this study, costs factored into the analysis include the cost to the utility and its retail customers for implementing conservation measures. Benefits evaluated in the study include reduced energy costs to the retail customer from reduction in hot water use and the avoided cost of water to the utility.

<sup>3</sup> For purposes of this study, the definition of cost-effective is being less expensive than the projected cost of water in 2015. For water purchased from the SFPUC, that cost is \$1076/AF.

<sup>4</sup> An implementable conservation measure is a measure that an individual wholesale customer believes can be funded and implemented with success in its service area. An implementable program is a program that consists of a number of measures that can be run concurrently by the individual wholesale customer, can be financed concurrently by an individual wholesale customer, and can be implemented successfully in that wholesale customer's service area.

<sup>5</sup> For the purposes of this study, a reasonable range of conservation potential represents a range of water savings that seems achievable based on service area water use characteristics, retail customer behavioral patterns, budgetary consideration, and ease of implementation within the individual wholesale customer service area.

**Table ES-1  
Program-Specific Conservation Evaluation Results for  
SFPUC Wholesale Customer Service Area**

| <b>SFPUC Wholesale Customer Area Conservation Program</b> | <b>Water Utility Benefit-Cost Ratio (30-Year Period)</b> | <b>Present Value of Water Utility Costs (\$1,000) (30-Year Period)</b> | <b>2030 Water Savings due to Conservation Programs (MGD)</b> | <b>2030 Outdoor Water Savings due to Conservation Programs (MGD)</b> | <b>Cost of Water Saved (\$/AF) (30-Year Period)</b> | <b>Total Potential 2030 Water Savings (MGD)</b> |
|---|--|--|--|--|---|---|
| (Plumbing Code) <sup>1</sup>                              | NA   | NA   | -  | NA   | NA  | 25.4  |
| Program A   | 1.95   | \$62,601   | 7.65   | 3.52   | \$280   | 33.1 <sup>2</sup>                               |
| Program B   | 2.35   | \$93,385   | 14.53  | 7.77   | \$235   | 40.0 <sup>3</sup>                               |
| Program C   | 2.50   | \$117,866  | 19.59  | 10.56  | \$226   | 45.0 <sup>4</sup>                               |

*Source: DSS Models*

<sup>1</sup>Plumbing code savings represent water use savings associated with the natural replacement of plumbing fixtures with water-efficient models (i.e., toilets, showerheads, or washing machines).

<sup>2</sup>Includes plumbing code savings and Program A savings.

<sup>3</sup>Includes plumbing code savings and Programs A and B savings.

<sup>4</sup>Includes plumbing code savings and Programs A, B, and C savings.

## 1.1 PURPOSE OF STUDY

This report documents the methodology and results of a water conservation potential study conducted under the direction of the San Francisco Public Utilities Commission (SFPUC) in conjunction with its 28 wholesale customers. The results of this study include the identification of three potential conservation programs for each wholesale customer that represent a reasonable range of conservation potential. The wholesale customers concurred in writing that they reviewed the estimated water savings resulting from the conservation analysis and, to the best of their knowledge, considered the water savings estimate to reflect a reasonable<sup>6</sup> range of potential water conservation savings for long-range planning purposes.

The Bay Area Water Supply and Conservation Agency (BAWSCA)<sup>7</sup> had an active role throughout this project in coordinating the efforts of the wholesale customers with the SFPUC and its consultant team to ensure overall project integrity. The study used an end-use demand model called the Demand Side Management Least-Cost Planning Decision Support System (DSS) model (Maddaus 2003) to evaluate the cost-effectiveness of 32 water conservation measures for each of the SFPUC's wholesale customers. The DSS model was also used to project total water demand to 2030 for the SFPUC wholesale customer service area as documented in a technical report *SFPUC Wholesale Customer Water Demand Projections* (URS 2004). The demand projections study established base-year (2001) conditions and wholesale customer service area demographics that were used as a baseline for this study. The DSS model prepared for each individual wholesale customer for the demand projections study was used to evaluate water conservation potential as described in this technical report.

Retail and wholesale demand and conservation studies were conducted in an effort to comprehensively assess future demand on the SFPUC regional water system. The SFPUC is currently implementing a capital improvement program (CIP) to improve the reliability of the SFPUC system and reduce its risk of failure. The CIP includes several projects to repair and replace existing transmission and storage facilities in the regional water system. These facilities are critical to providing a reliable water supply to the SFPUC's retail and wholesale customer service areas. Understanding the future demands on the regional water system is an important aspect of improving the system's reliability.

This water conservation potential report is a companion document to other technical memoranda and reports that document water demand projections and ranges for potential recycled water in the wholesale and retail service areas as well as estimates of future SFPUC purchases:

- *SFPUC Wholesale Customer Water Demand Projections* (URS 2004)

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<sup>6</sup> For the purposes of this study, a reasonable range of conservation potential represents a range of water savings that seems achievable based on service area water use characteristics, retail customer behavioral patterns, budgetary consideration, and ease of implementation within the individual wholesale customer service area.

<sup>7</sup> The Bay Area Water Supply and Conservation Agency (BAWSCA) was created to represent the interests of 26 cities and water districts, and two private utilities, in Alameda, Santa Clara and San Mateo counties that purchase water on a wholesale basis from the San Francisco regional water system. BAWSCA is the only entity having the authority to directly represent the needs of the cities, water districts and private utilities (wholesale customers) that depend on the regional water system (BAWSCA website).

- *SFPUC Wholesale Customer Recycled Water Potential* (RMC 2004)
- *SFPUC Wholesale Customer Water Purchase Estimates* (SFPUC 2004)
- *City and County of San Francisco Retail Water Demands and Conservation Potential* (SFPUC 2004)

**1.2 OVERVIEW OF SFPUC AND WHOLESALE CUSTOMERS**

The SFPUC is a department of the City and County of San Francisco (City) that provides water, wastewater services, and municipal power to the City. Under contractual agreements, 28 wholesale water agencies in Alameda, San Mateo, and Santa Clara Counties also purchase water supplies from the SFPUC. The 28 wholesale customers comprise BAWSCA.<sup>8</sup> Table 1-1 lists the 28 wholesale customers that purchase water from San Francisco. About 32 percent of the SFPUC’s water supply is served to retail customers in the City and County of San Francisco; the remaining 68 percent is served to wholesale customers and large retail customers outside the city.<sup>9</sup> In all, nearly 2.4 million people rely entirely or in part on water supplied by the SFPUC regional water system to meet their daily water demands.

**Table 1-1  
SFPUC Wholesale Customers**

| <b>Alameda County</b>                                    |  |
|--|--|
| Alameda County Water District                            | City of Hayward                              |
| <b>San Mateo County</b>                                  |  |
| City of Brisbane   | Town of Hillsborough                         |
| City of Burlingame                                       | Los Trancos County Water District            |
| Cal Water Service Company - Bear Gulch District          | City of Menlo Park                           |
| Cal Water Service Company - Mid Peninsula District       | Mid-Peninsula Water District                 |
| Cal Water Service Company - South San Francisco District | City of Millbrae                             |
| Coastside County Water District                          | North Coast County Water District            |
| City of Daly City  | City of Redwood City                         |
| City of East Palo Alto                                   | City of San Bruno                            |
| Estero Municipal Improvement District                    | Skyline County Water District                |
| Guadalupe Valley Municipal Improvement District          | Westborough Water District                   |
| <b>Santa Clara County</b>                                |  |
| City of Milpitas   | City of San Jose (portion of north San Jose) |
| City of Mountain View                                    | City of Santa Clara                          |
| City of Palo Alto  | Stanford University                          |
| Purissima Hills Water District                           | City of Sunnyvale                            |

*Source: SFPUC*

<sup>8</sup>For modeling purposes, this study refers to 30 SFPUC Wholesale Customers; one customer, California Water Service Company, was evaluated as three districts. One additional SFPUC wholesale customer, Cordilleras Mutual Water Users Association, did not participate in this study because they are a finite group (18 single-family homes) with minimal usage (4600 gallons/day).

<sup>9</sup> The larger retail customers receive water from direct connections to SFPUC’s regional transmission mains and are the end users of the water located outside the geographical boundaries of the City, such as the San Francisco County Jail, San Francisco International Airport, and Lawrence Livermore Laboratories.



In 2001-2002, the SFPUC wholesale customers collectively purchased two-thirds of their water supply needs from the SFPUC regional water system, approximately 170 million gallons per day (BAWUA 2002). Their remaining demands were met through local surface water, groundwater, recycled water, water conservation, and other supply sources such as the State Water Project and supplies delivered from the Santa Clara Valley Water District. Because several SFPUC wholesale customers meet demand through multiple sources of supply, the results of this study do not necessarily represent water savings to the SFPUC regional water system.

Figure 1-1 illustrates the location of the wholesale customers. In general, the wholesale customers are located throughout the Bay Area's different microclimates, with some serving cool coastal areas and others in warmer inland areas. The wholesale customer service areas vary dramatically in size and character. For example, Los Trancos County Water District encompasses 4.5 square miles and serves approximately 270 Residential accounts whereas the Alameda County Water District encompasses approximately 103 square miles serving 77,000 residential, Commercial, Industrial, and Institutional accounts. Appendix A provides a brief description of each wholesale customer that purchases water from SFPUC.

### **1.3 APPROACH TO CONSERVATION EVALUATION**

The approach used in this study to develop and quantify potential water conservation savings in the SFPUC wholesale customer service area involved the following series of steps:

1. The first step involved identifying a suite of conservation measures to be evaluated for cost-effectiveness, implementability, and potential for water savings in the wholesale customer service area.
2. The second step involved gathering data for each conservation measure to be evaluated in the study, including the applicable market (i.e., the retail customers who would be targeted) for the measure, the cost of the measure, and other implementation factors.
3. The third step involved using the DSS model to forecast costs and benefits to the utility and the retail customer from implementing each conservation measure. In this step, the DSS model was used to calculate the cost-effectiveness of each conservation measure.
4. The fourth step involved working with each individual wholesale customer to develop three packages of conservation measures. Specifically, each wholesale customer used the cost-effectiveness evaluation from the third step and, after considering other factors such as service area water use characteristics, retail customer behavioral patterns, budgetary consideration, and relative ease of implementation for each conservation measure, chose the appropriate conservation measures for their service area, and developed them into three packages of measures that build upon each other and that represent a range of conservation potential.

These steps are described in detail in the following four main sections of the Report:

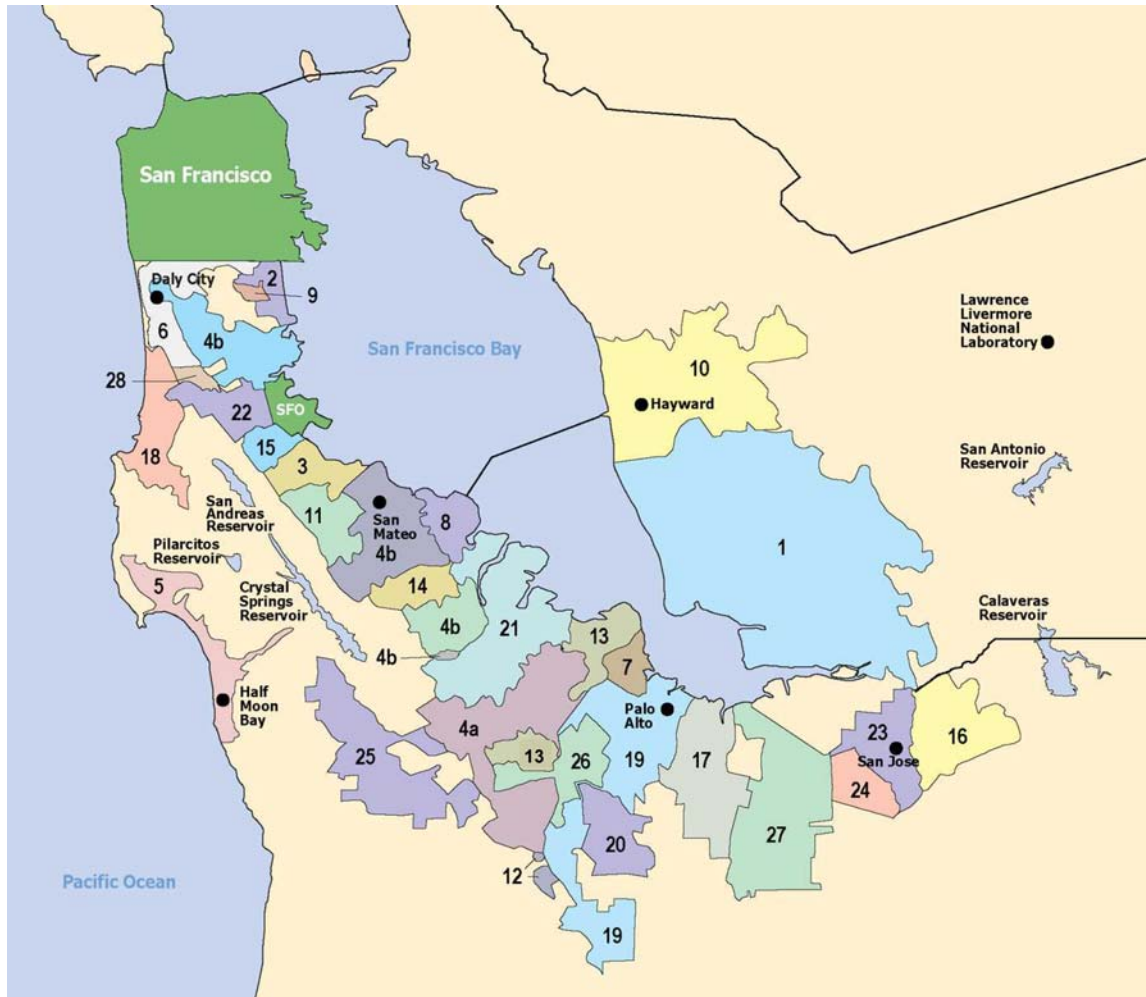
- Selection of Conservation Measures (Section 2)
- Evaluation of Conservation Measures (Section 3)
- Wholesale Customer Conservation Program Development (Section 4)
- SFPUC Wholesale Customer Area Conservation Evaluation Results (Section 5)

Section 2, **Selection of Conservation Measures**, describes the screening process for choosing the conservation measures to be evaluated for their cost-effectiveness in achieving water conservation savings in each individual wholesale customer service area.

Section 3, **Evaluation of Conservation Measures**, describes the data collection and evaluation process used to determine cost-effectiveness and savings potential of each conservation measure for the individual wholesale customer service areas. The section identifies the evaluation variables used and describes how the DSS model was used to evaluate the costs and savings potential for each conservation measure.

Section 4, **Wholesale Customer Conservation Program Development**, details the process employed to develop a range of three conservation programs for each individual wholesale customer based on cost-effectiveness and other factors such as service area water use characteristics, retail customer behavioral patterns, budgetary consideration, and relative ease of implementation for conservation measures in their service area.

Section 5, **SFPUC Wholesale Customer Area Conservation Evaluation Results**, presents the potential water conservation savings and costs for the range of conservation programs developed by the individual wholesale customers.



Map courtesy of BAWSCA website

| #  | SFPUC Wholesale Customer                      |
|----|---|
| 1  | Alameda County Water District                 |
| 2  | Brisbane, City of                             |
| 3  | Burlingame, City of                           |
| 4a | CWS – Bear Gulch District                     |
| 4b | CWS – Mid Peninsula District                  |
| 4c | CWS – South San Francisco District            |
| 5  | Coastside County Water District               |
| 6  | Daly City, City of                            |
| 7  | East Palo Alto, City of                       |
| 8  | Estero MID/Foster City                        |
| 9  | Guadalupe Valley MID                          |
| 10 | Hayward, City of                              |
| 11 | Hillsborough, Town of                         |
| 12 | Los Trancos County Water District             |
| 13 | Menlo Park, City of                           |
| 14 | Mid-Peninsula Water District                  |
| 15 | Millbrae, City of                             |
| 16 | Milpitas, City of                             |
| 17 | Mountain View, City of                        |
| 18 | North Coast County Water District             |
| 19 | Palo Alto, City of                            |
| 20 | Purissima Hills Water District                |
| 21 | Redwood City, City of                         |
| 22 | San Bruno, City of                            |
| 23 | San Jose, City of (portion of north San Jose) |
| 24 | Santa Clara, City of                          |
| 25 | Skyline County Water District                 |
| 26 | Stanford University                           |
| 27 | Sunnyvale, City of                            |
| 28 | Westborough Water District                    |

CWS - California Water Service (Company)  
MID - Municipal Improvement District

**Figure 1-1 SFPUC Wholesale Customer Service Area**

## **2.1 INTRODUCTION**

This section describes the process used to arrive at the suite of 32 conservation measures that were evaluated for cost-effectiveness and potential water savings for this study. The process involved the following three steps:

1. A large menu of 75 potential water conservation measures that appeared relatively appropriate for the region were screened down to 31 measures that met specific criteria related to implementability in the region.
2. The 31 measures were then collapsed to 22 measures to avoid duplication and to take advantage of economies of scale possible by combining related measures.
3. Ten additional Best Management Practices (BMPs) for water conservation widely implemented in the wholesale service area and throughout California were added to create the “short list” of 32 conservation measures evaluated in this study.

The following sections describe these steps in detail.

## **2.2 INITIAL CONSERVATION MEASURES CONSIDERED**

An initial comprehensive list of 75 potential water conservation measures was compiled for screening. The list of 75 measures was developed by reviewing (1) wholesale customers current conservation practices and (2) water conservation measures that other water agencies across the country and in other countries have considered or are currently implementing. No water agency considered in the review is currently implementing all 75 measures. It was important that the initial list of 75 conservation measures consist of measures that went beyond what the wholesale customers were currently implementing. However, it was assumed that the short list of measures to be evaluated in this study would be a combination of current conservation activities and measures screened from the list of 75 measures.

The following sections briefly describes the measures currently being implemented by the wholesale customers and the initial list of 75 conservation measures.

### **2.2.1 Wholesale Customers Current Conservation Practices**

The SFPUC wholesale customers have been implementing water conservation practices since the mid-1970s. Table A-1 in Appendix A provides a list of conservation measures currently being implemented by each wholesale customer. Thirteen<sup>10</sup> of the 28 wholesale customers are signatories to a *Memorandum of Understanding Regarding Urban Water Conservation in California* (MOU) developed among urban water agencies in 1991 to encourage water conservation practices. Collectively, these 13 agencies represent over 70 percent of the current

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<sup>10</sup> In addition to these 13 wholesale customers, eight wholesale customers (Cities of Milpitas, Mountain View, San Jose, Santa Clara, Palo Alto and Sunnyvale, Purissima Hills Water District, and Stanford University) are located within the Santa Clara Valley Water District (District) service area and participate in the District’s conservation program. The District is a signatory to the MOU and implements the 14 BMPs within its entire service area.

SFPUC wholesale deliveries. Those wholesale customers that are signatories to the MOU include:

|                                  |                                   |
|----------------------------------|-----------------------------------|
| Alameda County Water District    | City of Millbrae                  |
| California Water Service Company | City of Mountain View             |
| -Bear Gulch District             | North Coast County Water District |
| -Mid Peninsula District          | City of Palo Alto                 |
| -South San Francisco District    | Purissima Hills Water District    |
| Coastside County Water District  | City of Redwood City              |
| City of Hayward                  | City of San Jose                  |
| Mid-Peninsula Water District     | Westborough Water District        |

In conjunction with the MOU, Best Management Practices (BMPs) were established. Signatories to the MOU commit to implementing those BMPs that are cost-effective.<sup>11</sup> The current list of BMPs include:

- |   |  |
|---|--|
| 1. Interior and exterior water audits and incentive programs for single-family and multi-family residential customers | 7. Public Information  |
| 2. Residential plumbing retrofits   | 8. School education programs                                   |
| 3. System water audits, leak detection and repair   | 9. Commercial, Industrial and Institutional water conservation |
| 4. Metering with commodity rates for all new connections and retrofit of existing connections                         | 10. Wholesale agency assistance programs <sup>12</sup>         |
| 5. Large landscape conservation programs  | 11. Conservation pricing                                       |
| 6. Horizontal axis washer rebate programs   | 12. Conservation coordinator                                   |
|   | 13. Water waste prohibition                                    |
|   | 14. Residential ULFT rebate program                            |

<sup>11</sup> The SFPUC wholesale customers that are not signatories to the MOU also implement cost-effective water conservation measures appropriate for their service areas. Appendix A provides information on these activities.

<sup>12</sup> The Wholesale Water Agency Assistance Programs requires wholesale water agencies such as the SFPUC to provide technical and/or financial assistance to its wholesale customers.

Appendix A (Table A-1) provides a list of BMPs being implemented by each wholesale customer. In addition to the BMPs, the wholesale customers are also implementing the following conservation measures:

- Rebates for dual flush /4L toilets
- ET controller rebates
- RMF washing machine rebates
- Incentives for water efficient landscaping and irrigation upgrades
- Restaurant low-flow spray nozzle replacement program
- High-efficiency dishwasher rebate program

### **2.2.2 Initial List of Conservation Measures**

Table 2-1 provides the list of initial conservation measures considered covering the following retail customer categories:

- Single-Family Residential (RSF)
- Multi-Family Residential (RMF)
- Commercial, Industrial, Institutional (CII)
- Water Utility or City/County (PUB)

The list describes each conservation measure, how it would be implemented, and identifies the potential implementing agency (Water Utility or City/County). To summarize, the initial list of 75 measures includes (1) rebate and other incentive programs for installing water saving devices, (2) City/County ordinances requiring the installation of water saving devices, and (3) educational outreach and award programs that promote water use reductions in businesses and landscaping.

### **2.3 MEASURE SCREENING PROCESS**

Using the initial list of 75 potential conservation measures, a screening process was undertaken to develop a list of measures considered suitable for the region and to eliminate those measures that are not as well suited to the wholesale customers as other potential measures. It was intended that all measures resulting from the screening process could generally apply to the Bay Area. The 75 conservation measures were scored using qualitative criteria related to the following:

- Does the product (water-using fixture) work well and is it readily available? (Technology/Market Maturity)
- Would the measure have widespread application in the Bay Area? (Service Area Match)
- Will the retail customer participate in the measure or use the product and is it fair how the measure is applied throughout the service area among the different customer types? (Customer Acceptance/Equity)
- Among similar measures that accomplish the same thing, is this measure the best way to save water? (Relative Effectiveness of Measure Available)

The criteria and general scoring parameters are described in more detail as follows. Each measure was evaluated by a team including a representative from the SFPUC, a representative from BAWSCA, a representative from the wholesale customer group, and a member of the consultant team. Each potential measure was scored on a scale of 1 to 5, with 1 being the lowest score and 5 being the highest. A maximum score of 20 was possible for each measure. Measures with low scores were eliminated from further consideration, while those with high scores were included in the short list of conservation measures for further evaluation. The results of how each measure scored in each criterion are shown in Appendix B. Appendix B also provides a more detailed explanation of the scoring process. Qualitative Screening Criteria:

- **Technology/Market Maturity** – Refers to whether the technology needed to implement the conservation measure, such as an irrigation control device, is commercially available and supported by the local service industry. A measure was scored low if the technology was not commercially available or high if the technology was widely available in the service area. A device may be screened out if it is not yet commercially available in the region.
- **Service Area Match** – Refers to whether the measure or related technology is appropriate for the area’s climate, building stock, or lifestyle. For example, promoting Xeriscape gardens for multi-family or commercial sites may not be appropriate where water use analysis indicates little outdoor irrigation. Thus, a measure scored low in this category if it was not well suited for the area’s characteristics and could not save water. A measure scored high in this criterion if it was well suited for the area and could save water.
- **Customer Acceptance/Equity** – Refers to whether retail customers within the wholesale customer service area would be willing to implement and accept the conservation measures. For example, would retail customers attend homeowner irrigation classes and implement lessons learned from these classes. If not, then the water savings associated with this measure would not be achieved and a measure with this characteristic would score low for this criterion. This criterion also refers to retail customer equitability (i.e., one category of retail customers receives benefit while another pays the costs without receiving benefits). Retail customer acceptance may be also based on convenience, economics, perceived fairness, or aesthetics.
- **Relative Effectiveness of Measure Available** – Refers to the selection of the most effective measure if alternate conservation measures address the same end use. If the measures are equally effective the most appropriate was selected (e.g., the measure that was easier or less expensive to implement).

Thirty-one measures passed the qualitative screening process. These measures were then combined together to avoid duplication and take advantage of economies of scale. For example, individual single-family, multifamily, and commercial toilet rebate measures were combined into one measure. In addition, some measures that initially did not pass the screening test were combined with a similar measure that did pass the screening test to create an equitable and workable program. For example, the dual-flush toilet rebate program did not pass the screening test for existing homes but did pass for new homes. As a result the dual-flush toilet rebate program included in the short list targeted both new and existing homes, as it was determined that if an agency is going to run a dual-flush toilet rebate program they should offer the program to all residents. This step reduced the number of measures from 31 measures to 22 new measures.

**Table 2-1  
Initial List of Conservation Measures**

| Conservation Measure                          |  | Implementing Agency<br>(Water Utility or City/County) | Description   |
|---|--|---|---|
| <i>Single-Family Residential – Indoor</i>     |  |   |   |
| <b>Measures Applying to Existing Accounts</b> |  |   |   |
| 1.  | Rebates for 6/3 dual flush or 4-liter toilets                                    | Water Utility   | Provide a rebate or voucher for the retrofit of a 6/3 dual flush, 4-liter or equivalent very low water use toilet. Rebate amounts would reflect the incremental purchase cost often in the range of \$50 to \$100 per toilet replaced.  |
| 2.  | Home leak detection and repair   | Water Utility   | Use leak detection equipment to determine whether and where leaks are occurring on the premises and provide a plumber to repair leaks for free.   |
| 3.  | Increase school education programs   | Water Utility   | Sponsor school conservation programs with workbooks and presentations; teaching materials and other educational tools to teach the students the importance of conserving water.   |
| <b>Measures Applying to New Homes</b>         |  |   |   |
| 4.  | Require high efficiency clothes washing machines                                 | City/County   | City/County would enforce, through building permits, a state law that would be passed that would require new homes to have high efficiency clothes washers. Educate retail customers using bill inserts, displays at points of purchase, the media, on high efficiency clothes washer technology.   |
| 5.  | Insulate hot water piping  | City/County   | Change building codes as necessary to require installation of hot water pipe insulation on new residences.  |
| 6.  | Rebates for 6/3 dual flush or 4-liter toilets                                    | Water Utility   | Provide coupon or rebate to developers to install these toilets in new homes and to new homeowners to replace the 6 liter toilet (required by the plumbing code) with a 6/3 dual flush toilet.  |
| 7.  | Require 6/3 dual flush or 4-liter toilets in new homes                           | City/County   | City/County would enforce, through building permits, a state law that would be passed to require 6/3 dual flush or 4-liter toilets in new homes.  |
| <i>Single-Family Residential – Outdoor</i>    |  |   |   |
| <b>Measures Applying to Existing Homes</b>    |  |   |   |
| 8.  | Regulations for rain sensor/shut-offs on automatic systems                       | Water Utility and City/County                         | Pass a city ordinance to require rain shut-off devices on new irrigation systems. Provide a rebate incentive for the installation of these devices with automatic irrigation systems in new construction. Fine those that do not have a rain shut-off device installed. Building code doesn't cover irrigation systems, law required.                         |
| 9.  | ET controller rebates  | Water Utility   | Provide a rebate for ET controllers that have on-site temperature sensors or rely on a signal from a central weather station that modifies irrigation times at least weekly (preferably daily) as the weather changes.  |
| 10.   | Additional Xeriscape demonstration gardens                                       | Water Utility   | Donate a portion of public land to create a demonstration garden displaying living examples of low water-using gardens and landscaping include signs and brochures educating visitors on garden features.   |
| 11.   | Xeriscape education and staff training at retail garden/irrigation supply houses | Water Utility   | Sponsor training for staff at stores where plants and irrigation equipment is sold about the benefits of native (low water use) plants, efficiently irrigated.  |
| 12.   | Homeowner irrigation classes   | Water Utility   | Provide classes at stores where irrigation equipment is sold or other suitable venues on selection of low water use plants and selection and installation of efficient equipment (drip irrigation, smart controllers, low volume sprinklers, etc.).   |
| 13.   | Trigger shut-off valves and hose timers  | Water Utility   | Encourage manufacturers to include trigger shut-off valves with hoses, and offer rebates to retail customers that purchase hoses with shut-off valves, or shut-off valves.  |
| <b>Measures Applying to New Homes</b>         |  |   |   |
| 14.   | ET Controller Rebates  | Water Utility   | Provide a rebate for ET controllers that have on-site temperature sensors or rely on a signal from a central weather station that modifies irrigation times at least weekly (preferably daily) as the weather changes.  |
| 15.   | New home efficiency rating system  | City / County   | Using a point system for installed conservation devices, require the new homeowner/contractor to meet a certain number of points to receive a water meter.  |
| 16.   | Require model homes be landscaped with low water use landscaping                 | City/County   | Enforce a regulation that specifies that at least half of the model homes in a subdivision be landscaped according to Xeriscape principles. Information on Xeriscape would be given to new homebuyers.  |
| 17.   | New home efficiency award programs   | Water Utility   | Provide annual award to developers that are "Green Builders" and offer homes for sale that meet certain criteria. This could be combined with energy efficient homes.   |
| 18.   | Promote water efficient plantings at new homes                                   | Water Utility   | Provide information for planting water-efficient landscaping, including avoiding strip turf sections that are difficult to water-efficiently and using native plants that do not require supplemental watering. Information would be provided in brochures with the water bill, or mailed or through informational displays at Utility offices and nurseries. |



**Table 2-1  
Initial List of Conservation Measures**

| Conservation Measure                          |   | Implementing Agency<br>(Water Utility or City/County) | Description  |
|---|---|---|--|
| 19.   | Landscape requirements for new homes (turf limitations/regulations)                       | City/County   | Require the use of low-water-using or native plants for landscaping purposes. Proof of compliance would be necessary to obtain a water connection on all new residential projects. Non-compliers would face a surcharge on their water bill until they complied.   |
| 20.   | Rebates for rain sensor/shut-offs on automatic systems                                    | Water Utility   | Provide a rebate for the installation of rain sensors with automatic irrigation systems in new construction. Inspect and fine Irrigation accounts (or randomly inspect large summer volume users) those that do not have a rain shut-off device installed.   |
| 21.   | Developer financed off-site conservation projects   | Water Utility   | Require developers of new homes to contribute money to the water conservation program to help generate the water needed to supply their project.   |
| <b>Multi-Family Residential – Indoor</b>      |   |   |  |
| <b>Measures Applying to Existing Accounts</b> |   |   |  |
| 22.   | Offer incentives for replacement of clothes washers in coin-operated laundries            | Water Utility   | Offer apartment managers or washing machine leasing companies incentives to retrofit or use efficient clothes washers.   |
| 23.   | Incentives for retrofitting sub-metering  | Water Utility   | Rescind regulations that prohibit sub-metering of multi-family buildings. Encourage sub-metering through water audits, direct mail promotions, and/or incentives to building owners.   |
| 24.   | Regulations on sub-metering procedures (to protect tenant)                                | Water Utility   | Develop regulations for metering and billing tenants in an equitable manner.   |
| 25.   | Rebates for 6/3 dual flush or 4-liter toilets   | Water Utility   | Provide a rebate or voucher for the retrofit of a 6/3 dual flush, 4-liter or equivalent very low water use toilet. Rebate amounts would reflect the incremental purchase cost and would be in the range of \$50 to \$100 per toilet replaced.  |
| <b>Measures Applying to New Development</b>   |   |   |  |
| 26.   | Rebates for 6/3 dual flush or 4-liter toilets   | Water Utility   | Offer a coupon or rebate to developers to install these toilets in new homes or to new homeowners to replace the 6 liter toilet (required by the plumbing code) with a 6/3 dual flush toilet   |
| 27.   | Require sub-metering multifamily units  | City/County   | Require all new multi-family units to be sub-metered. To reduce financial impacts on tenants specify acceptable methods of metering and billing.   |
| 28.   | Rebates for efficient clothes washers (such as horizontal axis)                           | Water Utility   | Provide rebate to new apartment complexes over a certain size that equip common laundry rooms with efficient washing machines.   |
| 29.   | Require 6/3 dual flush or 4-liter toilets in new units                                    | City/County   | Require building departments to ensure that a 6/3 dual flush or 4-liter toilet was installed before new unit occupancy.  |
| <b>Multi-Family Residential – Outdoor</b>     |   |   |  |
| <b>Measures Applying to Existing Accounts</b> |   |   |  |
| 30.   | ET controller rebates   | Water Utility   | Use the latest state of the art irrigation controllers. These controllers have on-site temperature sensors or rely on a signal from a central weather station that modifies irrigation times at least weekly (preferably daily) as the weather changes. Water Utility would provide a rebate for the controller. |
| 31.   | Add rain sensors to existing irrigation controllers                                       | Water Utility   | Water Utility would provide a voucher for a free rain sensor, or rebate to building owners with automatic irrigation systems.  |
| <b>Measures Applying to New Development</b>   |   |   |  |
| 32.   | ET controller rebates   | Water Utility   | Provide a rebate for ET controllers that have on-site temperature sensors or rely on a signal from a central weather station that modifies irrigation times at least weekly (preferably daily) as the weather changes.   |
| 33.   | Rebates for rain sensor/shut-offs on automatic irrigation systems                         | Water Utility   | Provide rebates for the installation of rain sensors with automatic irrigation systems in new construction.  |
| 34.   | New home efficiency rating system   | City/County   | Using a point system for installed conservation devices, require the new homeowner/contractor to meet a certain number of points to receive a water meter.   |
| 35.   | New home award programs   | Water Utility   | Provide annual award to developers that are “Green Builders” and offer apartments for rent for condominiums for sale that meet certain criteria. This could be combined with energy efficient homes.   |
| 36.   | Enforce landscape requirements for new landscaping systems (turf limitations/regulations) | Water Utility   | Enforce existing requirements on use of low-water-using or native plants for landscaping purposes. Proof of compliance would be necessary to obtain a water connection on all new residential projects. Non-compliers would face a surcharge on their water bill until they complied.                            |
| 37.   | Require efficient irrigation system design standards                                      | City/County   | Require installation of irrigation systems that are efficient and installed by trained/certified contractors.  |
| 38.   | Developer financed off-site development conservation projects                             | Water Utility   | Require developers of new homes to contribute money to the water conservation program to help generate the water needed to supply their project.   |

**Table 2-1  
Initial List of Conservation Measures**

| Conservation Measure                                |   | Implementing Agency<br>(Water Utility or City/County) | Description  |
|---|---|---|--|
| <i>Commercial/Industrial/Institutional – Indoor</i> |   |   |  |
| <b>Measures Applying to Existing Accounts</b>       |   |   |  |
| 39.   | Rebates for replacing high use commercial urinals with 0.5 gal/flush urinals                                | Water Utility   | Selectively provide rebates to businesses to convert to efficient urinals only where urinals are subject to high use, such as restaurants, theaters, stadiums etc.   |
| 40.   | Require 1.6 gal flush toilets to be installed at the time of sale   | City/ County  | Require a certificate of compliance be submitted to the Water Utility that verifies that a plumber has inspected the property and efficient fixtures where either already there or were installed at the time of sale, before close of escrow.   |
| 41.   | Offer incentives for replacement or lease of clothes washers in coin-operated laundries                     | Water Utility   | Offer laundromat managers or washing machine leasing companies incentives to retrofit or use efficient clothes washers.  |
| 42.   | Require car washes to recycle water   | City/ County  | Pass a regulation that required all existing drive-through car washes install equipment to recycle water by a certain date.  |
| 43.   | Offer rebates for meters on cooling towers  | Water Utility   | Offer a rebate to buildings that install sub-meters to measure the make-up and bleed-off water of the facility cooling towers. Provide educational brochures and a phone contact of a knowledgeable person to provide conservation information.  |
| 44.   | Cooling tower regulations   | Water Utility   | Prohibit discharge of cooling tower blow down unless the TDS of the water is at least a certain level (that would ensure 5-10 cycles of concentration).  |
| 45.   | Restaurant low flow spray rinse nozzles   | Water Utility   | Provide free installation of 1.6 gpm spray nozzles for the rinse and clean operation in restaurants and other commercial kitchens that did not participate in 2002-3 CUWCC program.  |
| 46.   | Focused water audits for hotels/motels  | Water Utility   | Provide free water audits to hotels and motels. Standardize the types of services offered to reduce costs including bathrooms, kitchens, ice machines, cooling towers, landscaping, and irrigation systems and schedules.  |
| 47.   | WAVE Program (sponsored by US EPA) for hotels   | Water Utility   | Provide hotels with information about the US EPA’s WAVE program. This program encourages hotels to do their own water audit and then analyze their water use with the software provided. The software identifies water saving projects and computes paybacks. Hotels that agree to participate in the program also agree to install cost-effective water conserving equipment.   |
| 48.   | Hotel retrofit (w/financial assistance)   | Water Utility   | Following a free water audit offer participating hotels a rebate for identified water saving. Provide a rebate schedule for certain efficient equipment such as air-cooled ice machines for hotels that don’t participate in an audit.   |
| 49.   | Employee education program  | Water Utility   | Conduct a workshop for high water use account managers explaining the latest water conserving -plumbing fixtures and describing the water savings that could be achieved through implementation.   |
| 50.   | Award program for water savings by businesses   | Water Utility   | Sponsor an annual awards program for businesses that significantly reduce water use. They would receive a plaque, presented at a lunch with the mayor.   |
| 51.   | Capacity buy-back for process improvements  | Water Utility   | Set-up a low interest loan or grant program to buy back capacity from large users who install water efficient equipment. The retail customer would propose a project (possibly as the result of a water audit) and the Water Utility would estimate the water savings and calculate a rebate based on their avoided costs for new capacity. Retail customer would receive an upfront payment upon signing a contract to install the equipment. |
| 52.   | Rebates for X-Ray recycling units   | Water Utility   | Conduct a brief audit of x-ray machines to identify machines where the process water from the developer or filter solution could be recycled. Offer rebates for water-recycling equipment.   |
| 53.   | Replace inefficient water using equipment   | Water Utility   | Provide a rebate for a standard list of water efficient equipment including icemakers, efficient dishwashers, cooling towers to replace once through cooling, irrigation controllers, and certain process equipment.   |
| <b>Measures Applying to New Accounts</b>            |   |   |  |
| 54.   | Require car washes to recycle water   | City/County   | Pass a regulation that requires all new drive-through car washes to recycle water in order to get a water meter.   |
| 55.   | Require efficient (such as horizontal axis) clothes washers   | City/County   | Require clothes washers in all coin-operated Laundromats and common laundry rooms meet a certain water efficiency level as rated by the Consortium on Energy Efficiency, Inc.  |
| 56.   | Rebates for waterless urinals   | Water Utility   | Encourage Commercial accounts retrofit existing public restrooms with waterless urinals. Provide educational brochures presented with water bills, rebates and coupons.  |
| 57.   | Promotion and/or rebates for laundry recycle systems at commercial laundries                                | Water Utility   | Provide information on recycling water use in laundries, either during an audit or through educational brochures presented with the water bill provides. Provide rebates to decrease the payback period.   |
| 58.   | Self-closing faucets  | City/County   | Require Non-Residential accounts to install automatic (infrared sensor) or manual self-closing faucets for all new retail customer or high use restrooms.  |
| 59.   | Require efficient process equipment for selected businesses (restaurants, hotels/motels, office sanitation) | City/County   | Require new facilities to install water efficient equipment.   |

**Table 2-1  
Initial List of Conservation Measures**

| <b>Conservation Measure</b>                          |   | <b>Implementing Agency<br/>(Water Utility or City/County)</b> | <b>Description</b>  |
|--|---|---|---|
| 60.  | Prohibit once through cooling and non-recycling fountains, other non efficient water features | City/County   | Pass a city ordinance to require rain shut-off devices on new irrigation systems. Provide a rebate incentive for the installation of these devices with automatic irrigation systems in new construction. Fine those that do not have a rain shut-off device installed. Building code doesn't cover irrigation systems, law required. |
| 61.  | Require 0.5 gal/flush urinals in new buildings  | City/County   | Require that new buildings be fitted with 0.5 gal/flush urinals rather than the current standard of 1.0-gal/flush models.   |
| <b>Commercial/Industrial/Institutional – Outdoor</b> |   |   |   |
| <b>Measures Applying to Existing Accounts</b>        |   |   |   |
| 62.  | Rebates for ET irrigation controllers for Irrigation accounts                                 | Water Utility   | Provide a rebate for advanced irrigation controllers that have at least a water-budgeting feature and multiple start times and a rain sensor/soil moisture sensor. Rebates could be financed by water rates or a surcharge on water bills for irrigation meters.  |
| 63.  | Add rain sensors to existing irrigation controllers   | Water Utility   | Provide rebates for the installation of rain sensors with automatic irrigation systems on existing accounts by a certain date. Inspect and fine Irrigation accounts (or randomly inspect large summer volume users) those that do not have a rain shut-off device installed.  |
| 64.  | Financial incentives for complying with water use budget                                      | Water Utility   | Link a landscape water budget to a rate schedule that penalizes the account holder for exceeding its water budget and rewards them for using less than the budget.  |
| 65.  | Financial incentives, rebates for irrigation upgrades   | Water Utility   | Provide rebates for selected types of irrigation equipment upgrade.   |
| <b>Measures Applying to New Accounts</b>             |   |   |   |
| 66.  | Rebates for rain sensor/shut-offs on automatic systems  | Water Utility   | Rebates for the installation of rain sensors with automatic irrigation systems in new construction. Inspect and fine Irrigation accounts (or randomly inspect large summer volume users) those that do not have a rain shut-off device installed.   |
| 67.  | Require dedicated irrigation meters   | Water Utility   | Require that new accounts that plan a substantial amount of irrigated landscape have a dedicated landscape meter and be charged on a separate rate schedule that recognizes the high peak demand placed on the system by irrigators.  |
| 68.  | ET controllers rebates  | Water Utility   | Provide rebate for new sites fitted with state of the art irrigation commercial controllers that automatically adjust for changes in the weather.   |
| 69.  | Enforce landscape requirements for new landscaping systems (turf limitations/regulations)     | Water Utility   | Enforce existing requirement for landscaping of new non-residential properties to use only native or water conserving species. Provide personnel to inspect those affected by the ordinance and ensure effective implementation.  |
| 70.  | Require efficient irrigation system design standards  | City/County   | Require installation of irrigation systems that are efficient and installed by trained/certified contractors.   |
| 71.  | Financial incentives for complying with water use budget                                      | Water Utility   | Link a landscape water budget to a rate schedule that penalizes the account holder for exceeding its water budget and rewards them for using less than the budget.  |
| <b>Water Utility / City – Indoor</b>                 |   |   |   |
| 72.  | Installation of waterless urinals, dual flush toilets   | Water Utility   | Selectively retrofit public restrooms with state of the art plumbing fixtures such as waterless urinals and dual flush toilets.   |
| 73.  | Water Utility / City Department water reduction goals   | Water Utility   | Provide water use reduction goals for metered City and County accounts and offer assistance in the form of audits and employee education.   |
| <b>Water Utility / City – Outdoor</b>                |   |   |   |
| 74.  | Public swimming pool water audits   | Water Utility   | Provide water audits of public swimming pools and showers in changing rooms and educate pool operators on proper pool maintenance.  |
| 75.  | ET controllers rebates  | Water Utility   | Provide rebates for existing school play fields, parks, sports fields, golf courses, and other such sites fitted with state of the art irrigation commercial controllers that automatically adjust for changes in the weather.  |

**2.4 MEASURES SELECTED FOR FURTHER EVALUATION**

The final short list of measures that were evaluated includes 32 measures, based on 10 CUWCC BMPs currently being implemented by wholesale customers and 22 measures from the initial list of 75 measures described in the previous section. Table 2-2 provides a list of the 32 measures with a short description of each measure and the targeted retail customer use. Four CUWCC BMPs that are currently being implemented by wholesale customers were not included in the final short list for reasons described below. They include: conservation pricing, conservation coordinator, wholesale agency assistance programs, and water waste prohibition.

- **Conservation pricing** was not included because it is difficult to ascertain quantitative water savings associated with instituting conservation pricing. All of the SFPUC wholesale customers employ conservation pricing as defined by the BMP.
- **Conservation coordinator** was not considered because it is also difficult to associate a quantitative water savings with a conservation coordinator. Similarly, several wholesale customers serve a relatively small service area that does not necessarily require a dedicated conservation coordinator to be on staff in order to implement a conservation program.
- **Wholesale agency assistance program** was not included because this measure is only applicable to wholesale water agencies.
- **Water waste prohibition** was also not included because it is difficult to quantify water savings generated from having a water waste prohibition.

**Table 2-2  
Description of Conservation Measures Selected for Further Evaluation**

| Conservation Measure  | Measure Description   |
|---|---|
| 1. Residential Water Surveys  | Offer indoor and outdoor water surveys to existing Single-Family and Multi-Family residential retail customers with high water use; provide customized report to homeowner.   |
| 2. Residential Retrofit   | Provide owners of pre-1992 homes with retrofit kits that contain easy-to-install low flow showerheads, faucet aerators, and toilet tank retrofit devices.   |
| 3. Large Landscape Conservation Audits  | Provide free landscape water audits to all public and private irrigators of landscapes larger than one acre with separate Irrigation accounts upon request.   |
| 4. Water Budgets  | Provide a monthly irrigation water use budget as information on the water bill for all irrigators of landscapes larger than one acre with separate Irrigation accounts.   |
| 5. Clothes Washer Rebate  | Provide a rebate on a new water efficient clothes washer for homeowners.  |
| 6. Public Information Program   | Provide public education to raise awareness of conservation measures available to retail customers. Programs could include poster contests, speakers to community groups, radio and television time, and printed educational material such as bill inserts, etc.                |
| 7. Commercial Water Audits  | Provide a free water audit to high water use Commercial accounts that evaluates ways for the business to save water and money.  |
| 8. ULF Toilet and Urinal Rebates  | Provide rebates to pre-1994 businesses with high use fixtures for commercial ULF toilets (1.6 gal/flush) and commercial ULF urinals (1.0 gal/flush).  |
| 9. Residential ULF Toilet Rebate  | Provide a rebate to homeowners to replace an existing high volume toilet with a new water efficient toilet.   |
| 10. Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | Work with the real estate industry to require a certificate of compliance be submitted to the water utility verifying that a plumber has inspected the RSF or RMF property and efficient fixtures were either present or installed at the time of sale, before close of escrow. |
| 11. Home Leak Detection and Repair  | Use leak detection equipment to determine whether and where leaks are occurring on the premises and provide a plumber to the retail customer to repair leaks for free.  |
| 12. Rebates for 6/3 dual flush or 4 liter toilets   | Provide a rebate or voucher for the retrofit of a 6/3 dual flush, 4-liter or equivalent very low water use toilet. Rebate amounts would reflect the incremental purchase cost and would be in the range of \$50 to \$100 per toilet replaced.                                   |

**Table 2-2  
Description of Conservation Measures Selected for Further Evaluation**

| Conservation Measure  | Measure Description  |
|---|--|
| 13. ET Controller Rebates   | Provide a rebate for the latest state of the art irrigation controllers with on-site temperature sensors or a signal from a central weather station that modifies irrigation times at least weekly (preferably daily) as the weather changes.  |
| 14. Xeriscape education and staff training at retail garden/irrigation supply houses            | Sponsor training for staff of stores where plants and irrigation equipment is sold to educate sales people about the benefits of native (low water use) plants, efficiently irrigated.   |
| 15. Homeowner irrigation classes  | Sponsor classes at stores where irrigation equipment is sold or other suitable venues on selection and installation of efficient equipment (drip irrigation, smart controllers, low volume sprinklers, etc.)and proper plant.  |
| 16. Promote water efficient plantings at new homes  | Provide information for planting water-efficient landscaping, including avoiding strip turf sections that are difficult to water efficiently and using native plants that do not require supplemental watering. Information would be provided in brochures with the water bill, or mailed. Informational displays at Water Utility offices and nurseries could also be provided. |
| 17. Offer incentives for replacement of clothes washers in coin-operated laundries              | Offer incentives to apartment and coin-op laundry managers to retrofit or use efficient clothes washers. The rebate would either go to the manager or the washing machine leasing company.   |
| 18. Incentives for retrofitting sub-metering  | Rescind any regulations that prohibit sub-metering of multi-family buildings and encourage sub-metering through water audits and direct mail promotions, and/or incentives to building owners.   |
| 19. Require sub-metering multifamily units  | Require all new multi-family units to provide sub-meters on individual units. To help reduce financial impacts on tenants, regulations would be adopted that specify acceptable methods of metering and billing.   |
| 20. Rebate efficient clothes washers  | Provide a rebate to new apartment complexes over a certain size with a common laundry room equipped with efficient washing machines.   |
| 21. Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | Enforce existing requirements on use of native or low-water-using plants for landscaping purposes. Proof of compliance would be necessary to obtain a water connection on all new Multi-Family Residential and commercial projects. Non-compliers would face a surcharge on their water bill until they complied.  |
| 22. Restaurant low flow spray rinse nozzles   | Provide free installation of 1.6 gpm spray nozzles for the rinse and clean operation in restaurants and other commercial kitchens.   |

**Table 2-2  
Description of Conservation Measures Selected for Further Evaluation**

| <b>Conservation Measure</b>                                  | <b>Measure Description</b>   |
|--|--|
| 23. Focused water audits for hotels/motels                   | Provide free water audits to hotels and motels covering bathrooms, kitchens, ice machines, cooling towers, and irrigation system schedules.  |
| 24. WAVE Program (US EPA) for hotels                         | Provide hotels with information about the US EPA’s WAVE program. This program encourages hotels to do their own water audit and then analyze their water use with the software provided. The software identifies water saving projects and computes paybacks. Hotels that agree to participate in the program also agree to install cost-effective water conserving equipment. |
| 25. Hotel retrofit (w/financial assistance)                  | Following a free water audit offer participating hotels a rebate for identified water saving. Provide a rebate schedule for certain efficient equipment such as air-cooled ice machines for hotels that don’t participate in an audit.   |
| 26. Award program for water savings by businesses            | Sponsor an annual awards program for businesses that significantly reduce water use. Provide a plaque, presented at a lunch with the mayor.  |
| 27. Replace inefficient water using equipment                | Provide a rebate for a standard list of water efficient equipment including icemakers, efficient dishwashers, cooling towers to replace once through cooling, irrigation controllers, and certain process equipment.   |
| 28. Require 0.5 gal/flush urinals in new buildings           | Require new buildings be fitted with 0.5 gal/flush urinals.  |
| 29. Financial incentives for complying with water use budget | Link a landscape water budget to a rate schedule that penalizes the account holder for exceeding its water budget and rewards them for using less than the budget.   |
| 30. Financial incentives for irrigation upgrades             | Provide rebates for selected types of irrigation equipment upgrade.  |
| 31. Require dedicated irrigation meters for new accounts     | Require new accounts with a substantial amount of irrigated landscape have dedicated landscape meters and are charged on a separate rate schedule that recognizes the high peak demand placed on the system by irrigators.   |
| 32. Water Utility / City Department water reduction goals    | Provide water use reduction goals for metered City and County accounts and offer audits and employee education.  |

### **3.1 INTRODUCTION**

This section describes the evaluation process conducted to determine the cost-effectiveness of the 32 conservation measures selected for further evaluation. Cost-effectiveness was not the only evaluation factor used by the wholesale customers in determining a reasonable range of conservation potential. The additional factors included in the evaluation were employed on an individual basis and included factors such as ability to implement conservation measures based on service area water use characteristics, behavioral patterns of the retail customers, budgetary consideration, and ease of implementation. This section reviews the assumptions and wholesale service area data used in evaluating the 32 conservation measures and the cost-effectiveness analysis conducted using the DSS model. Section 4 discusses how the additional factors considered in the evaluation, identified above, were considered by the individual wholesale customers.

### **3.2 WHOLESALE CUSTOMER SERVICE AREA DATA**

To evaluate each conservation measure in the individual wholesale customer service areas, it was necessary to determine the potential “market” within which the conservation measure could be implemented. The applicable markets for each of 32 conservation measures include factors such as number and types of toilets, number of large landscape areas in Residential and Non-Residential accounts (i.e., parks, school grounds and athletic fields, golf courses, and cemeteries), number of hotels/motels, etc. in each wholesale customer’s service area. Table 3-1 provides a list of wholesale customers’ service area data collected to determine the market for each conservation measure. In addition to the data collected, assumptions were also made regarding water use for particular categories of use within the wholesale customers’ service area such as the amount of commercial water use that goes to hotels or average amount of irrigable land per park, school, commercial site, etc.

In addition to establishing the market potential for 32 conservation measures, this information was also used to estimate the total cost of implementing conservation measures. For example, knowing the number of hotel rooms in a wholesale customer’s service area allows costs to be developed for a conservation measure that retrofits a certain number of hotel rooms in the service area. Costs are further discussed in the following sections of this report.

### **3.3 CONSERVATION MEASURE ASSUMPTIONS**

In addition to understanding the market potential for each measure, several variables associated with cost and implementation of each conservation measure were identified. These variables include:

- targeted water use
- the market penetration goal for a measure
- potential water savings from implementing a measure
- length of time measure is implemented to reach desired market penetration
- length of time the water savings will last from implementing a measure



- costs associated with implementing the conservation measure
- measure savings decay

These variables are described below. Following the description, Table 3-2 provides specific assumptions related to these variables for each conservation measure. Appendix C provides additional assumptions for each conservation measure that was used in the evaluation process.

### **3.3.1 Targeted Water Use**

Each conservation measure targets a particular water use such as indoor single-family water use. Targeted water uses are categorized by water user group and by end use. Targeted water user groups could include Single-Family Residential (RSF); Multi-Family Residential (RMF); Commercial, Industrial, and Institutional (CII); and public (PUB). Measures may apply to more than one water user group. Targeted end uses include indoor and outdoor use. The targeted water user group and end use is indicated in Table 3-2 for each conservation measure. The targeted water use is important to identify because the water savings are generated from reductions in water use for the targeted end use. For example, Residential Retrofits (Measure 2, Table 2-2) targets Single-Family and Multi-Family Residential indoor use, specifically shower use. When considering the water savings potential generated by a residential retrofit one considers the water saved by installing low-flow showerheads in single- and multi-family homes. Baseline information on how much water is used in homes for shower use was developed in the *SFPUC Wholesale Customer Water Demand Projections* (URS 2004). A brief discussion of information regarding baseline water use is also included in Section 3.4 of this report.

### **3.3.2 Market Penetration Goal**

The market penetration goal for a measure is the extent to which the product or service related to the conservation measure occupies the potential market. In essence, the market penetration goal identifies how many fixtures, rebates, surveys, etc. the wholesale customer would have to offer or conduct over a period of time to reach its water savings goal for that conservation measure. This is often expressed in terms of the number of fixtures, rebates, surveys, etc. offered or conducted per year.

For example, in a case of a residential water survey program (Measure 1, Table 2-2):

- Assume 10,000 residential dwelling units exist at the start of a residential water survey program
- Assume the ultimate penetration rate is to conduct water surveys on 10 percent of all residential dwelling units after three years
- Therefore, 1000 residential water surveys would need to be conducted by the third year. (10,000 units x 10 percent to be surveyed = 1,000 surveys)
- To meet this goal, 333 residential water surveys would be conducted each year for three years. (333 surveys x 3 years = 999 surveys)

# SECTION THREE

**Table 3-1  
Data Collected to Establish Market Potential for Conservation Measures**

| <b>Conservation Measure</b>            | <b>Information Needed</b>   | <b>Sources of Data Collected</b>  |
|--|---|---|
| 1. Residential Water Surveys           | History of implementation, if any, by each wholesale customer (agency), i.e. number of surveys done to date.  | Wholesale customer Urban Water Management Plan (UWMP) or Water Master Plan; BAWUA Annual Survey 2002; Agency/City Water Conservation Representative   |
| 2. Residential Retrofit                | History of implementation, if any, by each wholesale customer (agency), i.e. number of devices distributed in last ten years.   | Wholesale customer UWMP or Water Master Plan; Agency/City Water Conservation Representative   |
| 3. Large Landscape Conservation Audits | History of implementation, if any, by each wholesale customer (agency), i.e., number of audits done to date; If none, amount of turf irrigated with Agency supplied water on parcels 3 acres or more. An estimate of the total amount of turf area for schools, parks and golf courses. | Wholesale customer UWMP or Water Master Plan; BAWUA Annual Survey 2002; Yahoo Yellow Pages; Personal contact with golf course representatives; Survey of selected park districts, school districts, golf courses, and cemeteries; Personal contact with City personnel. |
| 4. Water Budgets                       | 1. History of implementation, if any, by each wholesale customer (agency). 2. Number of separate irrigation meters by agency.   | Wholesale customer UWMP or Water Master Plan; Water conservation representative for agency  |
| 5. Clothes Washer Rebate               | History of implementation, if any, by each wholesale customer (agency), i.e. number of rebates given to date.   | Wholesale customer UWMP or Water Master Plan; BAWUA Annual Survey 2002; Water conservation representative for agency  |
| 6. Public Information Program          | Detailed description of current public information program including annual budget for labor and materials. Detailed description of school education program including number of students receiving information in last five years.   | Wholesale customer UWMP or Water Master Plan; BAWUA Annual Survey 2002; Agency/City Water Conservation Representative   |
| 7. Commercial Water Audits             | History of implementation, if any, by each wholesale customer (agency), i.e. number of surveys done to date; Number of Commercial, Industrial, Institutional accounts using more than 5,000 gal/day (estimate).   | Wholesale customer UWMP or Water Master Plan; BAWUA Annual Survey 2002; Agency/City Water Conservation Representative   |
| 8. ULF Toilet and Urinal Rebates       | History of implementation, if any, by each wholesale customer (agency), i.e. number of commercial toilet rebates given to date. Number of pre-1992 old commercial toilets by zip code (allocated to service area)   | Wholesale customer UWMP or Water Master Plan; BAWUA Annual Survey 2002; Agency/City Water Conservation Representative; California Urban Water Conservation Council  |
| 9. Residential ULF Toilet Rebate       | History of implementation, if any, by each wholesale customer (agency), i.e. number of residential toilet rebates given to date.  | Wholesale customer UWMP or Water Master Plan; Agency/City Water Conservation Representative   |

# SECTION THREE

**Table 3-1  
Data Collected to Establish Market Potential for Conservation Measures**

| Conservation Measure  | Information Needed  | Sources of Data Collected   |
|---|---|---|
| 10. Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | Single-Family, Multi-Family housing turnover rate (percent of homes or apartment buildings that sell every year).   | Orange Coast/California Title Company; Data Quick; Published real estate data tracked by real estate associations, newspapers, county assessors offices, or water agency billing departments; CUWCC has data for one year by city (mid 1990's). |
| 11. Home Leak Detection and Repair  | Number of miles of water distribution piping by agency  | Wholesale customer UWMP or Water Master Plan; BAWUA Annual Survey 2002; wholesale agency representative   |
| 12. Rebates for 6/3 dual flush or 4 liter toilets   | None given to date but same information as for measure no. 9 will be helpful  | Water conservation representative for agency  |
| 13. ET Controller Rebates   | Number of accounts by category and growth in new accounts.  | Wholesale customer UWMP or Water Master Plan; BAWUA Annual Survey 2002;   |
| 14. Xeriscape education and staff training at retail garden/irrigation supply houses            | History of implementation, if any, by each wholesale customer (agency) of low water use landscaping promotion program. Number of nurseries, irrigation equipment retail stores, Xeriscape demonstration gardens, and brochures distributed, if any. | Water conservation representative for agency, stores and nurseries from "yellow pages"; City Websites; Wholesale customer UWMP or Water Master Plan.  |
| 15. Homeowner irrigation classes  | Number of nurseries, irrigation equipment retail stores, number of single-family homes.   | Same as measure 14  |
| 16. Promote water efficient plantings at new homes  | Existing information available for planting water-efficient landscaping, sites and opportunities to promote measure. Number of new homes added each year.   | Water conservation representative for agency; BAWUA Annual Survey 2002.   |
| 17. Offer incentives for replacement of clothes washers in coin-operated laundries              | Number of large apartment complexes, number of coin-op Laundromats in agency service area. Average number of machines per site.   | Apartmentguide.com; homestore.com; Yellow pages for coin-op Laundromats, apartment manager associations, or water utilities for apartment laundry rooms; Yahoo Yellow Pages; Telephone survey for average number of machines per installation.  |
| 18. Incentives for retrofitting sub-metering  | Number of apartment buildings with more than 20 units   | Wholesale customer UWMP or Water Master Plan; Apartmentguide.com; homestore.com; Census data  |
| 19. Require sub-metering multifamily units  | Number of new multifamily units added each year.  | Wholesale customer-billing data   |
| 20. Rebate efficient clothes washers  | Growth in new apartment units.  | Wholesale customer-billing records  |

# SECTION THREE

**Table 3-1  
Data Collected to Establish Market Potential for Conservation Measures**

| <b>Conservation Measure</b>   | <b>Information Needed</b>   | <b>Sources of Data Collected</b>   |
|---|---|--|
| 21. Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | Existing landscape requirements for new non-Single-Family individual lot developments. Includes common areas and on-property landscaping for multifamily and commercial projects. Growth in new accounts. | Research on city/county web sites; limited telephone survey of planning departments; BAWUA Annual Survey 2002  |
| 22. Restaurant low flow spray rinse nozzles   | Number of participants in 2002-3 CUWCC 1.6 gpm spray nozzle replacement program; number of sit down restaurants or cafeterias with kitchens   | SFPUC data; BAWSCA data; Yahoo Yellow Pages  |
| 23. Focused water audits for hotels/motels  | Number of hotels/motels and number of rooms by agency.  | Yahoo Yellow Pages; AAA Tour Book; Telephone Book; travel web sites; Personal contact with hotel/motel representatives                               |
| 24. WAVE Program (US EPA) for hotels  | Same as number 23   | Same as measure 23   |
| 25. Hotel retrofit (w/financial assistance)   | Same as number 23   | Same as measure 23   |
| 26. Award program for water savings by businesses   | Number of CII accounts  | Wholesale customer UWMP or Water Master Plan; Wholesale customer-billing data  |
| 27. Replace inefficient water using equipment   | Same as number 7, number of CII accounts.   | Same as measure 5  |
| 28. Require 0.5 gal/flush urinals in new buildings  | Estimated current square footage of office building rentable space, growth in new accounts.   | Chamber(s) of commerce; City and County General Plans; Real Estate Associations; BT Commercial Market Reports; Colliers International Market Reports |
| 29. Financial incentives for complying with water use budget                                    | Same as number 4  | Same as measure 4  |
| 30. Financial incentives for irrigation upgrades  | Same as number 3, 4   | Same as measures 3 and, 4  |
| 31. Require dedicated irrigation meters for new accounts  | Same as number 3, 4   | Same as measures 3 and 4   |
| 32. Water Utility / City Department water reduction goals                                       | Number of municipal or public accounts.   | Wholesale customer-billing data  |

The potential for errors in market penetration goal estimates for each measure can be significant because they are based on previous experience, chosen implementation methods, projected utility effort and funds allocated to implement the measure. The potential error can be corrected through re-evaluation of the measure as the implementation of the measure progresses. For example, if the market penetration required to achieve specific water savings turns out to be more or less than predicted, adjustments to the implementation efforts can be made. Larger rebates or additional promotions are often used to increase the market penetration. The process is iterative to reflect actual conditions and helps to ensure that market penetration and needed savings are achieved regardless of future variances between estimates and actual conditions.

In contrast, market penetration for mandatory ordinances can be more predictable with the greatest potential for error occurring in implementing the ordinance change. For example, requiring dedicated irrigation meters for new accounts (Measure 31, Table 2-2) through an ordinance can assure an almost 100 percent market penetration for affected properties.

### **3.3.3 Conservation Measure Water Savings**

Water savings for each conservation measure are considered in terms of end-use water reductions. Each conservation measure evaluated in this study targets a particular water user group (i.e., Single-Family Residential, Multi-Family Residential, Commercial) and a particular water use within that user group (i.e., toilets, showerheads, irrigation). Sometimes a conservation measure will target multiple end uses, for example, residential water surveys often target indoor uses such as toilets, showerheads, and faucet aerators. To determine how much water is saved from implementing each conservation measure, water reductions are applied to the specific end use targeted by the conservation measure.

Water savings are expressed as a percent reduction in water use per end use. The percent reductions are only applied to the amount of water identified for the end use, not the entire category of use. For example, Residential Retrofits (Measure 2, Table 2-2) target replacing showerheads in Residential accounts, therefore the water savings is applied as a percentage of shower use in the residential water use sector. Table 3-2 indicates the target use for each measure. Additional information regarding assumed water use by retail customer category and end use is briefly described in Section 3.4 and more explicitly explained in *SFPUC Wholesale Customers Demand Projections* (URS 2004).

### **3.3.4 Conservation Measure Length: Length of Time the Measure Is Implemented**

The measure length is the amount of time the measure must be implemented to achieve the market penetration goal. Measure length is expressed in terms of years. Some measures are intended to run indefinitely in order to reach the market penetration or maintain the water savings associated with the market penetration goal. In this latter circumstance, the measure is implemented indefinitely to combat decay in water savings over time. Water savings decay is described in more detail in Section 3.3.7.

### **3.3.5 Conservation Measure Life: Length of Time Water Savings Last**

The measure life is how long the water savings from implementing a measure can be expected to last. Measure life is expressed in terms of years. In general there are two categories of measure

life: (1) those measures that have a “permanent life” and (2) those measures that have a “finite life.” Measures with a permanent life include those measures whose water savings essentially last forever. Measures with a finite life experience water savings that decay or are reduced over time.

Permanent life measures are generally applied to conservation measures that (1) involve the replacement of water using-equipment, such as a clothes washer or (2) recommend specific equipment replacement, such as with a commercial water audit. For these measures, the measure life is assumed to be permanent because it is highly unlikely that when the equipment wears out, it would be replaced with an inefficient model.

In contrast, measures that rely on the behavioral change of a homeowner or water user to save water are assumed to have a finite life. For example, a conservation measure that involves a landscape contractor setting an irrigation controller to reduce water use does not create permanent water savings because the homeowner may change landscape contractors or the house may be sold to another owner and there is no guarantee that the new homeowner or contractor will continue the same behavior. This is particularly true when the action requested is voluntary and there is no compliance monitoring. In these cases, a finite life is assumed. The factors associated with a finite life, such as decay, and how they are addressed in the cost-effectiveness analysis is discussed in Section 3.3.7.

### **3.3.6 Costs of Conservation Measures**

Costs were determined for each of the conservation measures based on industry knowledge and professional experience. Costs may include incentive costs, usually determined on a per-participant basis; fixed costs, such as marketing; and variable costs including the cost of staffing implementation of the measures, and costs of purchasing and maintaining equipment necessary to implement the conservation measure.

The costs are expressed on a dollar-per-participant basis and are presented as “utility costs” and “customer costs.” Utility costs include the cost of rebates and incentives and contractors hired to implement measures. Utility costs also include an administrative cost that covers the cost to the utility of the staff administering the measure. The administrative cost often includes consultant contract administration, marketing, and participant tracking. The administrative cost is expressed as a percentage of the cost of the rebate, incentive, or consultant cost per participant to implement the measure.

Customer costs represent the retail customer’s share of the cost to implement the measure. For example, if the rebate on a clothes washer only covers one-third of the cost difference to purchase an efficient model that is eligible for the rebate then the retail customer’s cost is the difference required for the purchase and installation.

Lost revenue due to reduced water sales is not included as a cost because the conservation measures evaluated herein generally take effect over a span of time that is sufficient to enable timely rate adjustments, if necessary, to meet fixed cost obligations.

Costs were allocated uniformly over the study’s planning period unless implementation of the measure only occurs in the first three to five years, after which only the costs to maintain the measure are incurred.

**3.3.7 Water Savings Decay**

Water savings decay is the reversal of water use reductions achieved through implementing a conservation measure. Water savings decay occurs in two ways: (1) as a result of end user's behavioral change and (2) as a result of a fixture's loss of water use efficiency. These two occurrences are described below.

***Water Savings Decay from Behavioral Change***

A portion of water savings gained through certain conservation measures can decrease as a result of changes in retail customer behavior. Water savings decay often occurs when a conservation measure requires replacement with a water-savings device that might be removed over time. For example, in a residential water survey program (Measure 1, Table 2-2) retail customers replace high water use toilets, faucet aerators, and showerheads with low-flow fixtures. The water savings gained by replacing these fixtures can change over time if the homeowner removes them or the home is sold to a new owner who chooses to remove them. When this occurs, the water savings that was experienced decays. Water savings decay can have an effect on market penetration goals and the length of time a measure is implemented.

The conservation measures evaluated in this study that are prone to decay as a result of behavioral change are:

- Measure 1 – Residential Water Surveys
- Measure 3 – Large Landscape Conservation Audits
- Measure 6 – Public Information Program
- Measure 7 – Commercial Water Audits
- Measure 14 – Xeriscape Education and Staff Training at Retail Garden/Irrigation Supply Houses
- Measure 15 – Homeowner Irrigation Classes
- Measure 16 – Promote Water-Efficient Plantings at New Homes

***Water Savings Decay from Reduced Fixture Efficiency***

Another form of decay that impacts the savings values assigned to the measures is decay due to plumbing fixtures that lose their water use efficiency over time (e.g., ultra-low flow toilets that develop a leak and begin to use more water than originally assumed). These types of decays reduce the water savings achievable by implementing particular measures over time. To address this issue, making conservative assumptions regarding the water savings for the particular measure are made based on utilizing an annual decay rate. The conservation measures evaluated in this study that are prone to decay as a result of loss of water efficiency are:

- Measure 1 – Residential Water Surveys
- Measure 3 – Large Landscape Conservation Audits
- Measure 11 – Home Leak Detection and Repair

***Addressing Water Savings Decay***

One way to address water savings decay is to extend the measure length of implementation from a set number of years to an indefinite period. In this circumstance, a measure that may only require 5 years to implement will either (1) need to be repeated indefinitely on new retail customers or (2) follow-up would need to be performed on retail customers that already participated in the measure. For example, with residential water surveys, in order for the associated water saving to be considered consistent over the life of the conservation measure, surveys would need to be done every year to maintain the measure's overall savings. This is because the effects of individual surveys may have a limited life due to potential behavioral change. Thus, if water savings from the surveys are assumed to last seven years (the life of the measure), then additional surveys or other appropriate follow-up with prior surveyed homes would need to be done every year to ensure that water savings are permanent. In this way, the total water savings would not increase beyond the level achieved at the end of the measure life but there is also no decay in total water savings for the measure.

Another way to address water savings decay is to factor the annual decay rate into the measure's cost-effectiveness evaluation by setting a decay rate equal to 1 divided by the measure life expressed as a percentage. So, for example if the measure life was 10 years then the decay rate would be 1/10 or 10 percent per year. If the implementation of the measure stopped, 10 percent of the savings would go away and therefore, the water savings would be zero in year 10.

**3.4 DSS MODEL CONSERVATION EVALUATION**

Using the data on the market potential for each conservation measure and the assumptions for each conservation measure variable, a cost-effectiveness evaluation can be performed on each conservation measure. The cost-effectiveness evaluation was conducted using the DSS model. The DSS model was used to develop water demand projections for each wholesale customer as documented in *SFPUC Wholesale Customer Water Demand Projections* (URS 2004). The following sections describe the DSS model, its components, and how it was used to evaluate the cost-effectiveness of the 32 conservation measures selected for this study.

**3.4.1 DSS Model Overview**

The DSS model is a Microsoft Excel-based application that provides a framework for the development of an end-use model, water demand forecasts and the cost-effectiveness analysis of water conservation measures. In evaluating potential water conservation programs, a large number of costs and benefits must be considered. The DSS model provides a framework for consideration of these benefits and costs.

In general, DSS model components were used in the following steps of the SFPUC studies:

***Demand Forecasting***

- Establishing wholesale-customer base-year water use conditions by customer-billing category and then by end use
- Model calibration to current water use conditions by end use using plumbing code fixture models



- Water demand forecasting using growth parameters such as population and employment projections and plumbing fixture models to forecast future conditions

### ***Water Conservation Cost-Effectiveness Evaluation***

- Establishing service area conditions for evaluation of conservation measures by creating a database of service area data relevant to the conservation measures to be evaluated
- Using the service area data to perform a benefits and costs evaluation of each measure individually to aid in wholesale customer measure selection
- Combining individual measures into programs (containing multiple measures) and performing a benefits and costs evaluation that avoids double counting water savings for similar measures and effectively evaluates the individual measures as they would function in the selected programs

The water demand forecasting methodology of the DSS model and the water demand forecasting results are documented in *SFPUC Wholesale Customers Water Demand Projections* (URS 2004). The water conservation cost-effectiveness evaluation elements of the DSS model are discussed in the following sections of this report.

### **3.4.2 Structure of DSS Model Conservation Evaluation**

The DSS model utilizes the market potential data for each conservation measure (Table 3-1) and the variables associated with implementation and water savings for each conservation measure (Table 3-2). In addition to these data, the DSS model also uses data generated by the water demand forecasts for each wholesale customer to arrive at the costs and benefits of implementing the individual conservation measures. The data include information on projected water use for customer-billing categories (water user groups) and end-use assumptions. The end-use assumptions provide estimates on how much future water will be consumed by different indoor plumbing fixtures and outdoor use. These assumptions are based on a 2001 base-year water demand for each wholesale customer. In essence, water use for the base year 2001 is broken down into indoor and outdoor use and then by end use (i.e., toilets, showers, clothes washing machines, etc.). The method for determining the appropriate breakdown in water end use is described in *SFPUC Wholesale Customer Water Demand Projections* (URS 2004).

These data are important to the conservation analysis, as the data provide a baseline from which water savings from each conservation measure can be estimated. Using these three types of data, the DSS model estimates the potential for water savings in the future as a result of a specific conservation measure and calculates associated costs and benefits through the following key steps:

- Calculate the water savings for each year that the conservation measure is implemented. This is accomplished by using the end-use estimates in the water demand forecast, the unit water savings and market penetration (Table 3-2), and the market potential data (Table 3-1).
- Calculate the cost of the measure for each year the measure is implemented. This is based on the number of participating accounts and the unit costs shown in Table 3-2, and data from Table 3-1 as required.

**Table 3-2  
Conservation Measure Variables**

| Measure                                | Target Water User Group; End use | Market Penetration Goal <sup>10</sup>  | Measure Water Savings (as a percent of total water usage (per end use) on each account to which the measure is applied)  | Measure Design Length (years)   | Measure Life (years)  | Utility Unit Cost (for contractor)  | Retail Customer Unit Cost  | Utility Administration and Marketing Cost (percentage per participant)         |
|--|----------------------------------|--|--|---|---|---|--|--|
| 1. Residential Water Surveys           | RSF, RMF; Indoor and Outdoor     | 15% <sup>1</sup> of target water user group accounts with applicable end use at end of ten years                               | 5% - Internal water savings, 10% - Leaks & Exterior <sup>1</sup> water savings<br>-----<br>Cost & Savings Study (C&S Study) for untargeted surveys, pg 2-46; savings per dwelling unit surveyed converted to end-use percentage basis for DSS Model using SFPUC mean customer indoor/outdoor per capita use and household size (see SFPUC Wholesale Customer Water Demand Projections Technical Report (URS 2004)) | Indefinitely<br>-----<br>Measure planned to continue indefinitely so savings stay at the level reached after 7 years (the measure life) | 7 <sup>2</sup><br>-----<br>CUWA Report page 20  | \$80/RSF account, \$130/RMF account <sup>1</sup><br>-----<br>RSF survey costs within range provided by C&S Study, pg 2-48, which is \$40-200 per RSF survey; costs for RMF based on Maddaus Water Management (MWM) experience.  | \$15/RSF account, \$50/RMF account<br>-----<br>MWM experience, allows for minor leak repair and retrofits by owner | 25%<br>-----<br>MWM experience, requires large marketing effort to hit targets |
| 2. Residential Retrofit                | RSF, RMF; Indoor                 | 75% of existing non-low flow devices in target water user group accounts with applicable end use (varies by city) <sup>1</sup> | 21% - Internal water savings, end use is Showers <sup>3,9</sup><br>-----<br>Adapted from AWWARF REUS report, by John Olaf Nelson, originally posted at <a href="http://www.waterwiser.org">www.waterwiser.org</a> , and published in his Kobe, Japan paper.  | 5   | Permanent<br>-----<br>Only low flow showerheads can be purchased to replace original retrofit   | \$30/RSF, \$15/RMF dwelling unit <sup>1</sup><br>-----<br>Costs within range provided by C&S Study, pg 2-49, assuming 2 showers/RSF and 1 per RMF   | 0<br>-----<br>Customer installed - no cost assigned  | 10%<br>-----<br>MWM experience, many prior examples available to follow        |
| 3. Large Landscape Conservation Audits | CII; Outdoor                     | 15% of target water user group accounts with mixed use meters <sup>1</sup>   | 15% Exterior water savings, end use is Irrigation <sup>1</sup><br>-----<br>C&S Study in the range reported on pages 2-99,100   | 10  | 10 <sup>2</sup><br>-----<br>CUWA Report page 20   | \$800/acre <sup>4,5</sup><br>-----<br>Adapted from BMP 5 Handbook, pg. 3-11, deleting marketing cost and adding 30% allowance for periodic follow-up to maintain savings. Converted to \$/acre using avg survey site value of 1.25 acres (From BMP Reporting Database Water Savings Calculator default value) | \$200/acre<br>-----<br>MWM experience  | 30%<br>-----<br>MWM experience, sometimes difficult to promote                 |
| 4. Water Budgets                       | CII; Outdoor                     | 90% of CII sites with irrigation meters <sup>1</sup>   | 15% Exterior water savings, end use is Irrigation <sup>2</sup><br>-----<br>CUWA Report page A-11   | 5   | Permanent <sup>2</sup><br>-----<br>CUWA Report page 20  | \$200/Irrigation account <sup>3</sup><br>-----<br>Within the range cited in BMP 5 Handbook, pg. 2-19  | 0<br>-----<br>Customer's contractor adjusts irrigation controller, no cost assigned                                | 15%<br>-----<br>MWM experience, straightforward but tedious                    |
| 5. Clothes Washer Rebate               | RSF, RMF; Indoor                 | As per new BMP 6 2005-2007, 4.8% of dwelling units in target water user group accounts with applicable end use by 2007         | 35%-Interior water savings, end use is Laundry <sup>1</sup><br>-----<br>Reduced slightly from the range in the C&S Study range on pg. 2-13 due to high household sizes in the Bay Area and the potential for shared laundry loads; specific savings based on fixture modeling  | 3   | Permanent<br>-----<br>MWM judgment that user will not replace an efficient machine with an inefficient one, given pending state standards | \$75/fixture<br>-----<br>Typical rebates currently offered  | \$200/fixture<br>-----<br>Estimate of added cost for an efficient machine  | 30%<br>-----<br>MWM experience in consultation with BAWSCA                     |

**Table 3-2  
Conservation Measure Variables**

| Measure   | Target Water User Group; End use | Market Penetration Goal  | Measure Water Savings (as a percent of total water usage (per end use) on each account to which the measure is applied)   | Measure Design Length (years)  | Measure Life (years)  | Utility Unit Cost (for contractor)   | Retail Customer Unit Cost   | Utility Administration and Marketing Cost (percentage per participant)                             |
|---|----------------------------------|--|---|--|---|--|---|--|
| 6. Public Information Program   | RSF; Indoor and Outdoor          | 100% of target water user group accounts with applicable end use   | 1% water savings on all indoor and outdoor end uses<br>-----<br>MWM estimate, assuming a robust conservation program accompanies public education, but that most of customer water savings are accounted for in other programs  | Indefinitely<br>-----<br>Program planned to continue indefinitely so savings stay at the level reached after 2 years | 2<br>-----<br>MWM judgment that public education has a limited life and must be continued to maintain savings                       | \$2/RSF Account/yr<br>-----<br>MWM experience  | 0<br>-----<br>Customer actions are voluntary.   | 0<br>-----<br>Cost included in utility cost  |
| 7. Commercial Water Audits  | CII; Indoor and Outdoor          | Top 10% (highest water users) of target water user group accounts with applicable end use  | 12% water savings of all site end uses (potential for 30% savings but only implement 40% of the potential) <sup>1,6</sup><br>-----<br>Default value for BMP 9, see MOU pg 44, also within range of savings reported in C&S Study pgs 2-62-65, allowing for a 40% implementation of identified potential | 10   | Permanent<br>-----<br>MWM experience that potential is in equipment changes, likely to be permanent, rather than behavioral changes | \$4000/account (top 10% of water users) <sup>1</sup><br>-----<br>In range of costs cited in C&S Study, pg 2-66, mean analyst surveys adjusted for inflation since 1995 | \$2000/account<br>-----<br>MWM experience, excludes costs for cost-effective projects paid by facility, covers facility contract administration costs | 50%<br>-----<br>MWM experience, marketing is difficult   |
| 8. ULF Toilet and Urinal Rebates  | CII; Indoor                      | 3% of target water user group accounts with pre-1992 Toilets   | Water savings are variable percentage of COM Toilet use, varies with current toilet stock <sup>7</sup> ;<br>-----<br>Savings calculated by CUWCC with toilet data by zip code. Savings based on CII ULFT Savings Study  | 3  | Permanent   | \$200/fixture<br>-----<br>Typical rebates currently offered, higher than residential rebates due to higher toilet use and savings                                      | \$200/fixture<br>-----<br>MWM experience, assumes replacement fixture is usually a flushometer type toilet  | 25%<br>-----<br>MWM experience, many examples are available to follow, but still labor intensive   |
| 9. Residential ULF Toilet Rebate  | RSF, RMF; Indoor                 | Result of 10 years of replacement at resale rate less natural replacement rate for applicable target water user group accounts   | Water savings is approximately 60% of RSF and RMF toilet end use water usage, savings varies with current toilet stock <sup>3</sup><br>-----<br>Savings set up in fixture models, see <i>SFPUC Wholesale Customer Water Demand Projections Technical Report (URS 2004)</i>                              | 10   | Permanent   | \$50/fixture<br>-----<br>Typical rebates currently offered   | \$75 per fixture<br>-----<br>Estimate of added cost for an efficient machine  | 25%<br>-----<br>MWM experience, many examples are available to follow, but still labor intensive   |
| 10. Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | RSF, RMF; Indoor                 | Approximately 100% of target water user group accounts with applicable end use (varies by city ~7%/yr)   | Water savings is approximately 60% of RSF and RMF toilet end use water usage, savings, varies with current toilet stock <sup>3</sup><br>-----<br>Savings set up in fixture models, see <i>SFPUC Wholesale Customer Water Demand Projections Technical Report (URS 2004)</i>                             | Varies with resale rate approximately 10 years   | Permanent   | \$10/account<br>-----<br>MWM experience  | \$150/fixture<br>-----<br>Estimate of total cost for an efficient machine, installed  | 15%<br>-----<br>MWM experience for regulatory program that is somewhat complicated and not routine |
| 11. Home Leak Detection and Repair  | RSF; Indoor and Outdoor          | Offer to top 20% of accounts (highest water users) in target water user group, complete approximately half of those offered (10% of total accounts in target water user group) | 90% water savings, end use is Int./Ext. Leakage use <sup>3</sup><br>-----<br>Savings assume 90% of leaks removed by plumber, leakage amount based on AWWARF REUS  | 10   | 5<br>-----<br>MWM experience, new leaks will appear   | \$200/account<br>-----<br>MWM experience, cost of plumber and leak repair materials  | 0<br>-----<br>Utility subsidizes entire cost of repair  | 25%<br>-----<br>MWM experience, new program  |

**Table 3-2  
Conservation Measure Variables**

| Measure  | Target Water User Group; End use | Market Penetration Goal  | Measure Water Savings (as a percent of total water usage (per end use) on each account to which the measure is applied)   | Measure Design Length (years)  | Measure Life (years)   | Utility Unit Cost (for contractor)  | Retail Customer Unit Cost   | Utility Administration and Marketing Cost (percentage per participant)   |
|--|----------------------------------|--|---|--|--|---|---|--|
| 12. Rebates for 6/3 dual flush or 4 liter toilets                                    | RSF, RMF; Indoor                 | 25% of target water user group accounts with applicable end use  | Water savings is approximately 67%, end use is Toilets, varies with current toilet stock <sup>3</sup><br>-----<br>Savings based on DSS Model toilet fixture models, which were based on AWWARF REUS, adjusted for lower flush volume          | 10   | Permanent<br>-----<br>Assumes dual flush toilet replaced eventually with a like model  | \$100/fixture<br>-----<br>MWM experience, assumes future price reduction from current levels  | \$50/fixture<br>-----<br>MWM experience, covers installation cost                                     | 25%<br>-----<br>MWM experience, new program  |
| 13. ET Controller Rebates  | RSF, RMF, CII, PUB; Outdoor      | 50% of accounts in target water user group with applicable end use are eligible, Assume approximately 20% of those eligible accept | 15% water savings, end use is Irrigation <sup>1</sup><br>-----<br>Savings based on C&S Study, pg 2-2 that reports on IRWD findings, slightly reduced to account for different climate in Bay Area from Orange County where studies were done. | 20   | Permanent<br>-----<br>Assumes ET Controller replaced eventually with a like model  | \$150/rebate per account<br>-----<br>MWM experience, assumes future price reduction from current levels   | \$100/account<br>-----<br>MWM experience, covers installation cost                                    | 50%<br>-----<br>MWM experience, high due to new technology and more difficult marketing and probable call backs to adjust settings |
| 14. Xeriscape education and staff training at retail garden/irrigation supply houses | RSF; Outdoor                     | 10 classes per site (training center) per year, each 300 homeowners/year (in target water user group with applicable end use)      | 15% water savings, end use is Irrigation<br>-----<br>New measure, no published data available, MWM estimate   | Indefinitely<br>-----<br>Small program done every year to reach significant population                         | Permanent<br>-----<br>Assumes permanent landscape conversions on part of landscaped area   | \$300/class; ten per year per training site<br>-----<br>MWM experience, covers training cost  | \$200/account<br>-----<br>MWM experience, covers new plant material purchase cost                     | 10%<br>-----<br>MWM experience, easy to administer once established  |
| 15. Homeowner irrigation classes   | RSF; Outdoor                     | 200 homeowners (in target water user group with applicable end use) per training site per year                                     | 10% water savings, end use is Irrigation<br>-----<br>New measure, no published data available, MWM estimate   | Indefinitely<br>-----<br>Small program done every year to reach significant population                         | Permanent<br>-----<br>Assumes permanent irrigation system upgrade on part of landscaped area   | \$300/class; ten per year<br>-----<br>MWM experience, covers training cost  | \$300/account<br>-----<br>MWM experience, covers new irrigation system material purchase cost         | 10%<br>-----<br>MWM experience, easy to administer once established  |
| 16. Promote water efficient plantings at new homes                                   | RSF; Outdoor                     | 10% of new homes in target water user group with applicable end use  | 10% water savings, end use is Irrigation<br>-----<br>No published data available yet; measure being implemented in several places, MWM estimate   | Indefinitely<br>-----<br>Small program done for larger subdivisions every year to reach significant population | Permanent<br>-----<br>Assumes permanent low water use landscape installation   | \$100/account<br>-----<br>MWM experience, covers possible incentive to new home buyers  | \$1,000/account<br>-----<br>MWM experience, covers added cost of low water use plants instead of turf | 20%<br>-----<br>MWM experience, covers coordinating with developers  |
| 17. Offer incentives for replacement of clothes washers in coin-operated laundries   | CII; Indoor                      | 50% of target water user group accounts with applicable end use by the year 2007   | 35% water savings, end use is Laundry <sup>1</sup><br>-----<br>Reduced slightly from the range in the C&S Study range on pg. 2-13 due to new measure; specific savings based on service area data collected                                   | 3  | Permanent<br>-----<br>MWM judgment that owner will not replace an efficient machine with an inefficient one, given pending standards | \$300/washer<br>-----<br>MWM experience, covers rebate cost which can be higher than for a residential machine because commercial machine used much more frequently | \$100/washer<br>-----<br>MWM experience, covers added cost of efficient commercial machine            | 25%<br>-----<br>MWM experience, new program, but sites have been identified  |

**Table 3-2  
Conservation Measure Variables**

| Measure   | Target Water User Group; End use | Market Penetration Goal   | Measure Water Savings (as a percent of total water usage (per end use) on each account to which the measure is applied)   | Measure Design Length (years)  | Measure Life (years)   | Utility Unit Cost (for contractor)   | Retail Customer Unit Cost  | Utility Administration and Marketing Cost (percentage per participant)                                   |
|---|----------------------------------|---|---|--|--|--|--|--|
| 18. Incentives for retrofitting sub-metering  | RMF; Indoor                      | 25% of the number of multifamily buildings (with more than 20 units in the building), new and existing buildings are included                         | 10% water savings of all indoor end uses <sup>1</sup><br>-----<br>New measure, savings estimate consistent with C&S Study, pg 2-26 for data available in 2003.  | 10   | Permanent<br>-----<br>MWM judgment that owner will not remove sub-meters   | \$1,000/account<br>-----<br>MWM experience, covers planned average rebate cost which would be based on building units  | \$100/unit + \$5/month per unit metered<br>-----<br>MWM experience, covers installation (retrofit) cost and meter read and bill cost     | 25%<br>-----<br>MWM experience, new program, difficult to accomplish equitably                           |
| 19. Require sub-metering multifamily units  | RMF; Indoor                      | 90% of new units in target water user group (RMF), applies to all building sizes.   | 10% water savings of all indoor end uses <sup>1</sup><br>-----<br>New measure, savings estimate consistent with C&S Study, pg 2-26 for data available in 2003   | Indefinitely<br>-----<br>Applies to all new units                    | Permanent<br>-----<br>Removal not allowed  | \$10/unit<br>-----<br>MWM experience, covers added design review and inspection cost   | \$50/unit + \$5/month/unit metered<br>-----<br>MWM experience, covers installation on new units cost and meter read and bill cost        | 10%<br>-----<br>MWM experience, administered through normal building code enforcement                    |
| 20. Rebate RMF efficient clothes washers  | RMF; Indoor                      | 50% of target water user group accounts by the year 2007  | 35% water savings, end use is Laundry <sup>1</sup><br>-----<br>Reduced slightly from the range in the C&S Study range on pg. 2-13 due to new measure; specific savings based on service area data collected                       | 3  | Permanent<br>-----<br>MWM judgment that owner will not replace an inefficient machine with an inefficient one, given pending standards | \$200/washer<br>-----<br>MWM experience, covers rebate cost which can be higher than for a Single-Family Residential machine but less than public coin-op machine based on use frequency                   | \$100/washer<br>-----<br>MWM experience, covers added cost of efficient heavy duty machine   | 25%<br>-----<br>MWM experience, new program, targets not identified                                      |
| 21. Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | RMF, CII; Outdoor                | 70% of new installations in target water user groups with applicable end uses   | 15% water savings, end use is Irrigation<br>-----<br>New measure enforcing existing AB325 regulations, MWM estimate   | Indefinitely<br>-----<br>Applies to all new Non-Residential accounts | Permanent<br>-----<br>MWM judgment that owner will not replace an efficient landscape with an inefficient landscape                    | \$50 per new Non-Residential account<br>-----<br>MWM experience, covers added new site design review and inspection cost   | \$500 per account<br>-----<br>MWM experience, covers added cost of low water landscaping versus turf                                     | 15%<br>-----<br>MWM experience, covers landscape industry education and compliance checking              |
| 22. Restaurant low flow spray rinse nozzles   | CII; Indoor                      | 75% of restaurants, colleges, and hospitals (derived based on billing and census data and wholesale customer feedback specific to their service area) | 50% water savings of spray nozzle usage (150 gpd/site) <sup>8</sup><br>-----<br>Based on year one CA PUC sponsored retrofit, 2003 reported savings (since revised down 8%)  | 5  | Permanent<br>-----<br>MWM judgment that owner will not replace an efficient valve with an inefficient valve                            | \$200/site <sup>8</sup><br>-----<br>Based on year one CA PUC sponsored retrofit, plus 10% to account for wider installation program  | 0<br>-----<br>Provided free and installed for customer   | 15%<br>-----<br>MWM experience, assuming centrally organized and contracted out, expand existing program |
| 23. Focused water audits for hotels/motels  | CII; Indoor and Outdoor          | 50% of hotel and motels (derived based on billing and census data, and wholesale customer feedback specific to their service area)                    | 15% water savings on all Hotel/Motel end uses <sup>1</sup><br>-----<br>Within range of savings reported in C&S Study pgs 2-62-65, allowing for a 40% implementation of identified potential plus MWM experience with hotel audits | 10   | Permanent<br>-----<br>MWM judgment that owner will not replace retrofitted efficient equipment with inefficient equipment              | \$3,000/site <sup>1</sup><br>-----<br>In range of costs cited in C&S Study, pg 2-66, mean analyst surveys adjusted for inflation since 1995; assumes audits are done in large numbers and done efficiently | \$2,000/site<br>-----<br>MWM experience with hotel audits, excludes cost-effective project costs; allows for hotels administration costs | 25%<br>-----<br>MWM experience, assuming centrally organized and contracted out                          |

**Table 3-2  
Conservation Measure Variables**

| Measure  | Target Water User Group; End use | Market Penetration Goal  | Measure Water Savings (as a percent of total water usage (per end use) on each account to which the measure is applied)  | Measure Design Length (years)  | Measure Life (years)  | Utility Unit Cost (for contractor)   | Retail Customer Unit Cost   | Utility Administration and Marketing Cost (percentage per participant)   |
|--|----------------------------------|--|--|--|---|--|---|--|
| 24. WAVE Program (US EPA) for hotels               | CII; Indoor                      | 10% of hotels and motels (derived based on billing and census data, and wholesale customer feedback specific to their service area)                        | 5% water savings on all Hotel/Motel end uses<br>-----<br>New measure relies on voluntary compliance; no published savings, MWM estimate  | 10   | Permanent<br>-----<br>MWM judgment that owner will not replace retrofitted efficient equipment with inefficient equipment | \$200/site<br>-----<br>Direct utility costs for promoting program  | \$5,000/site<br>-----<br>MWM experience with hotel audits, includes in-house cost of doing water audit and using EPA provided software to identify cost-effective retrofit projects | 15%<br>-----<br>Covers other utility costs for promoting program   |
| 25. Hotel retrofit (w/financial assistance)        | CII; Indoor                      | 20% of hotels and motels (derived based on billing and census data, and wholesale customer feedback specific to their service area)                        | 20% water savings on all Hotel/Motel end uses <sup>1</sup><br>-----<br>Within range of savings reported in C&S Study pgs 2-62-65, allowing for a 40% implementation of identified potential plus effects of financial assistance                                 | 10   | Permanent<br>-----<br>MWM judgment that owner will not replace retrofitted efficient equipment with inefficient equipment | \$100/room<br>-----<br>Utility rebate for subsidizing retrofit program   | \$100/room<br>-----<br>Balance of cost to retrofit room (new toilet, showerhead, faucet aerator)  | 25%<br>-----<br>MWM experience, covers other utility costs for promoting program and working with hotels to accomplish retrofits |
| 26. Award program for water savings by businesses  | CII; Indoor and Outdoor          | 3 accounts every other year for each wholesale customer with significant number CII water using accounts (large customers in target water user group only) | 25% water savings, end use is commercial <sup>1</sup><br>-----<br>Within range of savings reported in C&S Study pgs 2-62-65, allowing for a 40% implementation of identified potential plus effects of reward (for businesses who achieve this level of savings) | Indefinitely   | Permanent<br>-----<br>MWM judgment that owner will not replace retrofitted efficient equipment with inefficient equipment | \$1000/account (top 5% of applicable accounts) for publicity, judging<br>-----<br>MWM experience, (budgeted number for program)  | \$5,000/account<br>-----<br>MWM experience, excludes costs for cost-effective projects, covers water audit cost and facility contract administration costs                          | 15%<br>-----<br>MWM experience   |
| 27. Replace inefficient water using equipment      | CII; Indoor                      | 10% of accounts in target water user group with applicable end use   | 15% water savings, end use is Process use <sup>1</sup><br>-----<br>Within range of savings reported in C&S Study pgs 2-62-65, allowing for a 40% implementation of identified potential plus effects of reward (targeted at process use by large customers)      | 10   | Permanent<br>-----<br>MWM judgment that owner will not replace retrofitted efficient equipment with inefficient equipment | \$1,000/account<br>-----<br>Utility rebate for approved retrofit program   | \$5,000/account<br>-----<br>MWM experience, excludes costs for cost-effective projects, covers water audit cost and facility contract administration costs                          | 15%<br>-----<br>MWM experience, sites contact utilities for rebate, lower promotion costs than for CII surveys                   |
| 28. Require 0.5 gal/flush urinals in new buildings | CII; Indoor                      | 70% of new accounts in target water user group with applicable end use   | 50% water savings, end use is Urinals <sup>1</sup><br>-----<br>Within range of savings reported in C&S Study pg 2-92; assumes average of 0.5 gal/flush urinal used instead of 1 gal/flush urinal, currently required.  | Indefinitely<br>-----<br>Applies to all new Non-Residential accounts | Permanent   | \$25/new CII Account with urinals<br>-----<br>Utility budget for extra checking during building approval and construction phases | 0<br>-----<br>MWM experience, assumes no added cost of low water use flush valve  | 10%<br>-----<br>MWM experience, administered through normal building code enforcement  |

**Table 3-2  
Conservation Measure Variables**

| Measure  | Target Water User Group; End use | Market Penetration Goal   | Measure Water Savings (as a percent of total water usage (per end use) on each account to which the measure is applied)   | Measure Design Length (years)  | Measure Life (years)   | Utility Unit Cost (for contractor)  | Retail Customer Unit Cost   | Utility Administration and Marketing Cost (percentage per participant)  |
|--|----------------------------------|---|---|--|--|---|---|---|
| 29. Financial incentives for complying with water use budget | CII; Outdoor                     | 75% of sites in applicable target water user group with irrigation meters   | 15% water savings (on top of water budget savings), end use is Irrigation <sup>2,4</sup><br>-----<br>Within range of savings reported by CUWA pg A-11 and BMP 5 handbook, pg 2-17   | Indefinitely<br>-----<br>Permanent change for sites with irrigation meters | Permanent<br>-----<br>MWM judgment that owner will not replace efficient irrigation equipment with inefficient equipment | \$500/account<br>-----<br>Average utility rebate for those sites that reduce use  | \$1000/account<br>-----<br>MWM experience, covers cost of irrigation retrofit to meet water budget  | 10%<br>-----<br>MWM experience on regulatory program  |
| 30. Financial incentives for irrigation upgrades             | CII; Outdoor                     | 100% of new sites in applicable target water user group with irrigation or mixed use meters   | 15% water savings, end use is Irrigation <sup>1</sup><br>-----<br>Cost & Savings Study (C&S Study) in the range reported on pages 2-99,100  | Indefinitely<br>-----<br>Applies to all new Non-Residential accounts       | Permanent<br>-----<br>MWM judgment that owner will not replace efficient irrigation equipment with inefficient equipment | \$500/account<br>-----<br>Average utility rebate per site   | \$500/account<br>-----<br>MWM experience, covers cost of new site to install more efficient irrigation equipment than is normal practice          | 25%<br>-----<br>MWM experience with City of Pleasanton and others (East Bay Municipal Utilities District (EBMUD), and Contra Costa Water District (CCWD)) who have implemented this program |
| 31. Require dedicated irrigation meters for new accounts     | CII; Outdoor                     | 50% of new CII accounts where no irrigation meters currently exist  | Apply water budget savings from measure 4 to all new targeted Irrigation accounts <sup>2</sup><br>-----<br>CUWA Report page A-11  | Indefinitely<br>-----<br>Applies to all new Non-Residential accounts       | Permanent<br>-----<br>MWM judgment that owner will not replace efficient irrigation equipment with inefficient equipment | \$10/account/year<br>-----<br>Average utility cost per site to read and bill more irrigation meters than would otherwise occur. | \$1000/account<br>-----<br>MWM experience, covers cost of new site to install more efficient irrigation system, motivated by link to water budget | 10%<br>-----<br>MWM experience on regulatory program  |
| 32. Water Utility / City Department water reduction goals    | PUB; Indoor and Outdoor          | 50% of city departments (derived from billing data and census data, and wholesale customer feedback specific to their service area) | 10% water savings in indoor end uses, 15 % water savings in City, County Irrigation usage <sup>1</sup><br>-----<br>Within range of savings reported in C&S Study pgs 2-62-65, allowing for a 40% implementation of identified potential plus MWM experience with hotel audits | 10   | Permanent<br>-----<br>MWM judgment that city will not replace efficient equipment with inefficient equipment             | \$500/account<br>-----<br>Average water utility rebate per site   | \$2,000/account<br>-----<br>MWM experience, covers cost to install more efficient equipment and devices   | 15%<br>-----<br>MWM experience on agency to agency communication program  |

**Notes:**  
CII: Industrial/Commercial/Institutional  
PUB: Public  
RSF: Residential Single-Family  
RMF: Residential Multi-Family

<sup>1</sup> California Urban Water Conservation Council (CUWCC) BMP Cost and Savings Study, October 2004 version

<sup>2</sup> California Urban Water Agencies (CUWA) Urban Water Conservation Potential, August 2001.

<sup>3</sup> American Water Works Association, Residential End Uses of Water Study (REUS), 1999

<sup>4</sup> CUWCC BMP 5 Handbook, April 1999

<sup>5</sup> BMP Reporting Database water Savings Calculations, Memo from David Mitchell to CUWCC R&E Committee, April 2003

<sup>6</sup> California Urban Water Conservation Council (CUWCC) MOU, December 2002

<sup>7</sup> CUWCC CII ULFT Savings Study, 1997.

<sup>8</sup> CUWCC Potential Best Management Practices, Year 1 Report, June, 2004.

<sup>9</sup> Nelson, J.O. Residential End Uses of Water and Demand Management Opportunities, Proceedings of the International Symposium on Efficient Water Use in Urban Areas: Innovative Ways of Finding Water for Cities, Kobe, Japan, 1999

<sup>10</sup> Under Market Penetration Goal, the number of target water user group accounts was derived based on billing data and census data and was projected using the DSS model (*SFPUC Wholesale Customer Water Demand Projections Technical Report* (URS 2004))

- Compute the benefits to the wholesale customer based on the water savings for each year the measure is implemented. The benefits calculated for this study include avoided cost of water and reduced hot water use.

The result of these steps provides estimated costs and benefits for each conservation measure assuming each measure is implemented on its own with no other measures implemented concurrently.

The following section describes how the costs and benefits are compared from the utility and retail customer perspective.

### **3.4.3 Analyzing Benefits and Costs**

#### ***Perspectives of Benefits and Costs of Conservation Measures***

Benefit-cost analyses can be performed from several different perspectives. The perspectives most commonly used for benefit-cost analyses include the utility and the community perspectives. The “utility” benefit-cost analysis is based on the benefits and costs to the water provider. The utility perspective offers two advantages for analyzing the benefits and costs of implementing conservation measures. First, it considers only the program costs that will be directly borne by the utility. This enables the utility to fairly compare various water supply options and the potential investments for saving water separate from purchasing water. Second, because revenue shifts are treated as transfer payments, the analysis is not complicated with uncertainties associated with long-term rate projections and rate design assumptions. The principal weakness of the utility perspective is that it does not count the benefits accrued or costs incurred outside of the utility. Costs incurred by retail customers striving to save water while participating in conservation programs are not considered in the utility perspective.

To consider the costs incurred to retail customers, the community perspective is employed. The “community” benefit-cost analysis includes both the utility benefit and costs combined with retail customer benefits and costs. For this study, these include benefits derived from reduced hot water use and costs of implementing the measure beyond the utility’s responsibility.

Both the utility and retail customer perspectives are evaluated in this study. The following describes how the conservation measures were compared to one another from this perspective.

#### ***Comparison of Measures Using Benefits and Costs***

The conservation measures were evaluated individually for all the wholesale customers, and the results of these evaluations are included in Appendix D. The output presents how much water the measures would save, how much they would cost and what the benefit-cost ratios are if the measures were run on a stand-alone basis, i.e. without interaction or overlap from other measures that might address the same end use(s). Benefits and costs are defined below. Table 3-3 presents an example of how benefits and costs are illustrated for each wholesale customer.

- Utility benefits and costs: those benefits and costs that the utility would receive or spend.
- Utility-Customer benefits and costs: utility-customer benefits equal utility benefits plus retail customer energy benefits (cost to heat water). Utility-customer costs include the sum of utility and retail customer costs.



## SECTION THREE

## Evaluation of Conservation Measures

- Water savings benefits: these are based on assigning a typical unit value for avoided cost of water. In this instance, \$1076/acre-foot was utilized for SFPUC purchases. Wholesale customers with alternate supplies were able to utilize a blended cost of water for 2015.
- Costs for the utility: annual administration costs and payment of rebates or purchase of devices or services as specified in the measure design (Table 3-2).
- Retail Customer costs: costs to retail customers of implementing the measure and maintaining its effectiveness over the life of the measure (Table 3-2).

Potential benefits and costs not included in this evaluation and the reasons they were excluded is described in a subsection below.

**Table 3-3**  
**Summary of SFPUC Conservation Evaluation Results by Measure**  
**(example wholesale customer)**

| Conservation Measure  | Water Utility Benefit-Cost Ratio | Utility-Customer Benefit-Cost Ratio | “30-year” Average Annual Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|---|----------------------------------|-------------------------------------|--|---|---------------------|-------------------------------|
| 1. Residential Water Surveys  | 0.7                              | 1.3                                 | 0.182  | \$1,117                                 | (\$728,051)         | \$582,863                     |
| 2. Residential Retrofit   | 1.4                              | 7.4                                 | 0.048  | \$583                                   | \$122,938           | \$324,553                     |
| 3. Large Landscape Conservation   | 0.7                              | 0.6                                 | 0.085  | \$1,125                                 | (\$371,822)         | \$308,092                     |
| 4. Water Budgets  | 14.2                             | 14.2                                | 0.631  | \$54                                    | \$5,117,703         | \$388,120                     |
| 5. Clothes Washer Rebate  | 1.2                              | 2.1                                 | 0.058  | \$689                                   | \$78,689            | \$482,097                     |
| 6. Public Information Program   | 0.7                              | 1.7                                 | 0.206  | \$1,154                                 | (\$836,231)         | \$743,780                     |
| 7. Commercial Water Audits  | 1.6                              | 2.1                                 | 0.227  | \$480                                   | \$698,967           | \$742,507                     |
| 8. Commercial ULF Toilet and Urinal Rebates   | 2.5                              | 1.4                                 | 0.005  | \$323                                   | \$24,814            | \$18,652                      |
| 9. Residential ULF Toilet Rebate  | 0.5                              | 0.2                                 | 0.503  | \$1,475                                 | (\$4,005,159)       | \$5,155,240                   |
| 10. Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 4.1                              | 0.3                                 | 0.615  | \$191                                   | \$4,071,508         | \$838,565                     |
| 11. Home Leak Detection and Repair  | 0.3                              | 0.3                                 | 0.039  | \$3,646                                 | (\$1,178,131)       | \$926,294                     |
| 12. Rebates for 6/3 dual flush or 4 liter toilets   | 0.8                              | 0.6                                 | 0.467  | \$908                                   | (\$769,295)         | \$2,778,748                   |
| 13. ET Controller Rebates   | 0.5                              | 0.4                                 | 0.092  | \$1,343                                 | (\$657,871)         | \$450,424                     |

**Table 3-3  
Summary of SFPUC Conservation Evaluation Results by Measure  
(example wholesale customer)**

| <b>Conservation Measure</b>   | <b>Water Utility Benefit-Cost Ratio</b> | <b>Customer Benefit-Cost Ratio</b> | <b>“30-year” Average Annual Water Savings (MGD)</b> | <b>Cost of Savings per Unit Volume (\$/MG)</b> | <b>Net Utility Benefit</b> | <b>First Five Years Utility Cost</b> |
|---|---|------------------------------------|---|--|----------------------------|--------------------------------------|
| 14. Xeriscape education and staff training at retail garden/irrigation supply houses            | 6.4                                     | 0.3                                | 0.05  | \$109  | \$334,292                  | \$16,500                             |
| 15. Homeowner irrigation classes  | 2.9                                     | 0.2                                | 0.022   | \$243  | \$116,054                  | \$16,500                             |
| 16. Promote water efficient plantings at new homes  | 0.4                                     | 0                                  | 0.006   | \$1,662  | (\$59,877)                 | \$38,662                             |
| 17. Offer incentives for replacement of clothes washers in coin-operated laundries              | 1.2                                     | 5.4                                | 0.007   | \$634  | \$12,784                   | \$55,125                             |
| 18. Incentives for retrofitting sub-metering  | 1.7                                     | 1                                  | 0.016   | \$444  | \$57,097                   | \$46,853                             |
| 19. Require sub-metering multifamily units  | 3                                       | 1.4                                | 0.048   | \$241  | \$258,394                  | \$47,830                             |
| 20. Rebate efficient clothes washers  | 5                                       | 19.5                               | 0.063   | \$162  | \$464,197                  | \$123,663                            |
| 21. Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 5.1                                     | 0.7                                | 0.046   | \$138  | \$293,709                  | \$20,967                             |
| 22. Restaurant low flow spray rinse nozzles   | 5.9                                     | 32.1                               | 0.042   | \$133  | \$306,960                  | \$69,063                             |
| 23. Focused water audits for hotels/motels  | 8.9                                     | 5.8                                | 0.062   | \$85   | \$466,308                  | \$34,688                             |
| 24. WAVE Program (US EPA) for hotels  | 48.3                                    | 2.1                                | 0.004   | \$16   | \$34,305                   | \$426                                |
| 25. Hotel retrofit (w/financial assistance)   | 2.4                                     | 1.3                                | 0.033   | \$318  | \$161,732                  | \$69,500                             |
| 26. Award program for water savings by businesses   | 1.9                                     | 0.6                                | 0.009   | \$377  | \$33,758                   | \$10,350                             |
| 27. Replace inefficient water using equipment   | 0.9                                     | 0.2                                | 0.041   | \$817  | (\$31,207)                 | \$215,594                            |
| 28. Require 0.5 gal/flush urinals in new buildings  | 9                                       | 9                                  | 0.005   | \$79   | \$34,354                   | \$1,138                              |

**Table 3-3  
Summary of SFPUC Conservation Evaluation Results by Measure  
(example wholesale customer)**

| <b>Conservation Measure</b>                                  | <b>Water Utility Benefit-Cost Ratio</b> | <b>Utility-Customer Benefit-Cost Ratio</b> | <b>“30-year” Average Annual Water Savings (MGD)</b> | <b>Cost of Savings per Unit Volume (\$/MG)</b> | <b>Net Utility Benefit</b> | <b>First Five Years Utility Cost</b> |
|--|---|--|---|--|----------------------------|--------------------------------------|
| 29. Financial incentives for complying with water use budget | 5.6                                     | 2  | 0.377   | \$133  | \$2,641,928                | \$361,142                            |
| 30. Financial incentives for irrigation upgrades             | 1.3                                     | 0.7  | 0.006   | \$562  | \$10,018                   | \$11,074                             |
| 31. Require dedicated irrigation meters for new accounts     | 3                                       | 0.4  | 0.026   | \$235  | \$138,551                  | \$4,400                              |
| 32. Water Utility / City Department water reduction goals    | 6.5                                     | 1.4  | 0.085   | \$116  | \$609,365                  | \$64,606                             |

**Notes:**  
(\$31,207) Results shown in red and in parentheses indicate a negative value.

Source: DSS Models

**Present Value Costs**

The time value of money is explicitly considered in this study. The value of all future costs and benefits is discounted to 2001 (the base year) at an interest rate of 3.0 percent. The DSS model calculates this “real” interest rate, by adjusting the current nominal interest rate (assumed to be 6.1 percent) by the rate of inflation (assumed to be 3 percent). Cash flows discounted in this manner are referred to as "Present Value" sums throughout this report. The higher the discount rate, the lower the present value of future expenditures. So, if the discount rate is 5 percent, then the impact of future costs and benefits would be less than using a discount rate of 3 percent. If the discount rate is zero percent, then future costs and benefits are counted at their actual value and they would enter the benefit-cost ratio calculation without any reduction due to discounting.

Conservation measure costs are normally expended over 5-10 years and the benefits rise with the expenditure and then continue on after the costs have been expended, sometimes indefinitely. If costs were all expended in year one but benefits occurred over 30 years then raising the discount rate would lower the present value of benefits and, thereby, lower the benefit-cost ratio.

**Avoided Cost of Water**

The major benefit to the wholesale customer considered for this study was the avoided price of purchased SFPUC water. Because the cost of water is scheduled to increase, in part to cover the cost of the Capital Improvement Program, the future 2015 projected price of SFPUC water was

used in this study.<sup>13</sup> Table 3-4 provides the estimated cost of SFPUC water from 2003 to 2015. The year 2015 is midway between the beginning and end of the 30-year planning horizon of this study and is towards the end of the implementation period for most of the included measures (10-15 years). With this rapid rise in the price of water, many conservation measures are cost-effective for the wholesale customers.

A few wholesale customers requested the potential use of a cost of water other than that shown in Table 3-4. For example, Alameda County Water District (ACWD) blends their SFPUC water with lower quality groundwater. Therefore, for this study the benefits for ACWD were evaluated based on a blended cost of water.

**Table 3-4**  
**SFPUC Cost of Water Schedule 2003–2015**

| <b>Year</b> | <b>\$/MG</b> | <b>\$/AF</b> |
|-------------|--------------|--------------|
| 2003        | 1,176.57     | 383.33       |
| 2004        | 1,492.54     | 486.27       |
| 2005        | 1,672.76     | 544.99       |
| 2006        | 1,735.79     | 565.52       |
| 2007        | 1,920.32     | 625.64       |
| 2008        | 1,986.03     | 647.05       |
| 2009        | 2,234.57     | 728.02       |
| 2010        | 2,635.86     | 858.76       |
| 2011        | 2,946.20     | 959.87       |
| 2012        | 3,334.05     | 1,086.23     |
| 2013        | 3,297.98     | 1,074.48     |
| 2014        | 3,453.86     | 1,125.27     |
| 2015        | 3,302.52     | 1,075.96     |

*Source: SFPUC Capital Improvement Program Long-Range Financial Plan Update 2003*

**Potential Benefits and Costs Not Evaluated**

There are several externalities that are often considered to provide benefits and costs to implementing water use efficiency programs, including conservation. However, these externalities are often omitted from cost-effectiveness analyses because they are difficult to quantify and have varying values to different communities and interested parties.<sup>14</sup> Because this study was performed by the SFPUC as a wholesale water agency, the SFPUC did not find it appropriate to assign generic values to such externalities and did not include them in the cost-effectiveness analysis. Similarly, because the future cost of SFPUC water is estimated to be

<sup>13</sup> If a lower cost of water, such as the current price of water, was used for the cost-effectiveness evaluation, the benefit-cost ratios would tend to be lower. If a higher cost of water, such as what we expect to see beyond 2015, was used for the cost-effectiveness evaluation, the benefit-cost ratios would tend to be higher.

<sup>14</sup> The California Urban Water Conservation Council recently embarked on an environmental benefits study, to research a way to account for and quantify these externalities. This work should be available in several years.

three times higher than the current cost of water, the majority of the conservation measures considered were found to be cost-effective without considering such externalities. The SFPUC also anticipates that the wholesale customers will determine if other costs or benefits should be incorporated into their decision-making process as they move forward in designing conservation programs to implement in their service areas. The following provides a list of potential benefits and costs that were not considered in this study. These include:<sup>15</sup>

- Reduced water runoff from reduced excess irrigation. This may improve stream and Bay water quality due to the reduction in pesticides and herbicides applied to the land and contained in the irrigation runoff. However, irrigation runoff water also serves to increase summer stream flows, as possible environmental benefit.
- Reduced solid waste from more native and less dense landscapes due to a possible shift away from turf oriented landscapes.
- Reduced wastewater collection and treatment can reduce chemical use, energy consumption and the volume discharged into receiving waters. This is a motivating factor for conservation and flow reduction for the cities that discharge into South San Francisco Bay (Milpitas, Palo Alto, San Jose, Santa Clara, and Sunnyvale).
- Reduced energy use in treating water delivered by SFPUC and distribution by wholesale customers, and other ancillary benefits such as reduced greenhouse gas emissions from power plants where some of this energy is generated.
- Increased economic activity by those involved in conservation program implementation (contractors and vendors).
- Reduced income of landscape maintenance companies and nurseries due to a shift away from high maintenance type landscapes.
- Increased retail customer cost in hiring landscape architect companies to design low water use landscapes as opposed to simplistic turf landscaping.

Value of the homeowner or landscape contractor's time in being more vigilant about irrigation including adjusting irrigation times more frequently and repairing leaks.

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<sup>15</sup> Water Conservation Programs - A Planning Manual, American Water Works Association, Manual M52, final draft to be published 2005.

## **SECTION FOUR Wholesale Customer Conservation Program Development**

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### **4.1 INTRODUCTION**

This section describes the process the wholesale customers used to build the three water conservation programs. Using the results of the benefit-cost analysis and other factors related to implementability, each wholesale customer selected conservation measures and packaged them into three individual conservation programs, referred to as Programs A, B, and C. The three potential programs chosen by each wholesale customer provide a range of water conservation savings specifically related to the measures chosen for their overall conservation program.

### **4.2 DEVELOPMENT OF POTENTIAL WHOLESALE CUSTOMER CONSERVATION PROGRAMS**

In order to identify the range of water conservation savings that are reasonable and cost-effective, the water conservation measures were grouped together into packages. Each wholesale customer selected water conservation measures for the three packages (programs) based on the following factors:

- cost-effectiveness of individual measure
- potential water savings for individual measures
- service area water use characteristics
- retail customer behavioral patterns
- implementation
- budgetary consideration
- ease of implementation

Other factors included whether or not a future regional water conservation program offered by SFPUC or BAWSCA would be a better forum for implementing a specific measure, particularly those measures that would benefit from the economies of scale that a regional program can provide.<sup>16</sup>

Three programs (Programs A, B, and C) were designed to accomplish an increasing level of water savings, and define the range of conservation that appears to be reasonable and cost-effective for each wholesale customer. The packages of measures (programs) are not intended to be rigid programs but rather to demonstrate the range in savings that could be generated if selected measures were run together. In this step the DSS model accounts for the overlap in water savings and benefits, and estimates the combined savings and benefits from the packages of measures as programs.

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<sup>16</sup> The SFPUC and BAWSCA are conducting independent reviews of the potential for a regional water conservation program that would be accessible to the wholesale customers. Verbal feedback from wholesale customers indicated that there are specific measures that were not included in an individual agency's conservation programs but that the agency would be interested in implementing if it were part of a regional program. This applied primarily to educational programs, audits, and surveys that often require the use of outside expertise and specialized consultants.

## SECTION FOUR Wholesale Customer Conservation Program Development

It is useful to compare the cumulative costs of the conservation programs with the additional water savings achieved (including the plumbing code) from Program A to Program C. This illustrates whether the addition of conservation measures in Programs B and C is cost-effective. Figure 4-1 illustrates the increasing level of water savings for money spent over time showing this relationship for an example wholesale customer's total potential water savings due to the plumbing code and Programs A, B, and C in the year 2031.<sup>17</sup> The slope of the line between the programs is indicative of the cost-effectiveness of going to the next increasing program. For example, if the slope of the line is flat, then the water savings returns are not very high for the amount of money spent. If the slope of the line is steep, then the savings are great compared to the amount of money spent.

In general, as more conservation measures are added, a point is reached beyond which the water savings increase only marginally in response to spending more money. Appendix D provides a similar illustrative figure for each wholesale customer that displays the savings from the plumbing code and Programs A, B, and C.

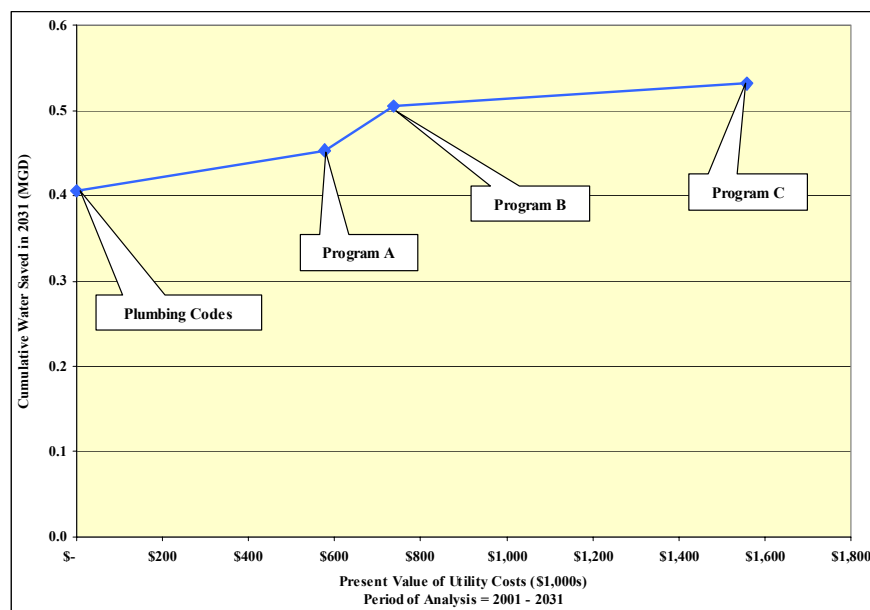


Figure 4-1 Present Value of Utility Costs versus Water Saved (30-Year Analysis) (example customer)

### 4.2.1 Definition of Conservation Programs

The three programs of conservation measures were developed to define the range of conservation savings that appear to be reasonable and cost-effective. The following describes Programs A, B, and C:

<sup>17</sup> Because a thirty-year analysis was completed using the base year 2001, wholesale customers received information through the year 2031, which is shown in the example Figure 4-1 and in wholesale customer results presented in Appendix D.

## **SECTION FOUR Wholesale Customer Conservation Program Development**

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- Program A is defined as a continuation of the measures from the short list of 32 measures that the wholesale customer is currently running.
- Programs B contains the measures from Program A plus the additional measures that increase conservation incorporating measures that are most cost-effective and implementable for wholesale customers and that provide the greatest amount of savings for monies expended.
- Program C contains the Program A and the Program B measures plus the additional measures creating an upper bound conservation program that is considered achievable and cost-effective.

### **4.2.2 Selection of Measures for Program A**

For the most part, Program A consisted of those conservation measures from the list of 32 measures that each wholesale customer is currently implementing. In some cases, the wholesale customer was not implementing the conservation measure to the full extent described in Table 3-2 in terms of market penetration goal or conservation measure length. Therefore, some wholesale customers chose to include such measures in Program A acknowledging the revised implementation factors or they included them in Program B. Some wholesale customers are implementing conservation measures not included in the list of 32 measures identified for this study, such as conservation pricing, outreach or educational programs. It is difficult to quantify savings for these measures and thus, they were excluded from this study as described in Section 2.4. Appendix A provides a list of measures currently being implemented by each wholesale customer and Appendix D provides the list of measures currently being implemented by each wholesale customer and the measures included in their Program A.

### **4.2.3 Selection of Measures for Programs B and C**

Each wholesale customer was presented with the individual measure cost-effectiveness analysis in order to package Programs B and C for their service area. The overall goal was to find the full range of conservation based on what appeared cost-effective and implementable.

A collective process was used to develop the programs. Using the information from the benefit-cost analysis, additional evaluation factors, and specific assumptions and terms of the measures evaluated for service areas, each wholesale customer selected measures for Program B based on what they perceived as a reasonable representation of potentially achievable water savings by the end of the study period. Wholesale customers selected measures for Program C based on the full extent of what appeared cost-effective and implementable. Appendix D provides detailed information regarding the wholesale customers' Programs A, B, and C, including selected conservation measures for each program, and the benefits and costs of each measure evaluated, similar to the example table (Table 3-3).



## 5.1 INTRODUCTION

This section provides the results of the benefit-cost analysis of conservation programs A, B, and C for each wholesale customer developed through the process described in Section 4 of this Report. As described below, a benefit-cost analysis was conducted for each of the three conservation programs, calculating the same type of benefits and costs that were computed for the individual conservation measures. In addition to describing the benefit-cost analysis for the conservation programs, this section also describes the concurrence process of the conservation input and outputs by the wholesale customers.

The results presented in this section are relevant to the individual wholesale customers and the specific conservation programs chosen for each program. The water savings presented in this section are savings considered achievable for the individual wholesale customers if they were to implement the conservation measures included in their three programs. The water savings do not necessarily reflect water savings for the SFPUC regional water system because several wholesale customers meet their demands with multiple sources of supply.

## 5.2 BENEFIT-COST ANALYSIS OF WHOLESALE CUSTOMER PROGRAMS

Tables 5-1 and 5-2 show the results of the benefit-cost analysis of the three conservation programs developed by each wholesale customer. For each wholesale customer, the benefit-cost ratio, costs of program implementation, 2030 water savings, cost of saved water and water savings as a percent of the 2030 new demand are shown for all three conservation programs. The factors summarized in the tables are defined in the glossary of this report.

### ***Conservation Measure Overlap***

One critical factor that must be considered in performing a benefit-cost analysis on the three conservation programs is water savings overlap among certain conservation measures. This was not necessary to consider when performing a benefit-cost analysis for the individual conservation measures, only as they were put into programs with other measures. This occurs because many of the individual water conservation measures save water while targeting some of the same end uses. When a program of measures is identified that has overlapping targeted end uses, the DSS Model accounts for the overlap and calculates the actual savings based on the conservation measures working together. The DSS model accomplishes this by assigning each measure a water savings impact factor. An impact factor is defined to be 1.0 minus the measure's water savings expressed as a decimal. For example, an impact factor for a measure that reduces a specific end use, such as residential irrigation use, 10 percent is expressed as 0.9. If two measures operate on this same end use, with each having an impact factor of 0.9, then the combined savings is not the sum of the two (20 percent) but rather 1.0 minus the product of the two ( $[1 - 0.9 \times 0.9] = [1 - 0.81]$  or a 19 percent savings). This process avoids double counting water savings.

# SECTION FIVE

# SFPUC Wholesale Customer Service Area Conservation Evaluation Results

**Table 5-1  
Conservation Savings as a Percentage of Total New Demand by SFPUC Wholesale Customer**

| SFPUC Wholesale Customer  | 2001 DSS Base Year Total Water Demand <sup>1</sup> (MGD) | 2030 DSS Projected Total Water Demand <sup>1</sup> (MGD) | 2030 Demand Increase (Total New Demand) from 2001 (MGD) | 2030 Water Savings Due to Conservation Programs (MGD) |                |                | Water Savings as a Percentage of 2030 Total New Demand |                |                |
|---|--|--|---|---|----------------|----------------|--|----------------|----------------|
|   |  |  |   | A   | B <sup>2</sup> | C <sup>3</sup> | A  | B <sup>2</sup> | C <sup>3</sup> |
| Alameda County Water District                                   | 51.1   | 59.3   | 8.20  | 2.020   | 3.159          | 3.483          | 24.64%   | 38.53%         | 42.48%         |
| Brisbane, City of   | 0.4  | 0.93   | 0.49  | 0.002   | 0.041          | 0.050          | 0.50%  | 8.37%          | 10.14%         |
| Burlingame, City of   | 4.8  | 4.9  | 0.12  | 0.113   | 0.245          | 0.375          | 94.46%   | 203.82%        | 312.80%        |
| California Water Service Company - Bear Gulch District          | 13.4   | 13.9   | 0.48  | 0.217   | 0.930          | 0.962          | 45.22%   | 193.74%        | 200.45%        |
| California Water Service Company - Mid-Peninsula District       | 17.2   | 18.1   | 0.94  | 0.415   | 0.863          | 1.166          | 44.18%   | 91.84%         | 124.07%        |
| California Water Service Company - South San Francisco District | 8.9  | 9.9  | 1.00  | 0.208   | 0.560          | 0.650          | 20.84%   | 56.04%         | 64.96%         |
| Coastside County Water District                                 | 2.6  | 3.2  | 0.63  | 0.125   | 0.183          | 0.239          | 19.80%   | 29.02%         | 37.92%         |
| Daly City, City of  | 8.7  | 9.1  | 0.44  | 0.093   | 0.448          | 0.531          | 21.22%   | 101.71%        | 120.65%        |
| East Palo Alto, City of   | 2.5  | 4.8  | 2.30  | 0.009   | 0.092          | 0.163          | 0.40%  | 4.00%          | 7.11%          |
| Estero Municipal Improvement District                           | 5.8  | 6.8  | 0.98  | 0.469   | 0.624          | 0.720          | 47.83%   | 63.67%         | 73.49%         |
| Guadalupe Valley Municipal Improvement District                 | 0.3  | 0.81   | 0.49  | 0.001   | 0.097          | 0.098          | 0.27%  | 19.88%         | 20.06%         |
| Hayward, City of  | 19.3   | 28.7   | 9.40  | 0.195   | 0.755          | 1.202          | 2.07%  | 8.04%          | 12.79%         |
| Hillsborough, Town of   | 3.7  | 3.9  | 0.20  | 0.056   | 0.308          | 0.427          | 28.22%   | 154.18%        | 213.26%        |
| Los Trancos County Water District                               | 0.1  | 0.14   | 0.03  | 0.002   | 0.002          | 0.003          | 4.55%  | 6.92%          | 9.79%          |
| Menlo Park, City of   | 4.1  | 4.7  | 0.61  | 0.014   | 0.160          | 0.349          | 2.22%  | 26.30%         | 57.18%         |
| Mid-Peninsula Water District                                    | 3.7  | 3.8  | 0.15  | 0.048   | 0.102          | 0.129          | 32.22%   | 68.01%         | 86.10%         |
| Millbrae, City of   | 3.1  | 3.3  | 0.17  | 0.078   | 0.113          | 0.236          | 46.11%   | 66.66%         | 138.88%        |
| Milpitas, City of   | 12.0   | 17.7   | 5.74  | 0.361   | 0.601          | 0.968          | 6.28%  | 10.47%         | 16.87%         |
| Mountain View, City of  | 13.3   | 14.8   | 1.53  | 0.241   | 0.945          | 1.207          | 15.72%   | 61.76%         | 78.89%         |
| North Coast County Water District                               | 3.6  | 3.8  | 0.17  | 0.126   | 0.185          | 0.300          | 74.01%   | 108.98%        | 176.58%        |
| Palo Alto, City of  | 14.2   | 14.7   | 0.49  | 0.229   | 0.466          | 0.592          | 46.84%   | 95.13%         | 120.83%        |
| Purissima Hills Water District                                  | 2.2  | 3.3  | 1.12  | 0.055   | 0.077          | 0.288          | 4.89%  | 6.85%          | 25.76%         |
| Redwood City, City of   | 11.9   | 13.4   | 1.54  | 0.593   | 0.828          | 1.026          | 38.53%   | 53.77%         | 66.61%         |
| San Bruno, City of  | 4.4  | 4.5  | 0.07  | 0.028   | 0.185          | 0.266          | 39.59%   | 264.75%        | 380.48%        |
| San Jose, City of (portion of north San Jose)                   | 5.2  | 6.5  | 1.31  | 0.155   | 0.157          | 0.595          | 11.85%   | 11.99%         | 45.42%         |
| Santa Clara, City of  | 25.8   | 33.9   | 8.10  | 0.647   | 1.011          | 1.233          | 7.98%  | 12.48%         | 15.22%         |
| Stanford University   | 0.2  | 0.31   | 0.14  | 0.003   | 0.009          | 0.015          | 2.27%  | 6.50%          | 11.00%         |
| Skyline County Water District                                   | 3.9  | 6.8  | 2.94  | 0.488   | 0.646          | 0.663          | 16.59%   | 21.98%         | 22.53%         |
| Sunnyvale, City of  | 24.8   | 26.8   | 1.99  | 0.640   | 0.711          | 1.596          | 32.14%   | 35.75%         | 80.20%         |
| Westborough Water District                                      | 1.0  | 0.88   | -0.11   | 0.015   | 0.020          | 0.055          | -13.72%  | -18.60%        | -49.58%        |
| <b>Total:</b>   | <b>272</b>   | <b>324</b>   | <b>52</b>   | <b>7.65</b>   | <b>14.53</b>   | <b>19.59</b>   | <b>15%</b>   | <b>28%</b>     | <b>38%</b>     |

<sup>1</sup>SFPUC Wholesale Customer Water Demand Projections (URS 2004). 2030 demand includes plumbing code savings.

<sup>2</sup>Program B is Program A plus additional measures.

<sup>3</sup>Program C is Program B plus additional measures.

Source: DSS Models

**Table 5-2  
Program Specific Conservation Evaluation Results by SFPUC Wholesale Customer**

| SFPUC Wholesale Customer  | Water Utility Benefit-Cost Ratio (30-Year Period) |       |       | Present Value of Water Utility Costs (\$1,000) (30-Year Period) |             |             | 2030 Water Savings due to Conservation Programs (MGD) |       |       |       | 2030 Outdoor Water Savings due to Conservation Programs (MGD) |       |       | Cost of Water Saved (\$/AF) (30-Year Period) |          |          |
|---|---|-------|-------|---|-------------|-------------|---|-------|-------|-------|---|-------|-------|--|----------|----------|
|   | A   | B     | C     | A   | B           | C           | (Plumbing Code) <sup>1</sup>                          | A     | B     | C     | A   | B     | C     | A  | B        | C        |
| Alameda County Water District                                   | 1.64  | 1.44  | 1.51  | \$8,507.22  | \$14,976.62 | \$15,320.87 | 4.73  | 2.020 | 3.159 | 3.483 | 1.273   | 1.781 | 1.979 | \$153.17                                     | \$172.78 | \$164.09 |
| Brisbane, City of   | 1.04  | 7.90  | 7.49  | \$46.29   | \$72.83     | \$99.60     | 0.16  | 0.002 | 0.041 | 0.050 | 0.000   | 0.035 | 0.035 | \$639.68                                     | \$79.60  | \$84.43  |
| Burlingame, City of   | 1.57  | 2.15  | 2.22  | \$1,599.80  | \$2,072.71  | \$3,027.30  | 0.63  | 0.113 | 0.245 | 0.375 | 0.017   | 0.083 | 0.134 | \$420.18                                     | \$300.05 | \$290.88 |
| California Water Service Company - Bear Gulch District          | 2.43  | 3.84  | 3.74  | \$1,986.45  | \$3,709.05  | \$3,925.12  | 1.08  | 0.217 | 0.930 | 0.962 | 0.068   | 0.635 | 0.658 | \$274.67                                     | \$164.79 | \$169.01 |
| California Water Service Company - Mid-Peninsula District       | 1.33  | 1.66  | 1.52  | \$7,293.09  | \$10,406.64 | \$14,204.31 | 2.08  | 0.415 | 0.863 | 1.166 | 0.038   | 0.167 | 0.375 | \$497.41                                     | \$393.93 | \$424.50 |
| California Water Service Company - South San Francisco District | 1.08  | 1.62  | 1.75  | \$4,344.91  | \$6,511.28  | \$6,699.77  | 0.92  | 0.208 | 0.560 | 0.650 | 0.047   | 0.139 | 0.170 | \$608.43                                     | \$399.81 | \$366.97 |
| Coastside County Water District                                 | 2.15  | 2.16  | 1.86  | \$1,098.06  | \$1,537.43  | \$2,296.57  | 0.26  | 0.125 | 0.183 | 0.239 | 0.071   | 0.115 | 0.135 | \$301.67                                     | \$299.25 | \$347.66 |
| Daly City, City of  | 1.52  | 1.91  | 1.86  | \$1,241.75  | \$4,759.30  | \$5,604.29  | 1.06  | 0.093 | 0.448 | 0.531 | 0.020   | 0.076 | 0.106 | \$437.88                                     | \$341.95 | \$349.91 |
| East Palo Alto, City of   | 1.47  | 2.26  | 2.26  | \$134.40  | \$865.87    | \$1,401.72  | 0.33  | 0.009 | 0.092 | 0.163 | 0.001   | 0.024 | 0.043 | \$462.08                                     | \$292.63 | \$288.97 |
| Estero Municipal Improvement District                           | 5.29  | 5.89  | 5.01  | \$1,584.51  | \$1,817.26  | \$2,405.02  | 0.42  | 0.469 | 0.624 | 0.720 | 0.373   | 0.479 | 0.538 | \$122.49                                     | \$109.47 | \$128.20 |
| Guadalupe Valley Municipal Improvement District                 | 0.63  | 20.15 | 18.34 | \$30.05   | \$56.66     | \$63.56     | 0.03  | 0.001 | 0.097 | 0.098 | 0.000   | 0.096 | 0.096 | \$1,058.43                                   | \$32.15  | \$35.36  |
| Hayward, City of  | 2.51  | 2.53  | 2.83  | \$1,461.35  | \$4,268.16  | \$6,287.63  | 1.45  | 0.195 | 0.755 | 1.202 | 0.042   | 0.493 | 0.511 | \$264.48                                     | \$248.37 | \$222.26 |
| Hillsborough, Town of   | 2.65  | 6.51  | 6.09  | \$460.88  | \$712.33    | \$1,030.60  | 0.17  | 0.056 | 0.308 | 0.427 | 0.020   | 0.259 | 0.353 | \$251.33                                     | \$96.78  | \$103.10 |
| Los Trancos County Water District                               | 2.08  | 2.02  | 1.81  | \$14.73   | \$20.00     | \$31.18     | 0.01  | 0.002 | 0.002 | 0.003 | 0.001   | 0.002 | 0.002 | \$321.09                                     | \$321.35 | \$356.27 |
| Menlo Park, City of   | 1.97  | 9.41  | 4.04  | \$144.02  | \$269.05    | \$1,407.87  | 0.22  | 0.014 | 0.160 | 0.349 | 0.005   | 0.141 | 0.243 | \$341.59                                     | \$67.85  | \$157.58 |
| Mid-Peninsula Water District                                    | 1.74  | 3.04  | 1.84  | \$576.26  | \$737.76    | \$1,557.89  | 0.40  | 0.048 | 0.102 | 0.129 | 0.016   | 0.016 | 0.016 | \$384.03                                     | \$217.32 | \$357.76 |
| Millbrae, City of   | 1.45  | 1.75  | 2.71  | \$1,168.33  | \$1,295.73  | \$1,548.93  | 0.34  | 0.078 | 0.113 | 0.236 | 0.016   | 0.051 | 0.130 | \$455.13                                     | \$374.78 | \$237.02 |
| Milpitas, City of   | 2.55  | 3.89  | 3.72  | \$2,578.37  | \$2,762.32  | \$4,174.56  | 0.72  | 0.361 | 0.601 | 0.968 | 0.108   | 0.277 | 0.536 | \$253.27                                     | \$166.30 | \$170.89 |
| Mountain View, City of  | 1.61  | 4.78  | 4.60  | \$2,986.05  | \$3,390.77  | \$4,493.57  | 1.20  | 0.241 | 0.945 | 1.207 | 0.056   | 0.760 | 0.822 | \$400.01                                     | \$132.20 | \$137.47 |
| North Coast County Water District                               | 1.51  | 1.82  | 1.99  | \$1,814.38  | \$1,974.94  | \$2,703.70  | 0.55  | 0.126 | 0.185 | 0.300 | 0.028   | 0.073 | 0.125 | \$436.92                                     | \$357.82 | \$323.27 |
| Palo Alto, City of  | 2.99  | 2.64  | 2.68  | \$1,395.82  | \$3,179.26  | \$3,943.01  | 1.24  | 0.229 | 0.466 | 0.592 | 0.108   | 0.174 | 0.220 | \$218.51                                     | \$245.08 | \$241.09 |
| Purissima Hills Water District                                  | 6.24  | 6.41  | 10.02 | \$149.49  | \$184.84    | \$410.81    | 0.02  | 0.055 | 0.077 | 0.288 | 0.043   | 0.066 | 0.278 | \$104.10                                     | \$99.12  | \$62.67  |
| Redwood City, City of   | 2.45  | 2.44  | 2.40  | \$5,058.12  | \$6,532.89  | \$7,949.23  | 1.51  | 0.593 | 0.828 | 1.026 | 0.292   | 0.489 | 0.546 | \$269.55                                     | \$267.33 | \$270.39 |
| San Bruno, City of  | 1.42  | 1.90  | 2.08  | \$422.46  | \$1,929.49  | \$2,297.25  | 0.68  | 0.028 | 0.185 | 0.266 | 0.004   | 0.028 | 0.082 | \$475.79                                     | \$341.86 | \$309.46 |
| San Jose, City of (portion of north San Jose)                   | 4.55  | 4.55  | 11.25 | \$563.22  | \$570.75    | \$896.29    | 0.17  | 0.155 | 0.157 | 0.595 | 0.054   | 0.054 | 0.485 | \$139.39                                     | \$139.55 | \$57.07  |
| Santa Clara, City of  | 1.72  | 2.12  | 2.03  | \$5,440.79  | \$6,064.03  | \$7,683.17  | 1.77  | 0.647 | 1.011 | 1.233 | 0.276   | 0.568 | 0.633 | \$297.51                                     | \$237.57 | \$248.23 |
| Stanford University   | 1.47  | 2.32  | 1.90  | \$51.96   | \$82.22     | \$150.44    | 0.04  | 0.003 | 0.009 | 0.015 | 0.000   | 0.001 | 0.004 | \$447.35                                     | \$279.12 | \$338.59 |
| Skyline County Water District                                   | 2.43  | 2.19  | 2.24  | \$3,514.67  | \$5,431.40  | \$5,508.50  | 0.42  | 0.488 | 0.646 | 0.663 | 0.341   | 0.491 | 0.491 | \$305.94                                     | \$335.00 | \$329.91 |
| Sunnyvale, City of  | 1.95  | 2.15  | 2.78  | \$6,469.89  | \$6,614.58  | \$10,070.61 | 2.72  | 0.640 | 0.711 | 1.596 | 0.199   | 0.199 | 0.779 | \$333.34                                     | \$303.93 | \$231.40 |
| Westborough Water District                                      | 0.76  | 0.81  | 1.61  | \$463.32  | \$578.89    | \$672.79    | 0.13  | 0.015 | 0.020 | 0.055 | 0.001   | 0.001 | 0.031 | \$867.84                                     | \$815.44 | \$407.51 |

Source: DSS Models

<sup>1</sup>Plumbing code savings represent water use savings associated with the natural replacement of plumbing fixtures with water-efficient models (i.e., toilets, showerheads, and washing machines).

**5.3 CONSERVATION EVALUATION RESULTS**

Tables 5-3 and 5-4 show the conservation evaluation results as tabulated for the entire SFPUC wholesale customer service area.

**Table 5-3  
Program-Specific Conservation Evaluation Results for  
SFPUC Wholesale Customer Service Area**

| SFPUC Wholesale Customer Area Conservation Program | Water Utility Benefit-Cost Ratio (30-Year Period) | Present Value of Water Utility Costs (\$1,000) (30-Year Period) | 2030 Water Savings due to Conservation Programs (MGD) | 2030 Outdoor Water Savings due to Conservation Programs (MGD) | Cost of Water Saved (\$/AF) (30-Year Period) | Total Potential 2030 Water Savings (MGD) |
|--|---|---|---|---|--|--|
| (Plumbing Code) <sup>1</sup>                       | NA  | NA  | -   | NA  | NA   | 25.4                                     |
| Program A  | 1.95  | \$62,601  | 7.65  | 3.52  | \$280  | 33.1 <sup>2</sup>                        |
| Program B  | 2.35  | \$93,385  | 14.53   | 7.77  | \$235  | 40.0 <sup>3</sup>                        |
| Program C  | 2.50  | \$117,866   | 19.59   | 10.56   | \$226  | 45.0 <sup>4</sup>                        |

Source: DSS Models

<sup>1</sup>Plumbing code savings represent water use savings associated with the natural replacement of plumbing fixtures with water-efficient models (i.e., toilets, showerheads, or washing machines).

<sup>2</sup>Includes plumbing code savings and Program A savings.

<sup>3</sup>Includes plumbing code savings and Programs A and B savings.

<sup>4</sup>Includes plumbing code savings and Programs A, B, and C savings.

**Table 5-4  
Conservation Savings as a Percentage of Total New Demand for  
SFPUC Wholesale Customer Service Area**

|                                       | 2001 DSS Base Year Total Water Demand <sup>1</sup> (MGD) | 2030 DSS Projected Total Water Demand <sup>1</sup> (MGD) | 2030 Demand Increase (Total New Demand) from 2001 (MGD) | 2030 Water Savings due to Conservation Programs (MGD) |       |       | Water Savings as a Percentage of 2030 Total New Demand |     |     |
|---------------------------------------|--|--|---|---|-------|-------|--|-----|-----|
|                                       |  |  |   | A   | B     | C     | A  | B   | C   |
| SFPUC Wholesale Customer Service Area | 272  | 324  | 52  | 7.65  | 14.53 | 19.59 | 15%  | 28% | 38% |

Source: DSS Models

<sup>1</sup>SFPUC Wholesale Customer Water Demand Projections (URS 2004). 2030 demand includes plumbing code savings.

As indicated in Tables 5-3 and 5-4, the range in potential water savings in the year 2030 in the wholesale customer service area is 7.65 to 19.59 mgd, in addition to 25.4 mgd savings from the existing plumbing codes. This corresponds with a range in water savings as a percent of 2030 total new water demand from 15 percent to 38 percent over the wholesale customer service area. The range in percent of 2030 total new water demand among individual wholesale customers, shown in Tables 5-1 and 5-2 is considerably greater, reflecting the unique characteristics of the individual wholesale customers. This clearly shows why conservation evaluation at the

individual agency (wholesale customer) level is so important, as general water savings estimates rarely apply to individual agencies.

As can be deduced from Table 5-3, about half the conservation program savings occur from indoor water use reduction. The indoor water use savings are in addition to the savings resulting from the plumbing codes.

The programs have an overall benefit-cost ratio of 1.95 - 2.5 to 1, rendering them cost-effective. The cost of water saved, in the range of \$226-\$280 per acre-foot is lower than the current cost of SFPUC water and considerably lower than future projected cost of SFPUC water. However, the cost to achieve these water savings is considerable, ranging from a present value of about \$60 - \$120 million over the 30-year study period.

## **5.4 CONCURRENCE PROCESS**

Wholesale customers concurred in writing that they reviewed the estimated water savings resulting from the conservation analysis and, to the best of their knowledge, considered the water savings estimate to reflect a reasonable range of potential water conservation savings for long-range planning purposes.

### **5.4.1 Workshops and One-on-One Meetings**

SFPUC organized four workshops to assist the wholesale customers in understanding the modeling process, how each of their inputs would be used to generate results, and how those results will be used for future SFPUC planning purposes. The workshops were given for this study by the SFPUC and its consultants. The consulting team included five individuals who actually performed the modeling (the DSS modelers). One-on-one time was available with DSS modelers during one of the workshops and many wholesale customers used this time to work with their modeler for customizing their model to their agency or for answering technical or process questions. The consultant team also met with each of the wholesale customers one-on-one to go over the conservation analysis and support the development of conservation programs A through C.

In addition to the workshops, SFPUC and its consultants arranged one-on-one meetings with each wholesale customer and BAWSCA. The wholesale customers were additionally provided drafts of their results as model runs were improved and completed. Each round of wholesale customer feedback was addressed by revising the model as needed and making wholesale customer specific adjustments in cases where necessary.

Once the wholesale customers were satisfied with their input and results, they submitted their concurrence forms.

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- East Palo Alto, City of. 2003. Urban Water Management Plan. February.
- Estero MID-Foster City. 2000. Urban Water Management Plan. November.
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- Mid-Peninsula Water District. 2000. Urban Water Management Plan. December.
- Millbrae, City of. 2002. Urban Water Management Plan. December.
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- Westborough Water District. 2000. Urban Water Management Plan. December.

**Appendix A**  
**Description of SFPUC Wholesale Customers**



## **SFPUC WHOLESALe CUSTOMER PROFILES**

### **Alameda County Water District**

The Alameda County Water District service area consists of approximately 103 square miles in southwestern Alameda County. The District supplies water to the cities of Fremont, Newark, and Union City. The combined population of the three cities in the service area in 2001 was 316,523. The District's highest served population is single-family, owner-occupied homes. Only 24.3 percent of the District's water was provided by the San Francisco Public Utilities Commission (SFPUC) in 2001–2002, while groundwater, local surface-water, and other water supplies meet the remaining need.

### **City of Brisbane**

The City of Brisbane is located in northern San Mateo County. In 2001, the City had a residential population of approximately 3,174 residents. The service area encompasses approximately 3.5 square miles, nearly half of which is vacant and in the process of being developed. The City operates two water districts concurrently: City of Brisbane Water District and Guadalupe Valley Municipal Improvement District. The City's only source of potable water is the SFPUC.

### **City of Burlingame**

The City of Burlingame is situated in central San Mateo County and in 2001 had a population of 30,154 residents. The City's water system serves the entire area within its city limits of approximately 5.5 square miles. The system serves portions of the unincorporated Burlingame Hills area and a few properties in the City of San Mateo and Town of Hillsborough as well. The predominant land use is residential, but about 34 percent of the area served is commercial/industrial. The City receives all of its water from the SFPUC.

### **California Water Service Company–Bear Gulch District**

California Water Service Company–Bear Gulch District, located in southern San Mateo County, serves the communities of Atherton, Portola Valley, Woodside, and adjacent unincorporated portions of San Mateo County including West Menlo Park, Ladera, North Fair Oaks, and Menlo Oaks. The District serves approximately 66,000 residents and encompasses nearly 23.8 square miles. The service area comprises predominantly single-family residences, many of which are located on large, landscaped lots. In 2001–2002, water purchased from the SFPUC supplied 90.6 percent of the District's needs, with the balance being supplied by local surface water supply.

## **Appendix A**

### **Description of SFPUC Wholesale Customers**

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#### **California Water Service Company–Mid Peninsula District**

California Water Service Company–Mid Peninsula District is located in central San Mateo County and serves the Cities of San Carlos and San Mateo and adjacent unincorporated portions of San Mateo County, including The Highlands and Palomar Park. In 2001, the District served a population of 120,856 residents and covered approximately 17 square miles. The western portion of the District is hilly and comprised of low density, single-family housing and open space. Lower elevations to the east are composed of higher-density single-family and multi-family residences intermixed with commercial development. All of the District’s water is supplied by the SFPUC.

#### **California Water Service Company–South San Francisco District**

California Water Service Company–South San Francisco District is located in northern San Mateo County, serves the cities of South San Francisco, Colma, a small portion of Daly City, and the unincorporated area known as Broadmoor, which lies between Daly City and Colma. In 2001, the District served a population of 49,207 and encompassed approximately 11.2 square miles. Land use in the service area comprises both residential and commercial areas. In 2001–2002 approximately 89 percent of the District’s water supply was provided by the SFPUC. The remaining was met by groundwater supply.

#### **Coastside County Water District**

Coastside County Water District provides water to the City of Half Moon Bay and several unincorporated coastal communities in San Mateo County, including El Granada, Miramar, and Princeton by the Sea (Pillar Point Harbor). The District’s service area encompasses approximately 14 square miles. In 2001, the District served 18,319 people. The predominant land use is residential surrounded by agricultural or light ranching activities. In 2001–2002 approximately 70 percent of CCWD water was provided by the SFPUC, with the balance provided by local surface water and groundwater.

#### **City of Daly City**

The City of Daly City is located in northern San Mateo County adjacent to the southern boundary of the City and County of San Francisco. In 2001, the City served a population of 106,117. The service area encompasses approximately 7.4 square miles. The predominant land use is residential with a solid core of retail commercial. Daly City receives its water from two primary sources: local groundwater and surface water provided by the SFPUC. In 2001–2002, Daly City purchased approximately 63 percent of its water supply from the SFPUC.

#### **City of East Palo Alto**

The City of East Palo Alto is located in southern San Mateo County. The City is a residential community with some commercial and industrial development. The area is characterized with mostly single-family housing. In 2001, the City had a residential population of 24,395. The City’s service area encompasses approximately 2.5 square miles. The City’s only source of supply is the SFPUC.

### **Estero Municipal Improvement District**

Estero Municipal Improvement District is situated in central San Mateo County immediately adjacent to the Bay. The area served is predominantly residential with a broad cross section of commercial and light industrial development. The District's service area consists of the City of Foster City and a part of the City of San Mateo. The District serves a population of nearly 35,000 residents and covers approximately 4 square miles. SFPUC provides 100 percent of the District's water.

### **Guadalupe Valley Municipal Improvements District**

Guadalupe Valley Municipal Improvements District, located in northern San Mateo County, consists primarily of an industrial park development located within the Brisbane City limits, and a small single-family residential enclave. The City of Brisbane operates the District's water utility. The District's service area comprises approximately half of a square mile. In 2001, the service area's residential population was 446, while the transient daytime population was roughly 5,000. The District's only source of potable water is the SFPUC.

### **City of Hayward**

The City of Hayward, located in southern Alameda County on the east shore of San Francisco Bay, occupies an area of about 61 square miles and in 2001 served a population of roughly 140,000 residents. A balance exists between single-family and multi-family housing with new growth in its industrial sector. Hayward obtains its entire water supply from the SFPUC.

### **Town of Hillsborough**

The Town of Hillsborough is situated in central San Mateo County. The Town is a single-family residential community zoned for residential estates. In 2001, the Town's population was 11,618. The Town's service area consists of approximately 6.25 square miles and includes the Town of Hillsborough and portions of unincorporated San Mateo County. The Town purchases all of its water from the SFPUC.

### **Los Trancos County Water District**

Los Trancos County Water District is located in the rural foothills west of Highway 280 near the Town of Portola Valley. It serves a single-family residential population of nearly 740 people and encompasses roughly 4.5 square miles. The District's only source of supply is the SFPUC.

## **Appendix A**

### **Description of SFPUC Wholesale Customers**

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#### **City of Menlo Park**

The City of Menlo Park is located in southern San Mateo County. The City serves a balanced mix of residential, commercial, and industrial users. Though the population of the city of Menlo Park is over 30,785, the Menlo Park Municipal Water Department served only 12,153 residences in 2001. The remaining portions of Menlo Park are operated by the California Water Service's Bear Gulch District, and O'Conner Water District. The Water Department service area encompasses almost 4 square miles. About 96 percent of the water supply is purchased from the SFPUC.

#### **Mid-Peninsula Water District**

Mid-Peninsula Water District is located in central San Mateo County, and encompasses approximately 5 square miles. The predominant land use is residential, and in 2001 the District served 26,443 residents living within the City of Belmont, portions of San Carlos, and unincorporated areas. All of the District's water supply is provided by the SFPUC.

#### **City of Millbrae**

The City of Millbrae is a residential community situated in northern San Mateo County; the area contains regional commercial and light industrial development. In 2001, the City had a residential population of 21,460. The City owns and operates its water utility. The City's service area consists of approximately 3.2 square miles and includes Capuchino High School in San Bruno. The City's only source of water is the SFPUC.

#### **City of Milpitas**

The City of Milpitas is situated in Santa Clara County, and occupies an area of about 13.6 square miles. In 2001, the service area population was 62,756 residents. The City owns and operates its own water utility. In 2001–2002, the City purchased approximately 59.3 percent of its water supply from the SFPUC, while other water sources and recycled water met the remaining need.

#### **City of Mountain View**

The City of Mountain View is located in northern Santa Clara County between the cities of Sunnyvale and Palo Alto. The area has a balance of single-family and multi-family housing. In 2001, Mountain View provided water to 71,160 residents. The California Water Service Company serves approximately 625 customers in Mountain View. The City's service area encompasses 11.7 square miles. In 2001–2002, approximately 89.4 percent of the City's water was provided by the SFPUC, and the remaining was provided by groundwater supply and other sources.

### **North Coast County Water District**

North Coast County Water District serves the north coastal areas of San Mateo County. The District's boundaries are nearly those of the City of Pacifica. In 2001, the population of Pacifica was 40,457 residents. The District's service area is primarily residential and consists of nearly 12.6 square miles. The SFPUC provides 100 percent of the District's water supply.

### **City of Palo Alto**

The City of Palo Alto is the only municipality in California to operate six utilities: electric, water, gas, wastewater collection and treatment, storm drainage, and refuse. In 2001, Palo Alto had a residential population of 59,954. The service area encompasses approximately 26 square miles of land. Palo Alto is situated in northern Santa Clara County. In 2001–2001, approximately 99.4 percent of the City's water supply was provided by the SFPUC, while the remaining need was met by recycled water.

### **Purissima Hills Water District**

Purissima Hills Water District provides service to two-thirds of the Town of Los Altos Hills and unincorporated Santa Clara County land to the south. The District covers 8,600 acres, and in 2001 had a population of 6,023 residents and served predominantly single-family homes on minimum 1-acre lots. The largest customer is Foothill College. The District purchases 100 percent of its water from the SFPUC.

### **City of Redwood City**

The City of Redwood City is located in southern San Mateo County and supplies water to the City of Redwood City, unincorporated areas of San Mateo County, and portions of the City of San Carlos and the Town of Woodside. In 2001, the City's service area included 81,888 residents and covered roughly 35 square miles. The City purchases all of its potable water from the SFPUC.

### **City of San Bruno**

The City of San Bruno is situated in northern San Mateo County. The City is a residential community with regional commercial and light industrial development. The City had a residential population of 40,727 in 2001. The City's service area covers nearly 6.1 square miles and includes the City of San Bruno and unincorporated areas of San Mateo County. Two primary water sources exist: local groundwater and surface water purchased from the SFPUC. In 2001–2002, the City purchased approximately 64 percent of its water supply from the SFPUC.

### **City of San Jose**

The City of San Jose is located in Santa Clara County. The SFPUC serves an area of northern San Jose encompassing 5.3 square miles of land that is predominantly industrial with some residential and commercial land use. In 2001, the service area had a residential population of 11,098. In 2001–2002, the SFPUC provided approximately 96 percent of the service area’s water. Recycled water supplied the remaining 4 percent.

### **City of Santa Clara**

The City of Santa Clara is located at the south end of San Francisco Bay in Santa Clara County. In 2001, the City had a residential population of 104,349. The northern area of the City is predominantly commercial/industrial, while the southern part is primarily residential. The City’s service area encompasses nearly 19.4 square miles. Local groundwater is the primary source of potable water. In 2001–2002, the SFPUC provided approximately 16.2 percent of the City’s water. Groundwater, recycled water, and other water sources fulfill the remaining need.

### **Skyline County Water District**

Skyline County Water District is centrally located in San Mateo County. The District is a rural residential community. In 2001, the District had a population of 1,210. The District’s service area consists of about 17 square miles including a portion of the Town of Woodside and unincorporated areas of San Mateo County along Highway 35 (Skyline Boulevard) between Highway 84 and Highway 92. The SFPUC is the sole source of water for the District.

### **Stanford University**

Stanford University lands encompass approximately 8,200 acres in northern Santa Clara County. The central campus, which is the main area served by the Stanford Utilities Division, consist of approximately 2,000 acres of 3.1 square miles. The 2001-02 population was approximately 19,700. Stanford has three source of water supply: water purchased from the SFPUC, local ground water, and local surface water supply. In 2001-2002, Stanford purchased approximately 68 percent of its water supply from the SFPUC.

### **City of Sunnyvale**

The City of Sunnyvale is located in Santa Clara County. The City is an urban industrial and residential community. In 2001, the City reported a population of 131,356 residents. The service area for the water utility is contiguous with the City limits; however, California Water Service serves several small areas within the City. The service area encompasses nearly 24 square miles. In 2001–2002, approximately 43.6 percent of the City’s water supply was provided by the SFPUC. The other sources of water are groundwater, recycled water, and other sources.

**Appendix A**  
**Description of SFPUC Wholesale Customers**

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**Westborough Water District**

Westborough Water District is located in northern San Mateo County within the City of South San Francisco. In 2001, the District served a population of 10,017 residents and has a service area of approximately 1 square mile. The District provides both water and sewer service. The District acquires 100 percent of its water from the SFPUC.

The following table (Table A-1) is a summary of current conservation BMPs being implemented by the SFPUC wholesale customers in the fiscal year 2004-2005.

**Appendix A**  
**Description of SFPUC Wholesale Customers**

**Table A-1**  
**Current Conservation BMPs Being Implemented by SFPUC Wholesale Customers**  
**FY 2004/2005**

| SFPUC Wholesale Customer  | Res. Water Surveys<br>(BMP 1) | Res. Retrofit<br>(BMP 2) | System Audits, Leaks<br>(BMP 3) | Metering with Commodity Rates<br>(BMP 4) | Large Landscape Cons. Audits<br>(BMP 5) | Water Budgets (BMP 5) | Res. Clothes Washer Reb.<br>(BMP 6) | Pub. Info. (BMP 7) | School Education<br>(BMP 8) | Com. Water Audits<br>(BMP 9) | ULF Toilet/Urinals<br>(BMP 9) | Cons. Pricing<br>(BMP 11) | Conserv. Coordinator<br>(BMP 12) | Water Waste Prohibition<br>(BMP 13) | Res. ULF Toilet Rebates<br>(BMP 14) |
|---|-------------------------------|--------------------------|---------------------------------|--|---|-----------------------|-------------------------------------|--------------------|-----------------------------|------------------------------|-------------------------------|---------------------------|----------------------------------|-------------------------------------|-------------------------------------|
| Alameda County Water District                                   | NCE                           | ✓                        | ✓                               | ✓  | ✓                                       | ✓                     | ✓                                   | ✓                  | ✓                           | ✓                            | ✓                             | ✓                         | ✓                                | ✓                                   | NCE                                 |
| Brisbane, City of   |                               |                          |                                 | ✓  |   |                       | ✓                                   | ✓                  |                             |                              |                               | ✓                         |                                  | ✓                                   |                                     |
| Burlingame, City of   | ✓                             |                          | ✓                               | ✓  |   | ✓                     | ✓                                   | ✓                  | ✓                           | ✓                            | ✓                             | ✓                         |                                  |                                     | ✓                                   |
| California Water Service Company - Bear Gulch District          | NCE                           | ✓                        | ✓                               | ✓  |   |                       | ✓                                   | ✓                  | ✓                           |                              |                               | ✓                         | ✓                                | ✓                                   | ✓                                   |
| California Water Service Company - Mid-Peninsula District       | NCE                           | ✓                        | ✓                               | ✓  |   |                       | ✓                                   | ✓                  | ✓                           |                              |                               | ✓                         | ✓                                | ✓                                   | ✓                                   |
| California Water Service Company - South San Francisco District | NCE                           | ✓                        | ✓                               | ✓  | ✓                                       |                       | ✓                                   | ✓                  | ✓                           |                              |                               | ✓                         | ✓                                | ✓                                   | ✓                                   |
| Coastside County Water District                                 |                               | ✓                        | ✓                               | ✓  | ✓                                       | ✓                     | ✓                                   | ✓                  | ✓                           |                              | ✓                             | ✓                         | ✓                                | ✓                                   | ✓                                   |
| Daly City, City of  | NCE                           | ✓                        | ✓                               | ✓  | ✓                                       | ✓                     | ✓                                   | ✓                  | ✓                           | ✓                            | NCE                           | ✓                         | ✓                                | ✓                                   | NCE                                 |
| East Palo Alto, City of   |                               | ✓                        | ✓                               | ✓  |   |                       | ✓                                   | ✓                  | ✓                           |                              |                               | ✓                         | ✓                                |                                     |                                     |
| Estero Municipal Improvement District                           |                               |                          | ✓                               | ✓  |   |                       | ✓                                   | ✓                  |                             |                              |                               | ✓                         |                                  | ✓                                   | ✓                                   |
| Guadalupe Valley Municipal Improvement District                 |                               |                          |                                 | ✓  |   |                       | ✓                                   | ✓                  |                             |                              |                               | ✓                         |                                  | ✓                                   |                                     |
| Hayward, City of  |                               | ✓                        | ✓                               | ✓  |   |                       | ✓                                   | ✓                  |                             |                              |                               | ✓                         | ✓                                | ✓                                   | ✓                                   |
| Hillsborough, Town of   |                               |                          |                                 | ✓  |   |                       | ✓                                   | ✓                  |                             |                              |                               | ✓                         |                                  |                                     |                                     |
| Los Trancos County Water District                               |                               | ✓                        | ✓                               | ✓  | E                                       | E                     | ✓                                   | ✓                  | E                           | E                            | E                             | ✓                         | ✓                                | ✓                                   |                                     |
| Menlo Park, City of   |                               |                          | ✓                               | ✓  |   |                       | ✓                                   | ✓                  |                             |                              |                               | ✓                         | ✓                                | ✓                                   |                                     |



**Appendix A**  
**Description of SFPUC Wholesale Customers**

**Table A-1**  
**Current Conservation BMPs Being Implemented by SFPUC Wholesale Customers**  
**FY 2004/2005**

| SFPUC Wholesale Customer                      | Res. Water Surveys (BMP 1) | Res. Retrofit (BMP 2) | System Audits, Leaks (BMP 3) | Metering with Commodity Rates (BMP 4) | Large Landscape Cons. Audits (BMP 5) | Water Budgets (BMP 5) | Res. Clothes Washer Reb. (BMP 6) | Pub. Info. (BMP 7) | School Education (BMP 8) | Com. Water Audits (BMP 9) | ULF Toilet/Urinals (BMP 9) | Cons. Pricing (BMP 11) | Conserv. Coordinator (BMP 12) | Water Waste Prohibition (BMP 13) | Res. ULF Toilet Rebates (BMP 14) |
|---|----------------------------|-----------------------|------------------------------|---------------------------------------|--------------------------------------|-----------------------|----------------------------------|--------------------|--------------------------|---------------------------|----------------------------|------------------------|-------------------------------|----------------------------------|----------------------------------|
| Mid-Peninsula Water District                  | ✓                          | ✓                     | ✓                            | ✓                                     |                                      |                       | ✓                                | ✓                  | ✓                        |                           |                            | ✓                      |                               |                                  |                                  |
| Millbrae, City of                             | ✓                          | ✓                     | ✓                            | ✓                                     | ✓                                    |                       | ✓                                | ✓                  | ✓                        |                           | ✓                          | ✓                      | ✓                             | ✓                                | ✓                                |
| Milpitas, City of                             | ✓                          | ✓                     | ✓                            | ✓                                     | ✓                                    |                       | ✓                                | ✓                  | ✓                        | ✓                         |                            | ✓                      | ✓                             | ✓                                | ✓                                |
| Mountain View, City of                        | ✓                          | ✓                     |                              | ✓                                     | ✓                                    |                       | ✓                                | ✓                  | ✓                        | ✓                         | ✓                          | ✓                      | ✓                             | ✓                                | ✓                                |
| North Coast County Water District             | ✓                          | ✓                     | ✓                            | ✓                                     |                                      |                       | ✓                                | ✓                  | ✓                        |                           |                            | ✓                      | ✓                             | ✓                                | ✓                                |
| Palo Alto, City of                            | ✓                          | ✓                     | ✓                            | ✓                                     | ✓                                    |                       | ✓                                | ✓                  | ✓                        | ✓                         | ✓                          | ✓                      | ✓                             | ✓                                | ✓                                |
| Purissima Hills Water District                | ✓                          | ✓                     | ✓                            | ✓                                     |                                      |                       | ✓                                | ✓                  |                          |                           |                            | ✓                      |                               | ✓                                | ✓                                |
| Redwood City, City of                         | ✓                          | ✓                     | ✓                            | ✓                                     | ✓                                    | ✓                     | ✓                                | ✓                  | ✓                        |                           | ✓                          | ✓                      | ✓                             |                                  | ✓                                |
| San Bruno, City of                            |                            |                       |                              | ✓                                     |                                      |                       | ✓                                | ✓                  | ✓                        |                           |                            | ✓                      |                               |                                  |                                  |
| San Jose, City of (portion of north San Jose) | ✓                          | ✓                     | ✓                            | ✓                                     | ✓                                    |                       | ✓                                | ✓                  | ✓                        | ✓                         | ✓                          | ✓                      | ✓                             | ✓                                | ✓                                |
| Santa Clara, City of                          | ✓                          | ✓                     | ✓                            | ✓                                     | ✓                                    |                       | ✓                                | ✓                  | ✓                        | ✓                         |                            | ✓                      | ✓                             | ✓                                | ✓                                |
| Skyline County Water District                 |                            | ✓                     | ✓                            | ✓                                     |                                      |                       | ✓                                |                    | E                        |                           |                            | ✓                      |                               |                                  | ✓                                |
| Stanford University                           | ✓                          | ✓                     | ✓                            | ✓                                     | ✓                                    |                       | ✓                                | ✓                  |                          |                           | ✓                          | ✓                      | ✓                             | ✓                                | ✓                                |
| Sunnyvale, City of                            | ✓                          | ✓                     | ✓                            |                                       | ✓                                    |                       | ✓                                | ✓                  | ✓                        | ✓                         |                            | ✓                      |                               | ✓                                | ✓                                |
| Westborough Water District                    | ✓                          |                       | ✓                            | ✓                                     |                                      |                       | ✓                                |                    |                          |                           |                            | ✓                      | ✓                             | ✓                                | ✓                                |

Some programs may not be fully implemented to meet current BMP requirements.

NCE - Not Cost Effective Today

E - Exempt

P - Planning to implement soon

Source: BAWSCA

**Appendix B**  
**Description of Potential Water Conservation Measures**  
**Screened for SFPUC Wholesale Area**

## **Appendix B**

# **Description of Potential Water Conservation Measures Screened for SFPUC Wholesale Area**

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### **MEASURE SCREENING PROCESS**

Using the initial list of 75 potential conservation measures, a screening process was undertaken to develop a list of measures considered suitable for the region and to eliminate those measures that are not as well suited to the wholesale customers as other potential measures. It was intended that all measures resulting from the screening process could apply in general to the Bay Area. Each measure was evaluated qualitatively by a team including a representative from the SFPUC, a representative from BAWSCA, a representative from the wholesale customer group, and a member of the consultant team. Each potential measure was screened based on four qualitative criteria (listed below), scored on a scale of 1 to 5, with 1 being the lowest score and 5 being the highest. A maximum score of 20 was possible for each measure. Measures with low scores were eliminated from further consideration, while those with high scores were included in the short list of conservation measures for further evaluation. The results of how each measure scored in each criterion are shown in this appendix. This appendix also provides a detailed explanation of the scoring process.

#### **Qualitative Screening Criteria:**

- **Technology/Market Maturity** – Refers to whether or not the technology needed to implement the conservation measure, such as an irrigation control device, is commercially available and supported by the local service industry. A measure was scored low if the technology was not commercially available or high if the technology was widely available in the service area. A device may be screened out if it is not yet commercially available in the region.
- **Service Area Match** – Refers to whether or not the measure or related technology is appropriate for the area’s climate, building stock, or lifestyle. For example, promoting Xeriscape gardens for multi-family or commercial sites may not be appropriate where water use analysis indicates little outdoor irrigation. Thus, a measure scored low in this category if it was not well suited for the area’s characteristics and could not save water. A measure scored high in this criterion if it was well suited for the area and could save water.
- **Customer Acceptance/Equity** – Refers to whether or not retail customers within the wholesale customer service area would be willing to implement and accept the conservation measures. For example, would retail customers attend homeowner irrigation classes and implement lessons learned from these classes. If not, then the water savings associated with this measure would not be achieved and a measure with this characteristic would score low for this criterion. This criterion also refers to retail customer equitability (i.e. one category of retail customers receives benefit while another pays the costs without receiving benefits). Retail customer acceptance may be also based on convenience, economics, perceived fairness, or aesthetics.
- **Relative Effectiveness of Measure Available** – Refers to the selection of the most effective measure if alternate conservation measures address the same end use. If the measures are equally effective the most appropriate was selected (e.g. the measure was easier to implement or less expensive to implement).

**Appendix B**

**Description of Potential Water Conservation Measures Screened  
for SFPUC Wholesale Area**

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**Table B-1**  
**Scoring Guidelines Used to Rate Measures**

| Score | Criteria and Guideline   |   |  |  |
|-------|--|---|--|--|
|       | Technology/Market Maturity   | Service Area Match  | Customer Acceptance/Equity   | Relation to Other Measures Available                                 |
| 5     | Technology is commonly available for sale in retail stores                                   | Perfectly suited for the water service areas and will save water                  | Customers will use the measure enthusiastically  | Best way to save water in this group of measures                     |
| 4     | Technology available for sale such as over the Internet but not in retail stores             | Will work in the service area but water savings will be lower than in other areas | Customers will adopt the measure slowly over time                                      | Tied with other measure(s) for best way to save water in this group  |
| 3     | Technology has been tested and proven but not mass produced                                  | Marginally suited for service area  | Customers will not reject the measure, may be slight inequities                        | Better measures are available  |
| 2     | Technology has been tested and proven but not commercially developed into a workable product | May be suited but considerable uncertainty  | Measure would have to be mandatory because considerable customer opposition expected   | Unattractive based on rankings for other criteria                    |
| 1     | Technology unproven  | Not suited for service areas  | Customer likely to reject measure if voluntary or believe it to be unfair if mandatory | Not a good way to save water in this group of measures; poorly rated |

**Appendix B**

**Description of Potential Water Conservation Measures Screened  
for SFPUC Wholesale Area**

**Table B-2**  
**Results of Screening Potential Conservation Measures for  
SFPUC Wholesale Customers**

| Measure  |                      | Criteria                   |                    |                             |                          | Pass                    |
|--|----------------------|----------------------------|--------------------|-----------------------------|--------------------------|-------------------------|
| Device or Program  | Implementing Agency  | Technology Market Maturity | Service Area Match | Customer Acceptance/ Equity | Better Measure Available | Score (Pass? Yes or No) |
| <b>Single-Family Residential – Indoor</b>  |                      |                            |                    |                             |                          |                         |
| <b>Existing Accounts</b>   |                      |                            |                    |                             |                          |                         |
| 1. Rebates for 6/3 dual flush or 4-liter toilets   | <i>Water Utility</i> | 4                          | 4                  | 4                           | 4                        | 16 (No)                 |
| 2. Promote home leak detection and repair  | <i>Water Utility</i> | 5                          | 4                  | 3                           | 5                        | 17 (Yes)                |
| 3. Sponsor increased school education programs   | <i>Water Utility</i> | 5                          | 5                  | 3                           | 2                        | 15 (No)                 |
| <b>New Homes</b>   |                      |                            |                    |                             |                          |                         |
| 4. Require high efficiency clothes washing machines  | <i>City/County</i>   | 5                          | 5                  | 2                           | 3                        | 15 (No)                 |
| 5. Require insulation of hot water piping  | <i>City/County</i>   | 5                          | 5                  | 2                           | 2                        | 14 (No)                 |
| 6. Rebates for 6/3 dual flush or 4-liter toilets   | <i>Water Utility</i> | 4                          | 4                  | 4                           | 5                        | 17 (Yes)                |
| 7. Require 6/3 dual flush or 4-liter toilets for new homes                                       | <i>City/County</i>   | 4                          | 4                  | 2                           | 3                        | 13 (No)                 |
| <b>Single-Family Residential – Outdoor</b>   |                      |                            |                    |                             |                          |                         |
| <b>Existing Homes</b>  |                      |                            |                    |                             |                          |                         |
| 8. Regulations for rain sensor/shut-offs on automatic systems. Water Utility to provide rebates. | <i>Water Utility</i> | 5                          | 2                  | 4                           | 3                        | 14 (No)                 |
| 9. ET controller rebates   | <i>Water Utility</i> | 4                          | 4                  | 4                           | 5                        | 17 (Yes)                |
| 10. Provide additional Xeriscape demonstration gardens   | <i>Water Utility</i> | 5                          | 5                  | 3                           | 3                        | 16 (No)                 |
| 11. Provide Xeriscape education and staff training at retail garden/irrigation supply houses     | <i>Water Utility</i> | 5                          | 5                  | 5                           | 5                        | 20 (Yes)                |
| 12. Provide homeowner irrigation classes   | <i>Water Utility</i> | 5                          | 5                  | 4                           | 5                        | 19 (Yes)                |
| 13. Provide free trigger shut-off valves and hose timers   | <i>Water Utility</i> | 5                          | 5                  | 4                           | 2                        | 16 (No)                 |
| <b>New Homes</b>   |                      |                            |                    |                             |                          |                         |
| 14. Provide ET Controller Rebate   | <i>Water Utility</i> | 4                          | 5                  | 4                           | 5                        | 18 (Yes)                |
| 15. New home efficiency rating requirement for developers.                                       | <i>City/County</i>   | 5                          | 3                  | 2                           | 2                        | 12 (No)                 |

**Appendix B**  
**Description of Potential Water Conservation Measures Screened**  
**for SFPUC Wholesale Area**

**Table B-2**  
**Results of Screening Potential Conservation Measures for**  
**SFPUC Wholesale Customers**

| Measure   |                      | Criteria                   |                    |                             |                          | Pass                    |
|---|----------------------|----------------------------|--------------------|-----------------------------|--------------------------|-------------------------|
| Device or Program   | Implementing Agency  | Technology Market Maturity | Service Area Match | Customer Acceptance/ Equity | Better Measure Available | Score (Pass? Yes or No) |
| 16. Require model homes be landscaped with low water use landscaping                      | <i>City/County</i>   | 5                          | 5                  | 2                           | 4                        | 16 (No)                 |
| 17. Promote new home efficiency award programs with developers                            | <i>Water Utility</i> | 5                          | 4                  | 4                           | 2                        | 15 (No)                 |
| 18. Promote water efficient plantings at new homes  | <i>Water Utility</i> | 5                          | 5                  | 3                           | 5                        | 18 (Yes)                |
| 19. Landscape requirements for new homes (turf limitations/regulations)                   | <i>City/County</i>   | 5                          | 5                  | 2                           | 4                        | 16 (No)                 |
| 20. Provide rebates for rain sensor/shut-offs on automatic systems                        | <i>Water Utility</i> | 5                          | 2                  | 4                           | 2                        | 13 (No)                 |
| 21. Require developer financed off-site conservation projects                             | <i>Water Utility</i> | 5                          | 4                  | 2                           | 3                        | 14 (No)                 |
| <b>Multi-Family Residential – Indoor</b>  |                      |                            |                    |                             |                          |                         |
| <b>Existing Accounts</b>  |                      |                            |                    |                             |                          |                         |
| 22. Offer rebate incentives for replacement of clothes washers in coin-operated laundries | <i>Water Utility</i> | 5                          | 5                  | 5                           | 5                        | 20 (Yes)                |
| 23. Offer rebate incentives for retrofitting sub-metering                                 | <i>Water Utility</i> | 5                          | 5                  | 4                           | 5                        | 19 (Yes)                |
| 24. Require regulations on sub-metering procedures (to protect tenant)                    | <i>Water Utility</i> | 5                          | 5                  | 1                           | 2                        | 13 (No)                 |
| 25. Provide rebates for 6/3 dual flush or 4-liter toilets                                 | <i>Water Utility</i> | 4                          | 4                  | 4                           | 3                        | 15 (No)                 |
| <b>New Development</b>  |                      |                            |                    |                             |                          |                         |
| 26. Provide rebates for 6/3 dual flush or 4-liter toilets                                 | <i>Water Utility</i> | 4                          | 4                  | 4                           | 4                        | 16 (No)                 |
| 27. Require sub-metering multifamily units  | <i>City/County</i>   | 5                          | 5                  | 2                           | 5                        | 17 (Yes)                |
| 28. Provide rebates for efficient clothes washers (such as horizontal axis)               | <i>Water Utility</i> | 5                          | 5                  | 5                           | 5                        | 20 (Yes)                |
| 29. Require 6/3 dual flush or 4-liter toilets for new homes                               | <i>City/County</i>   | 4                          | 4                  | 2                           | 3                        | 13 (No)                 |

**Appendix B**  
**Description of Potential Water Conservation Measures Screened**  
**for SFPUC Wholesale Area**

**Table B-2**  
**Results of Screening Potential Conservation Measures for**  
**SFPUC Wholesale Customers**

| Measure  |                            | Criteria                   |                    |                             |                          | Pass                    |
|--|----------------------------|----------------------------|--------------------|-----------------------------|--------------------------|-------------------------|
| Device or Program  | Implementing Agency        | Technology Market Maturity | Service Area Match | Customer Acceptance/ Equity | Better Measure Available | Score (Pass? Yes or No) |
| <b>Multi-Family Residential – Outdoor</b>  |                            |                            |                    |                             |                          |                         |
| <b>Existing Accounts</b>   |                            |                            |                    |                             |                          |                         |
| 30. Provide rebates for ET controllers   | <i>Water Utility</i>       | 4                          | 4                  | 4                           | 5                        | 17 (Yes)                |
| 31. Provide rebates for adding rain-sensor retrofits on existing controllers                       | <i>Water Utility</i>       | 5                          | 2                  | 4                           | 2                        | 13 (No)                 |
| <b>New Development</b>   |                            |                            |                    |                             |                          |                         |
| 32. Provide rebates for ET controllers   | <i>Water Utility</i>       | 4                          | 5                  | 4                           | 5                        | 18 (Yes)                |
| 33. Provide rebates for rain sensor/shut-offs on automatic irrigation systems                      | <i>Water Utility</i>       | 5                          | 2                  | 4                           | 2                        | 13 (No)                 |
| 34. Require new home efficiency rating system of developers  | <i>City/County</i>         | 5                          | 3                  | 2                           | 2                        | 12 (No)                 |
| 35. Promote new home efficiency award program with developers                                      | <i>Water Utility</i>       | 5                          | 4                  | 4                           | 2                        | 15 (No)                 |
| 36. Enforce landscape requirements for new landscaping systems (turf limitations/regulations)      | <i>Water Utility Funds</i> | 5                          | 5                  | 3                           | 4                        | 17 (Yes)                |
| 37. Require efficient irrigation system design standards   | <i>City/County</i>         | 5                          | 5                  | 2                           | 4                        | 16 (No)                 |
| 38. Promote developer financed off-site development conservation projects with private companies   | <i>Water Utility</i>       | 5                          | 4                  | 2                           | 3                        | 14 (No)                 |
| <b>Commercial/Industrial/Institutional – Indoor</b>  |                            |                            |                    |                             |                          |                         |
| <b>Existing Accounts</b>   |                            |                            |                    |                             |                          |                         |
| 39. Rebates for replacing high use commercial urinals with 0.5 gal/flush                           | <i>Water Utility</i>       | 5                          | 5                  | 3                           | 2                        | 15 (No)                 |
| 40. Require 1.6 gal/flush toilet to be installed at the time of sale                               | <i>City/County</i>         | 5                          | 5                  | 2                           | 2                        | 14 (No)                 |
| 41. Offer rebate incentives for replacement or lease of clothes washers in coin-operated laundries | <i>Water Utility</i>       | 5                          | 5                  | 5                           | 5                        | 20 (Yes)                |
| 42. Require car washes to recycle water  | <i>City/County</i>         | 4                          | 4                  | 2                           | 2                        | 12 (No)                 |
| 43. Offer rebates for meters on cooling towers   | <i>Water Utility</i>       | 5                          | 5                  | 3                           | 3                        | 16 (No)                 |

**Appendix B**  
**Description of Potential Water Conservation Measures Screened**  
**for SFPUC Wholesale Area**

**Table B-2**  
**Results of Screening Potential Conservation Measures for**  
**SFPUC Wholesale Customers**

| Measure   |                      | Criteria                   |                    |                             |                          | Pass                    |
|---|----------------------|----------------------------|--------------------|-----------------------------|--------------------------|-------------------------|
| Device or Program   | Implementing Agency  | Technology Market Maturity | Service Area Match | Customer Acceptance/ Equity | Better Measure Available | Score (Pass? Yes or No) |
| 44. Initiate cooling tower regulations  | <i>Water Utility</i> | 4                          | 5                  | 2                           | 2                        | 13 (No)                 |
| 45. Provide free restaurant low flow spray rinse nozzles  | <i>Water Utility</i> | 5                          | 5                  | 4                           | 5                        | 19 (Yes)                |
| 46. Provide free focused water audits for hotels/motels   | <i>Water Utility</i> | 5                          | 5                  | 5                           | 5                        | 20 (Yes)                |
| 47. Promote WAVE Program (US EPA) for hotels  | <i>Water Utility</i> | 5                          | 5                  | 4                           | 4                        | 18 (Yes)                |
| 48. Provide rebates for hotel retrofits (w/financial assistance)  | <i>Water Utility</i> | 5                          | 5                  | 4                           | 4                        | 18 (Yes)                |
| 49. Provide employee education programs   | <i>Water Utility</i> | 5                          | 5                  | 4                           | 2                        | 16 (No)                 |
| 50. Sponsor award programs for water savings by businesses  | <i>Water Utility</i> | 5                          | 5                  | 5                           | 5                        | 20 (Yes)                |
| 51. Provide rebates for capacity buy-back for process improvements  | <i>Water Utility</i> | 5                          | 5                  | 3                           | 3                        | 16 (No)                 |
| 52. Provide rebates for X-Ray recycling units   | <i>Water Utility</i> | 4                          | 2                  | 3                           | 2                        | 11 (No)                 |
| 53. Provide rebates for replacement of inefficient water using equipment  | <i>Water Utility</i> | 5                          | 5                  | 4                           | 4                        | 18 (Yes)                |
| <b>New Accounts</b>   |                      |                            |                    |                             |                          |                         |
| 54. Require car washes to recycle water   | <i>City/County</i>   | 5                          | 3                  | 2                           | 1                        | 11 (No)                 |
| 55. Require efficient (such as horizontal axis) clothes washers   | <i>City/County</i>   | 5                          | 5                  | 2                           | 2                        | 14 (No)                 |
| 56. Provide rebates for waterless urinals   | <i>Water Utility</i> | 4                          | 3                  | 3                           | 2                        | 12 (No)                 |
| 57. Promote and /or provide rebates for laundry recycle systems at commercial laundries                                   | <i>Water Utility</i> | 4                          | 3                  | 3                           | 2                        | 12 (No)                 |
| 58. Require self-closing faucets  | <i>City/County</i>   | 5                          | 5                  | 2                           | 3                        | 15 (No)                 |
| 59. Require efficient process equipment for selected businesses (restaurants, hotels/motels, office sanitation)           | <i>City/County</i>   | 5                          | 4                  | 2                           | 2                        | 13 (No)                 |
| 60. Initiate requirement to prohibit once through cooling and non-recycling fountains, other non efficient water features | <i>City/County</i>   | 5                          | 3                  | 2                           | 3                        | 13 (No)                 |
| 61. Require 0.5 gal/flush urinals in new buildings  | <i>City/County</i>   | 5                          | 5                  | 2                           | 5                        | 17 (Yes)                |



**Appendix B**  
**Description of Potential Water Conservation Measures Screened**  
**for SFPUC Wholesale Area**

**Table B-2**  
**Results of Screening Potential Conservation Measures for**  
**SFPUC Wholesale Customers**

| Measure   |                            | Criteria                   |                    |                             |                          | Pass                    |
|---|----------------------------|----------------------------|--------------------|-----------------------------|--------------------------|-------------------------|
| Device or Program   | Implementing Agency        | Technology Market Maturity | Service Area Match | Customer Acceptance/ Equity | Better Measure Available | Score (Pass? Yes or No) |
| <b>Commercial/Industrial/Institutional – Outdoor</b>  |                            |                            |                    |                             |                          |                         |
| <b>Existing Accounts</b>  |                            |                            |                    |                             |                          |                         |
| 62. Provide rebates for ET irrigation controllers for irrigation accounts                     | <i>Water Utility</i>       | 4                          | 4                  | 4                           | 5                        | 17 (Yes)                |
| 63. Provide rebates for adding rain-sensor retrofits on existing controllers                  | <i>Water Utility</i>       | 5                          | 2                  | 4                           | 2                        | 13 (No)                 |
| 64. Initiate requirement for financial incentives for water use complying with budget         | <i>Water Utility</i>       | 5                          | 5                  | 3                           | 4                        | 17 (Yes)                |
| 65. Provide financial incentives, rebates for irrigation upgrades                             | <i>Water Utility</i>       | 5                          | 5                  | 4                           | 5                        | 19 (Yes)                |
| <b>New Accounts</b>   |                            |                            |                    |                             |                          |                         |
| 66. Provide rebates for rain sensor/shut-offs on automatic systems                            | <i>Water Utility</i>       | 5                          | 2                  | 4                           | 2                        | 13 (No)                 |
| 67. Require dedicated irrigation meters   | <i>Water Utility</i>       | 5                          | 5                  | 5                           | 5                        | 20 (Yes)                |
| 68. Provide ET controller rebates   | <i>Water Utility</i>       | 4                          | 5                  | 4                           | 5                        | 18 (Yes)                |
| 69. Enforce landscape requirements for new landscaping systems (turf limitations/regulations) | <i>Water Utility Funds</i> | 5                          | 5                  | 3                           | 4                        | 17 (Yes)                |
| 70. Require efficient irrigation system design standards                                      | <i>City/County</i>         | 5                          | 5                  | 2                           | 4                        | 16 (No)                 |
| 71. Initiate requirement for financial incentives for complying with water use budget         | <i>Water Utility</i>       | 5                          | 5                  | 3                           | 4                        | 17 (Yes)                |
| <b>Water Utility / City – Indoor</b>  |                            |                            |                    |                             |                          |                         |
| 72. Provide installation of waterless urinals, dual flush toilets                             | <i>Water Utility</i>       | 4                          | 4                  | 4                           | 4                        | 16 (No)                 |
| 73. Provide Water Utility / City Department water reduction goals                             | <i>Water Utility</i>       | 5                          | 4                  | 4                           | 4                        | 17 (Yes)                |
| <b>Water Utility / City – Outdoor and System</b>  |                            |                            |                    |                             |                          |                         |
| 74. Provide public swimming pool water audits   | <i>Water Utility</i>       | 3                          | 3                  | 4                           | 2                        | 12 (No)                 |
| 75. Provide ET controllers  | <i>Water Utility</i>       | 4                          | 4                  | 5                           | 5                        | 18 (Yes)                |

Ratings are on a scale of 1 through 5 with 5 being the most acceptable

**Appendix C**  
**Additional Assumptions for Evaluation of DSS Conservation Measures**

## Appendix C

### Additional Assumptions for Evaluation of DSS Conservation Measures

| Measure  | Parameter   | Assumption  |
|--|---|---|
| 1. Residential Water Surveys                       |   | None beyond Table 3-2   |
| 2. Residential Retrofit                            |   | None beyond Table 3-2   |
| 3. Large Landscape                                 | End use water savings   | 30 percent, double BMP 5 normal value to reflect additional savings when large accounts are surveyed versus accounts with average water use that are represented in the model |
|  | Water application rate, determines how many acres are irrigated on mixed use meters | 6.0 feet per year, ETo for turf grass with 50 percent irrigation efficiency   |
| 4. Water Budgets                                   |   | None beyond Table 3-2   |
| 5. Clothes Washer Rebate                           |   | None beyond Table 3-2   |
| 6. Public Information Program                      |   | None beyond Table 3-2   |
| 7. Commercial Water Audits                         | End use water savings   | 24 percent, double BMP 7 normal value to reflect additional savings when large accounts are surveyed versus accounts with average water use that are represented in the model |
| 8. CII ULF Toilet Rebates                          |   | None beyond Table 3-2   |
| 9a. Single-Family Residential ULF Toilet Rebates   | Rebates provided per dwelling unit  | 2.0 (CUWCC MOU, Exhibit 6)  |
|  | Free riders   | 32 percent CUWCC ULFT Free rider report   |
| 9b. Multifamily Residential ULF Toilet Rebates     | Rebates provided per dwelling unit  | 1.0 (CUWCC MOU, Exhibit 6)  |
|  | Free riders   | 19 percent CUWCC ULFT Free rider report   |
| 10. Residential Retrofit on Resale                 |   | None beyond Table 3-2   |
| 11. Home Leak Detection Repair                     |   | None beyond Table 3-2   |
| 12. Rebates for 6/3 dual flush or 4 liter toilets  | Rebates provided per dwelling unit  | 2.0 Single-Family (CUWCC MOU, Exhibit 6)<br>1.0 multifamily   |
| 13. ET Controller Rebates                          |   | None beyond Table 3-2   |
| 14. Xeriscape Education Classes                    |   | None beyond Table 3-2   |
| 15. Homeowner Irrigation Classes                   |   | None beyond Table 3-2   |
| 16. Promote water efficient plantings at new homes |   | None beyond Table 3-2   |
| 17. Coin-op clothes washer rebates                 |   | None beyond Table 3-2   |
| 18. Incentives for retrofitting sub-meters         |   | None beyond Table 3-2   |
| 19. Require sub-metering multifamily units         |   | None beyond Table 3-2   |
| 20. Rebate efficient clothes washers               |   | None beyond Table 3-2   |
| 21. Enforce landscape requirements                 |   | None beyond Table 3-2   |

**Appendix C**

**Additional Assumptions for Evaluation of DSS Conservation Measures**

| Measure  | Parameter | Assumption            |
|--|-----------|-----------------------|
| 22. Restaurant Low Flow Spray Rinse Nozzles                  |           | None beyond Table 3-2 |
| 23. Hotel Audits   |           | None beyond Table 3-2 |
| 24. Hotel WAVE Program                                       |           | None beyond Table 3-2 |
| 25. Hotel Retrofit   |           | None beyond Table 3-2 |
| 26. Award program for water savings by businesses            |           | None beyond Table 3-2 |
| 27. Replace inefficient water using equipment                |           | None beyond Table 3-2 |
| 28. Require 0.5 gal/flush urinals in new buildings           |           | None beyond Table 3-2 |
| 29. Financial incentives for complying with water use budget |           | None beyond Table 3-2 |
| 30. Financial incentives for irrigation upgrades             |           | None beyond Table 3-2 |
| 31. Require dedicated irrigation meters                      |           | None beyond Table 3-2 |
| 32. Water Utility/City Department water reduction goals      |           | None beyond Table 3-2 |

**Appendix D**  
**SFPUC Wholesale Customer Conservation Information**

## Appendix D

# SFPUC Wholesale Customer Conservation Information

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This Appendix contains results presented to SFPUC wholesale customers during the study. Each sub-appendix (one for each wholesale customer) contains the following tables:

- Results of conservation Measures Evaluation
- Summary of Current Conservation Programs
- Summary Conservation Measures Selected in DSS Conservation Programs
- Present Value of Utility Costs Versus Water Saved (30-Year Analysis)

A brief description of the factors summarized in the attached tables is below.

|   |  |
|---|--|
| <b>Water Utility Benefit-Cost Ratio</b>   | Water Utility Benefit-Cost Ratio is calculated by taking the present value of the water saved (present value of the benefits <i>based on water's projected value in the year 2015</i> ) divided by the present value of the total utility cost of implementing a measure over the 30-year analysis period.   |
| <b>Total Community (Utility-Customer) Benefit-Cost Ratio</b>                    | Total Community (Utility-Customer) Benefit-Cost Ratio is calculated by taking the present value of the water saved plus reduced customer energy costs (present value of utility water benefits and customer energy benefits <i>based on water's projected value in the year 2015</i> ) divided by the present value of the total utility and retail customer costs of implementing a measure over its life. The tables in Appendix D and the DSS model use the term "community." Also referred to in the report as "utility-customer". |
| <b>"30-year" Average Water Savings</b>  | "30-year" Annual Average Water Savings represents the water savings for implementing a conservation measure averaged over the 30-year analysis period.   |
| <b>Cost of Water Saved (Cost of Savings per Unit Volume)</b>                    | Cost of Water Saved is calculated by taking the present value of the water utility costs and dividing by the cumulative amount of water saved over the 30-year analysis period. It is expressed as \$/MG in the Appendix D tables.   |
| <b>Net Utility Benefits</b>   | Net Utility Benefit is the present value of the utility benefits less the present value of the utility costs. Measures with benefit-cost ratios less than 1.0 have a negative Net Utility Benefit.   |
| <b>First Five Years Utility Cost</b>  | First Five Years Utility Cost is the cost (sum of the actual costs) to the utility of implementing the conservation measure during the first five years of the measure.  |
| <b>Present Value of Water-Utility Costs</b>                                     | The present value of the total utility cost of implementing a measure over the 30-year analysis period   |
| <b>2030 Water Savings due to Conservation Programs (Cumulative Water Saved)</b> | The amount of water saved due to the implementation of a conservation program in the year 2030. Also referred to as "Cumulative Water Saved" in the Appendix D graph.  |

**Appendix D1**  
**Alameda County Water District**

**FINAL Results of Conservation Measures Evaluation  
Alameda County Water District  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 0.7                              | 1.3                                | 0.182                                 | \$1,117                                 | (\$728,051)         | \$582,863                     |
| 2                    | Residential Retrofit  | 1.4                              | 7.4                                | 0.048                                 | \$583                                   | \$122,938           | \$324,553                     |
| 3                    | Large Landscape Conservation  | 0.7                              | 0.6                                | 0.085                                 | \$1,125                                 | (\$371,822)         | \$308,092                     |
| 4                    | Water Budgets   | 14.2                             | 14.2                               | 0.631                                 | \$54                                    | \$5,117,703         | \$388,120                     |
| 5                    | Clothes Washer Rebate   | 1.2                              | 2.1                                | 0.058                                 | \$689                                   | \$78,689            | \$482,097                     |
| 6                    | Public Information Program  | 0.7                              | 1.7                                | 0.206                                 | \$1,154                                 | (\$836,231)         | \$743,780                     |
| 7                    | Commercial Water Audits   | 1.6                              | 2.1                                | 0.227                                 | \$480                                   | \$698,967           | \$742,507                     |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 2.5                              | 1.4                                | 0.005                                 | \$323                                   | \$24,814            | \$18,652                      |
| 9                    | Residential ULF Toilet Rebate   | 0.5                              | 0.2                                | 0.503                                 | \$1,475                                 | (\$4,005,159)       | \$5,155,240                   |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 4.1                              | 0.3                                | 0.615                                 | \$191                                   | \$4,071,508         | \$838,565                     |
| 11                   | Home Leak Detection and Repair  | 0.3                              | 0.3                                | 0.039                                 | \$3,646                                 | (\$1,178,131)       | \$926,294                     |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 0.8                              | 0.6                                | 0.467                                 | \$908                                   | (\$769,295)         | \$2,778,748                   |
| 13                   | ET Controller Rebates   | 0.5                              | 0.4                                | 0.092                                 | \$1,343                                 | (\$657,871)         | \$450,424                     |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 6.4                              | 0.3                                | 0.050                                 | \$109                                   | \$334,292           | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 2.9                              | 0.2                                | 0.022                                 | \$243                                   | \$116,054           | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 0.4                              | 0.0                                | 0.006                                 | \$1,662                                 | (\$59,877)          | \$38,662                      |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 1.2                              | 5.4                                | 0.007                                 | \$634                                   | \$12,784            | \$55,125                      |
| 18                   | Incentives for retrofitting sub-metering  | 1.7                              | 1.0                                | 0.016                                 | \$444                                   | \$57,097            | \$46,853                      |
| 19                   | Require sub-metering multifamily units  | 3.0                              | 1.4                                | 0.048                                 | \$241                                   | \$258,394           | \$47,830                      |
| 20                   | Rebate efficient clothes washers  | 5.0                              | 19.5                               | 0.063                                 | \$162                                   | \$464,197           | \$123,663                     |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 5.1                              | 0.7                                | 0.046                                 | \$138                                   | \$293,709           | \$20,967                      |



**FINAL Results of Conservation Measures Evaluation  
Alameda County Water District  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 5.9                              | 32.1                               | 0.042                                 | \$133                                   | \$306,960           | \$69,063                      |
| 23                   | Focused water audits for hotels/motels                   | 8.9                              | 5.8                                | 0.062                                 | \$85                                    | \$466,308           | \$34,688                      |
| 24                   | WAVE Program (US EPA) for hotels                         | 48.3                             | 2.1                                | 0.004                                 | \$16                                    | \$34,305            | \$426                         |
| 25                   | Hotel retrofit (w/financial assistance)                  | 2.4                              | 1.3                                | 0.033                                 | \$318                                   | \$161,732           | \$69,500                      |
| 26                   | Award program for water savings by businesses            | 1.9                              | 0.6                                | 0.009                                 | \$377                                   | \$33,758            | \$10,350                      |
| 27                   | Replace inefficient water using equipment                | 0.9                              | 0.2                                | 0.041                                 | \$817                                   | (\$31,207)          | \$215,594                     |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 9.0                              | 9.0                                | 0.005                                 | \$79                                    | \$34,354            | \$1,138                       |
| 29                   | Financial incentives for complying with water use budget | 5.6                              | 2.0                                | 0.377                                 | \$133                                   | \$2,641,928         | \$361,142                     |
| 30                   | Financial incentives for irrigation upgrades             | 1.3                              | 0.7                                | 0.006                                 | \$562                                   | \$10,018            | \$11,074                      |
| 31                   | Require dedicated irrigation meters for new accounts     | 3.0                              | 0.4                                | 0.026                                 | \$235                                   | \$138,551           | \$4,400                       |
| 32                   | Water Utility / City Department water reduction goals    | 6.5                              | 1.4                                | 0.085                                 | \$116                                   | \$609,365           | \$64,606                      |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
Alameda County Water District  
July 21, 2004**

| Description of Conservation Activity                                     | Corresponding Measure Number |
|--|------------------------------|
| Residential Water Surveys (CA BMP 1)                                     | 1                            |
| Residential Retrofit (CA BMP 2)  | 2                            |
| Large Landscape Conservation Audits (CA BMP 5)                           | 3                            |
| Water Budgets  | 4                            |
| Clothes Washer Rebate (CA BMP 6)   | 5                            |
| Public Information Program (CA BMP 7)                                    | 6                            |
| Commercial Water Audits (CA BMP 9)                                       | 7                            |
| ULF Toilet and Urinal Rebates (CA BMP 9)                                 | 8                            |
| Incentives for Replacement of Clothes Washers in Coin-operated Laundries | 17                           |
| Rebate Efficient Clothes Washers   | 20                           |
| Restaurant Low Flow Spray Rinse Nozzles (CA BMP 9)                       | 22                           |
| Conservation Pricing (CA BMP 11)   | None <sup>1</sup>            |
| System Water Audits, Leak Detection and Repair (CA BMP 3)                | None <sup>1</sup>            |

<sup>1</sup> Measure not evaluated in model.

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
ACWD  
July 21, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A            | Program B            | Program C            | Not Attractive       |
|---|------------------------------|----------------------|----------------------|----------------------|----------------------|
| Residential Water Surveys   | 1                            | <b>X<sup>1</sup></b> | <b>X</b>             | <b>X</b>             |                      |
| Residential Retrofit  | 2                            | <b>X</b>             | <b>X</b>             | <b>X</b>             |                      |
| Large Landscape Conservation Audits   | 3                            | <b>X</b>             | <b>X</b>             | <b>X</b>             |                      |
| Water Budgets   | 4                            | <b>X</b>             | <b>X</b>             | <b>X</b>             |                      |
| Clothes Washer Rebate   | 5                            | <b>X</b>             | <b>X</b>             | <b>X</b>             |                      |
| Public Information Program  | 6                            | <b>X</b>             | <b>X</b>             | <b>X</b>             |                      |
| Commercial Water Audits   | 7                            | <b>X</b>             | <b>X</b>             | <b>X</b>             |                      |
| ULF Toilet and Urinal Rebates   | 8                            | <b>X</b>             | <b>X</b>             | <b>X</b>             |                      |
| Residential ULF Toilet Rebate   | 9                            |                      |                      |                      | <b>X<sup>2</sup></b> |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |                      |                      |                      | <b>X</b>             |
| Home Leak Detection and Repair  | 11                           |                      |                      |                      | <b>X<sup>3</sup></b> |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |                      | <b>X</b>             | <b>X</b>             |                      |
| ET Controller Rebates   | 13                           |                      | <b>X<sup>4</sup></b> | <b>X<sup>4</sup></b> |                      |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
ACWD  
July 21, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           |           | X         |                |
| Homeowner irrigation classes  | 15                           |           |           | X         |                |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | X <sup>5</sup> |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           | X         | X         | X         |                |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           | X         |                |
| Rebate efficient clothes washers  | 20                           | X         | X         | X         |                |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           |           | X              |
| Restaurant low flow spray rinse nozzles   | 22                           | X         | X         | X         |                |
| Focused water audits for hotels/motels  | 23                           |           | X         | X         |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | X              |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | X              |
| Award program for water savings by businesses   | 26                           |           |           |           | X <sup>6</sup> |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
ACWD  
July 21, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           |           | X              |
| Financial incentives for complying with water use budget | 29                           |           | X         | X         |                |
| Financial incentives for irrigation upgrades             | 30                           |           | X         | X         |                |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | X              |
| Water Utility / City Department water reduction goals    | 32                           |           |           | X         |                |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>11</b> | <b>16</b> | <b>20</b> | <b>12</b>      |

<sup>1</sup> ACWD's SFR program is considered as effective as a survey program, and includes seasonal irrigation reminders to all SFR accounts, leak detection at times of meter reading, and notification of high water consumption to high water-using SFR accounts. ACWD has already met the 10-year BMP goals for MFR surveys.

<sup>2</sup> ACWD currently offers ULFT rebates to low-income MFRs and has filed a Cost Effectiveness-Exemption with the CUWCC for a large-scale SFR and MFR rebate program. However, a large-scale program may be cost-effective if grant funding becomes available.

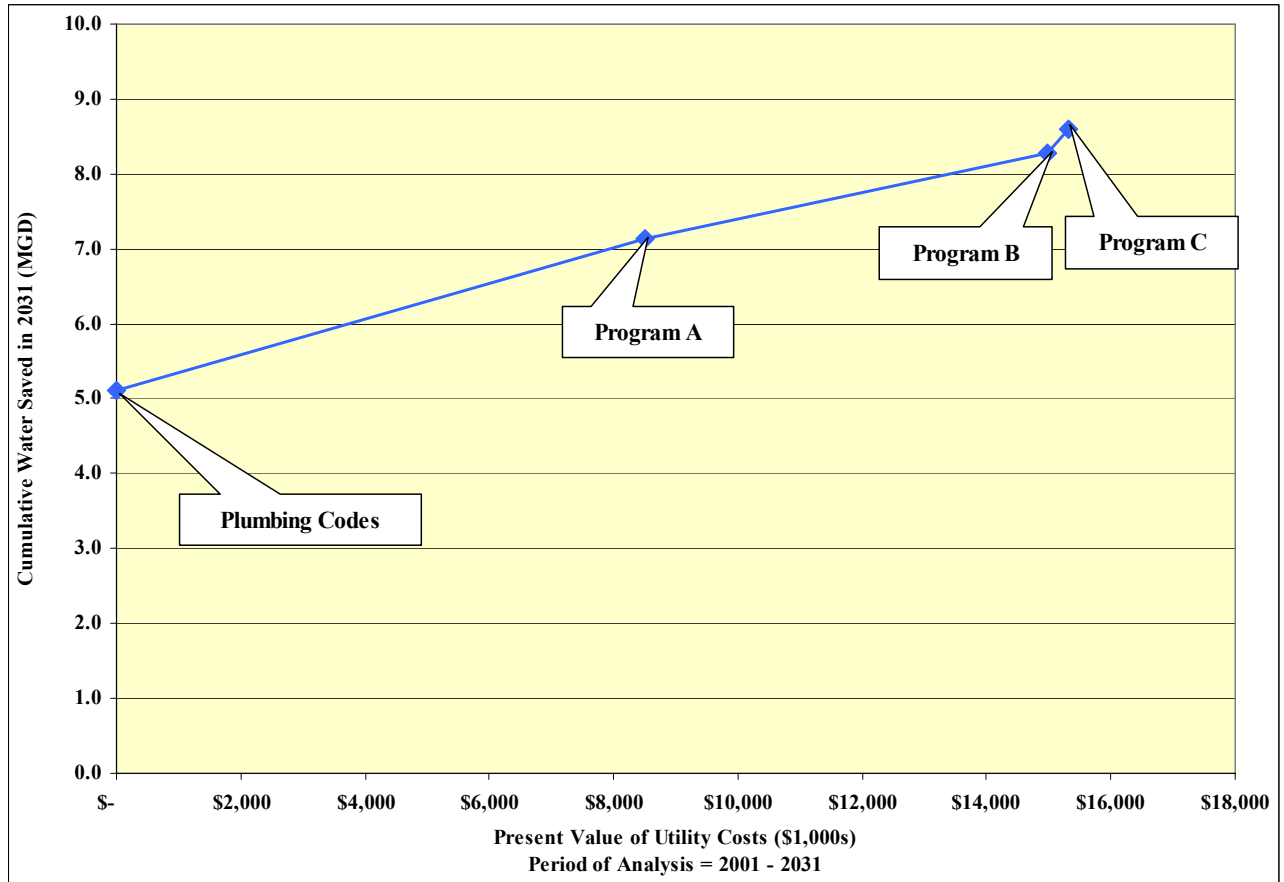
<sup>3</sup> ACWD currently has a leak detection program; however, it does not fit the exact program parameters described in this report. Customers are notified during time of meter reading if running water is noticed and to check for leaks. Follow-ups include additional meter readings, letters to the customer if continued meter running is observed, and site visit to determine leak location.

<sup>4</sup> ACWD is part of a regional grant program sponsored by the Department of Water Resources to rebate up to 124 ET controllers in the service area through 2007. Outcome of this grant program will help determine cost effectiveness of an ET controller program.

<sup>5</sup> ACWD provides information through the mail and at office location on water efficient plantings to all customers, new or old. ACWD currently does not specifically work with developers at the time of new development. Service area City Planning Departments have landscape ordinances in place that developers must adhere to.

<sup>6</sup> ACWD currently offers awards to landscape customers who meet or exceed their water budget during the previous year.

**FINAL Present Value of Utility Costs Versus Water Saved  
Alameda County Water District  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$8,507          | \$14,977         | \$15,321         |
| <b>Cumulative Water Saved (MGD)</b>      | 5.1                  | 7.1              | 8.3              | 8.6              |

**Appendix D2**  
**Brisbane, City of**

**FINAL Results of Conservation Measures Evaluation  
City of Brisbane  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 0.7                              | 0.9                                | 0.001                                 | \$2,933                                 | (\$12,717)          | \$9,004                       |
| 2                    | Residential Retrofit  |                                  |                                    |                                       |   |                     |                               |
| 3                    | Large Landscape Conservation  | 0.8                              | 0.7                                | 0.002                                 | \$2,246                                 | (\$7,933)           | \$11,643                      |
| 4                    | Water Budgets   | 67.2                             | 67.2                               | 0.017                                 | \$29                                    | \$373,899           | \$4,945                       |
| 5                    | Clothes Washer Rebate   | 1.8                              | 1.6                                | 0.001                                 | \$1,156                                 | \$5,717             | \$7,480                       |
| 6                    | Public Information Program  | 0.9                              | 1.6                                | 0.002                                 | \$2,264                                 | (\$3,977)           | \$10,217                      |
| 7                    | Commercial Water Audits   | 1.1                              | 1.1                                | 0.004                                 | \$1,771                                 | \$7,694             | \$43,409                      |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 7.9                              | 4.4                                | 0.000                                 | \$263                                   | \$8,010             | \$1,306                       |
| 9                    | Residential ULF Toilet Rebate   | 1.1                              | 0.4                                | 0.004                                 | \$1,817                                 | \$8,704             | \$57,074                      |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 7.1                              | 0.5                                | 0.005                                 | \$277                                   | \$105,063           | \$9,233                       |
| 11                   | Home Leak Detection and Repair  | 0.4                              | 0.4                                | 0.000                                 | \$6,591                                 | (\$13,874)          | \$12,680                      |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 1.3                              | 0.9                                | 0.004                                 | \$1,551                                 | \$19,753            | \$40,887                      |
| 13                   | ET Controller Rebates   | 1.3                              | 0.9                                | 0.002                                 | \$1,395                                 | \$8,087             | \$7,570                       |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            |                                  |                                    |                                       |   |                     |                               |
| 15                   | Homeowner irrigation classes  | 0.8                              | 0.1                                | 0.001                                 | \$2,484                                 | (\$7,375)           | \$8,250                       |
| 16                   | Promote water efficient plantings at new homes  | 0.2                              | 0.0                                | 0.000                                 | \$9,526                                 | (\$2,667)           | \$878                         |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 4.7                              | 10.1                               | 0.001                                 | \$435                                   | \$17,060            | \$4,883                       |
| 18                   | Incentives for retrofitting sub-metering  | 0.6                              | 0.2                                | 0.000                                 | \$3,460                                 | (\$128)             | \$168                         |
| 19                   | Require sub-metering multifamily units  | 0.9                              | 0.3                                | 0.001                                 | \$1,967                                 | (\$1,090)           | \$4,094                       |
| 20                   | Rebate efficient clothes washers  | 6.1                              | 11.8                               | 0.000                                 | \$346                                   | \$3,035             | \$638                         |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 5.2                              | 0.7                                | 0.006                                 | \$346                                   | \$94,412            | \$5,966                       |



**FINAL Results of Conservation Measures Evaluation  
City of Brisbane  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 41.1                               | 0.001                                 | \$134                                   | \$18,119            | \$1,405                       |
| 23                   | Focused water audits for hotels/motels                   | 11.5                             | 13.7                               | 0.002                                 | \$169                                   | \$33,711            | \$1,875                       |
| 24                   | WAVE Program (US EPA) for hotels                         | 62.7                             | 5.0                                | 0.000                                 | \$31                                    | \$2,421             | \$23                          |
| 25                   | Hotel retrofit (w/financial assistance)                  | 2.4                              | 2.4                                | 0.001                                 | \$816                                   | \$11,435            | \$4,838                       |
| 26                   | Award program for water savings by businesses            |                                  |                                    |                                       |   |                     |                               |
| 27                   | Replace inefficient water using equipment                | 0.0                              | 0.0                                | 0.000                                 | \$60,020                                | (\$22,324)          | \$11,093                      |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 6.9                              | 6.9                                | 0.002                                 | \$267                                   | \$42,550            | \$2,004                       |
| 29                   | Financial incentives for complying with water use budget | 24.0                             | 8.5                                | 0.010                                 | \$80                                    | \$202,009           | \$4,862                       |
| 30                   | Financial incentives for irrigation upgrades             | 1.0                              | 0.6                                | 0.001                                 | \$1,826                                 | (\$99)              | \$3,362                       |
| 31                   | Require dedicated irrigation meters for new accounts     |                                  |                                    |                                       |   |                     |                               |
| 32                   | Water Utility / City Department water reduction goals    |                                  |                                    |                                       |   |                     |                               |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
City of Brisbane  
July 13, 2004**

| <b>Description of Conservation Activity</b> | <b>Corresponding Measure Number</b> |
|---|-------------------------------------|
| Clothes Washer Rebate (CA BMP 6)            | 5                                   |
| Public Information Program (CA BMP 7)       | 6                                   |
| Water Waste Prohibition (CA BMP 13)         | None <sup>1</sup>                   |

<sup>1</sup>Measure not evaluated in model.

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Brisbane  
August 30, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            |           |           |           | <b>X</b>       |
| Residential Retrofit  | 2                            |           |           |           | <b>X</b>       |
| Large Landscape Conservation Audits   | 3                            |           |           |           | <b>X</b>       |
| Water Budgets   | 4                            |           | <b>X</b>  | <b>X</b>  |                |
| Clothes Washer Rebate   | 5                            | <b>X</b>  |           | <b>X</b>  |                |
| Public Information Program  | 6                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Commercial Water Audits   | 7                            |           |           |           | <b>X</b>       |
| ULF Toilet and Urinal Rebates   | 8                            |           |           |           | <b>X</b>       |
| Residential ULF Toilet Rebate   | 9                            |           |           |           | <b>X</b>       |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           | <b>X</b>  |                |
| Home Leak Detection and Repair  | 11                           |           |           |           | <b>X</b>       |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           |           | <b>X</b>       |
| ET Controller Rebates   | 13                           |           |           |           | <b>X</b>       |

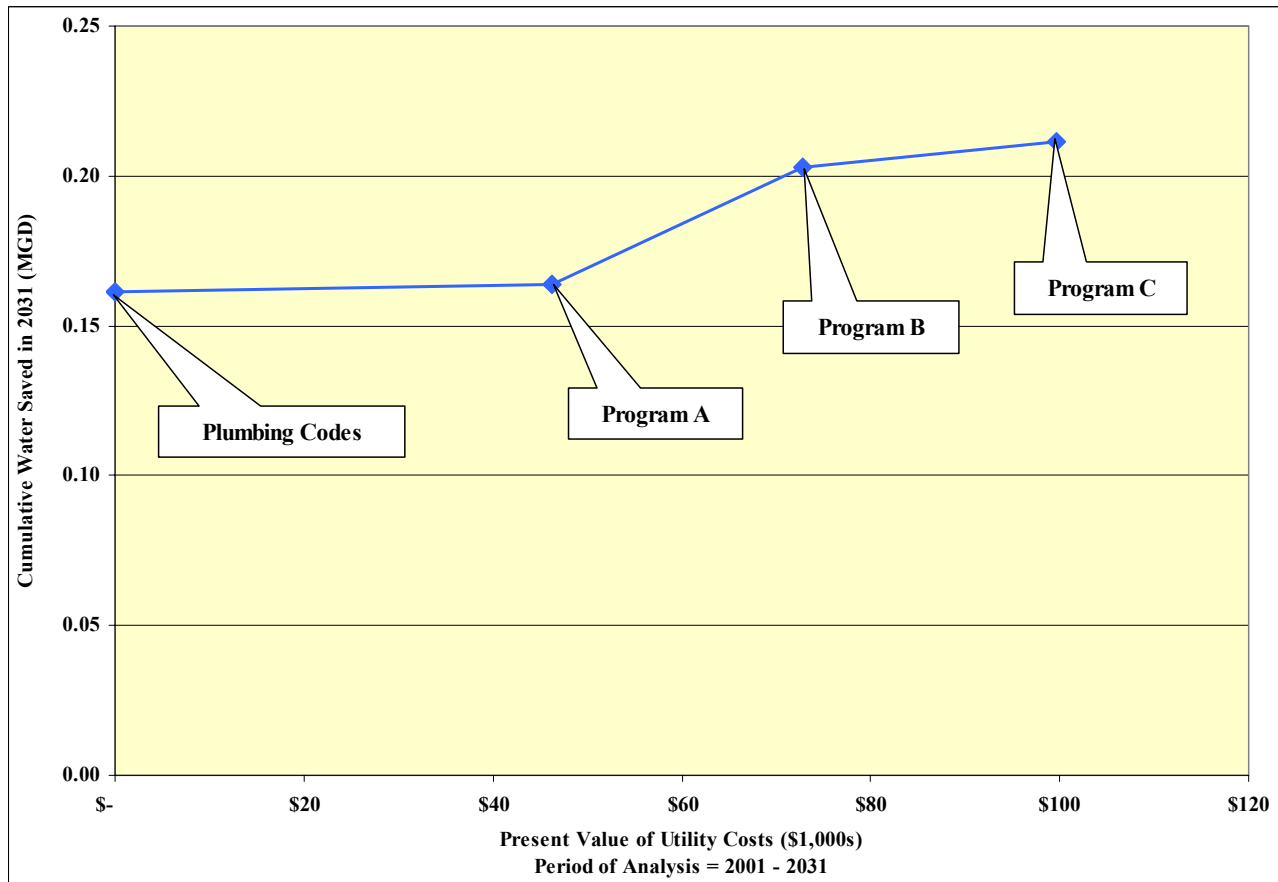
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Brisbane  
August 30, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           |           |           | X              |
| Homeowner irrigation classes  | 15                           |           |           |           | X              |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | X              |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | X              |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           |           | X              |
| Rebate efficient clothes washers  | 20                           |           |           |           | X              |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           | X         | X         |                |
| Restaurant low flow spray rinse nozzles   | 22                           |           |           |           | X              |
| Focused water audits for hotels/motels  | 23                           |           |           | X         |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | X              |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | X              |
| Award program for water savings by businesses   | 26                           |           |           |           | X              |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Brisbane  
August 30, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           | X         | X         |                |
| Financial incentives for complying with water use budget | 29                           |           |           |           | X              |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | X              |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | X              |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | X              |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>2</b>  | <b>4</b>  | <b>7</b>  | <b>25</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
City of Brisbane  
August 30, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$46             | \$73             | \$100            |
| <b>Cumulative Water Saved (MGD)</b>      | 0.16                 | 0.16             | 0.20             | 0.21             |

**Appendix D3**  
**Burlingame, City of**

**FINAL Results of Conservation Measures Evaluation  
City of Burlingame  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.4                              | 1.7                                | 0.016                                 | \$1,400                                 | \$107,217           | \$65,270                      |
| 2                    | Residential Retrofit  | 2.8                              | 7.4                                | 0.020                                 | \$752                                   | \$306,391           | \$183,335                     |
| 3                    | Large Landscape Conservation  | 1.6                              | 1.3                                | 0.005                                 | \$1,232                                 | \$37,567            | \$18,644                      |
| 4                    | Water Budgets   | 14.2                             | 14.2                               | 0.022                                 | \$141                                   | \$453,498           | \$34,442                      |
| 5                    | Clothes Washer Rebate   | 2.3                              | 2.0                                | 0.006                                 | \$930                                   | \$74,898            | \$63,458                      |
| 6                    | Public Information Program  | 1.7                              | 2.6                                | 0.018                                 | \$1,231                                 | \$166,325           | \$68,144                      |
| 7                    | Commercial Water Audits   | 1.5                              | 1.4                                | 0.025                                 | \$1,308                                 | \$181,817           | \$226,174                     |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 19.2                             | 10.7                               | 0.004                                 | \$110                                   | \$89,099            | \$5,520                       |
| 9                    | Residential ULF Toilet Rebate   | 1.3                              | 0.6                                | 0.051                                 | \$1,544                                 | \$267,829           | \$548,567                     |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10.1                             | 0.7                                | 0.063                                 | \$200                                   | \$1,294,391         | \$88,740                      |
| 11                   | Home Leak Detection and Repair  | 0.6                              | 0.6                                | 0.003                                 | \$4,067                                 | (\$56,436)          | \$84,971                      |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 2.0                              | 1.4                                | 0.049                                 | \$992                                   | \$551,952           | \$319,102                     |
| 13                   | ET Controller Rebates   | 1.2                              | 0.8                                | 0.009                                 | \$1,519                                 | \$33,205            | \$51,515                      |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 11.8                             | 0.9                                | 0.035                                 | \$157                                   | \$669,764           | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 5.8                              | 0.4                                | 0.017                                 | \$317                                   | \$297,384           | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 1.0                              | 0.1                                | 0.000                                 | \$1,786                                 | \$108               | \$2,131                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 3.7                              | 7.9                                | 0.001                                 | \$561                                   | \$19,711            | \$7,875                       |
| 18                   | Incentives for retrofitting sub-metering  | 0.9                              | 0.3                                | 0.001                                 | \$2,161                                 | (\$1,170)           | \$7,602                       |
| 19                   | Require sub-metering multifamily units  | 1.5                              | 0.4                                | 0.004                                 | \$1,206                                 | \$29,855            | \$15,160                      |
| 20                   | Rebate efficient clothes washers  | 7.4                              | 14.5                               | 0.002                                 | \$282                                   | \$44,616            | \$7,350                       |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 4.6                              | 0.7                                | 0.003                                 | \$391                                   | \$50,876            | \$3,851                       |



**FINAL Results of Conservation Measures Evaluation  
City of Burlingame  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 41.0                               | 0.010                                 | \$133                                   | \$219,521           | \$16,962                      |
| 23                   | Focused water audits for hotels/motels                   | 12.7                             | 15.0                               | 0.020                                 | \$153                                   | \$412,747           | \$20,625                      |
| 24                   | WAVE Program (US EPA) for hotels                         | 67.7                             | 5.4                                | 0.001                                 | \$29                                    | \$28,789            | \$253                         |
| 25                   | Hotel retrofit (w/financial assistance)                  | 1.4                              | 1.4                                | 0.011                                 | \$1,388                                 | \$67,125            | \$97,725                      |
| 26                   | Award program for water savings by businesses            | 1.9                              | 0.5                                | 0.003                                 | \$990                                   | \$28,147            | \$10,350                      |
| 27                   | Replace inefficient water using equipment                | 0.3                              | 0.1                                | 0.001                                 | \$6,870                                 | (\$81,964)          | \$66,429                      |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 10.8                             | 10.8                               | 0.000                                 | \$172                                   | \$4,786             | \$144                         |
| 29                   | Financial incentives for complying with water use budget | 6.5                              | 2.3                                | 0.015                                 | \$299                                   | \$271,492           | \$31,072                      |
| 30                   | Financial incentives for irrigation upgrades             | 1.2                              | 0.7                                | 0.000                                 | \$1,537                                 | \$803               | \$1,279                       |
| 31                   | Require dedicated irrigation meters for new accounts     |                                  |                                    |                                       |   |                     |                               |
| 32                   | Water Utility / City Department water reduction goals    | 4.0                              | 0.9                                | 0.007                                 | \$485                                   | \$111,953           | \$21,571                      |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**Final Summary of Current Conservation Programs  
City of Burlingame  
June 11, 2004**

| <b>Description of Conservation Activity</b> | <b>Corresponding Measure Number</b> |
|---|-------------------------------------|
| Residential Water Surveys (CA BMP 1)        | 1                                   |
| Residential Retrofit (CA BMP 2)             | 2                                   |
| Clothes Washer Rebate (CA BMP 6)            | 5                                   |
| Public Information Program (CA BMP 7)       | 6                                   |
| Residential ULF Toilet Rebates (CA BMP 14)  | 9                                   |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Burlingame  
June 11, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Residential Retrofit  | 2                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Large Landscape Conservation Audits   | 3                            |           |           |           | <b>X</b>       |
| Water Budgets   | 4                            |           |           | <b>X</b>  |                |
| Clothes Washer Rebate   | 5                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Public Information Program  | 6                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Commercial Water Audits   | 7                            |           | <b>X</b>  | <b>X</b>  |                |
| ULF Toilet and Urinal Rebates   | 8                            |           |           | <b>X</b>  |                |
| Residential ULF Toilet Rebate   | 9                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | <b>X</b>       |
| Home Leak Detection and Repair  | 11                           |           |           |           | <b>X</b>       |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           | <b>X</b>  |                |
| ET Controller Rebates   | 13                           |           |           | <b>X</b>  |                |

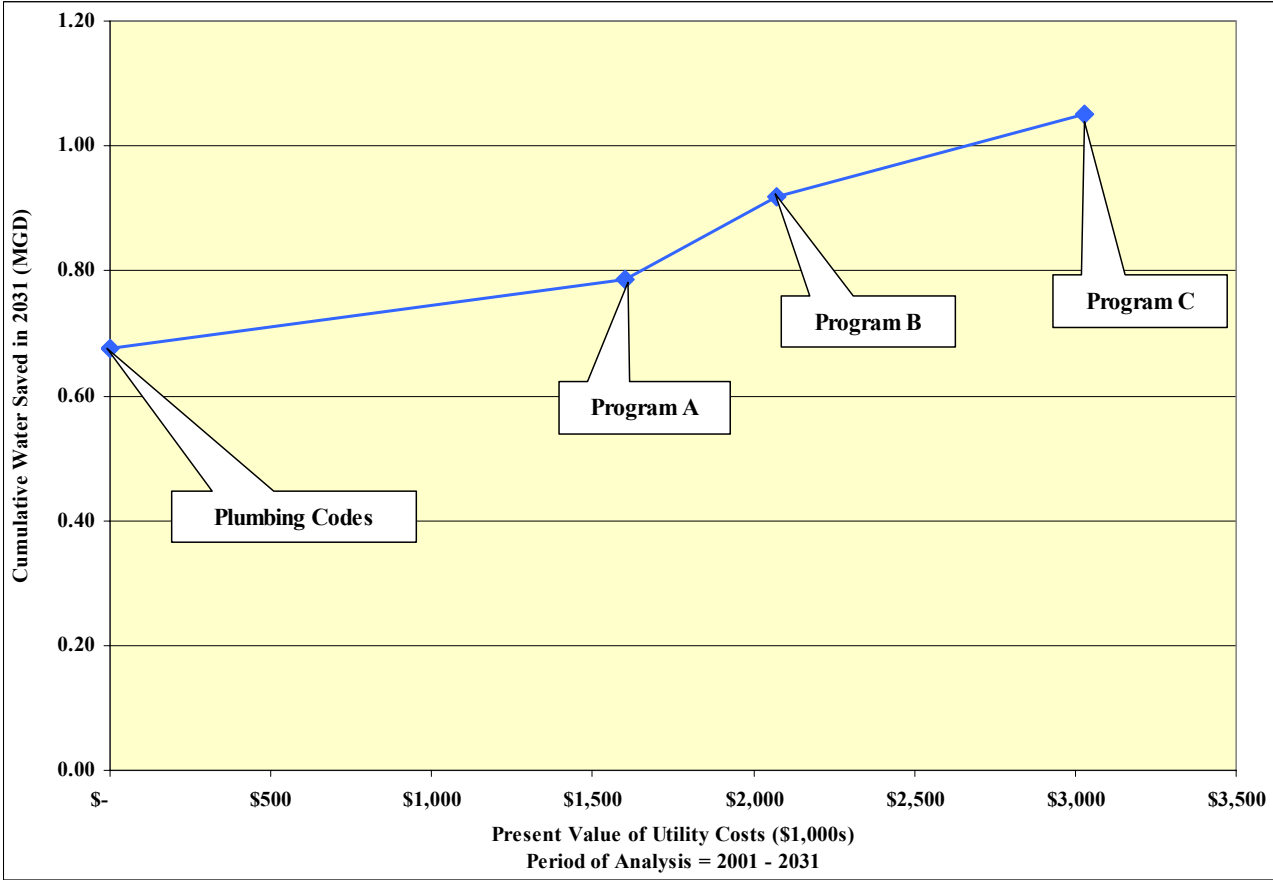
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Burlingame  
June 11, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           | X         | X         |                |
| Homeowner irrigation classes  | 15                           |           |           |           | X              |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | X              |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           | X         |                |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           |           | X              |
| Rebate efficient clothes washers  | 20                           |           |           | X         |                |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           | X         |                |
| Restaurant low flow spray rinse nozzles   | 22                           |           | X         | X         |                |
| Focused water audits for hotels/motels  | 23                           |           | X         | X         |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | X              |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           | X         |                |
| Award program for water savings by businesses   | 26                           |           |           | X         |                |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Burlingame  
June 11, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           |           | X              |
| Financial incentives for complying with water use budget | 29                           |           |           |           | X              |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | X              |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | X              |
| Water Utility / City Department water reduction goals    | 32                           |           |           | X         |                |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>5</b>  | <b>9</b>  | <b>19</b> | <b>13</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
City of Burlingame  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$1,600          | \$2,073          | \$3,027          |
| <b>Cumulative Water Saved (MGD)</b>      | 0.68                 | 0.79             | 0.92             | 1.05             |

**Appendix D4**  
**California Water Service Company – Bear Gulch District**

**FINAL Results of Conservation Measures Evaluation  
California Water Service Company – Bear Gulch District  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 3.3                              | 3.6                                | 0.071                                 | \$592                                   | \$1,115,848         | \$122,390                     |
| 2                    | Residential Retrofit  | 2.6                              | 7.0                                | 0.024                                 | \$800                                   | \$356,563           | \$228,770                     |
| 3                    | Large Landscape Conservation  | 1.5                              | 1.3                                | 0.012                                 | \$1,259                                 | \$92,674            | \$48,676                      |
| 4                    | Water Budgets   |                                  |                                    |                                       |   |                     |                               |
| 5                    | Clothes Washer Rebate   | 2.0                              | 1.8                                | 0.012                                 | \$1,038                                 | \$145,679           | \$151,805                     |
| 6                    | Public Information Program  | 3.9                              | 5.2                                | 0.096                                 | \$534                                   | \$1,654,540         | \$162,462                     |
| 7                    | Commercial Water Audits   | 1.6                              | 1.1                                | 0.036                                 | \$1,242                                 | \$294,106           | \$316,032                     |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 9.4                              | 5.2                                | 0.003                                 | \$223                                   | \$73,067            | \$9,766                       |
| 9                    | Residential ULF Toilet Rebate   | 1.6                              | 0.7                                | 0.077                                 | \$1,218                                 | \$690,478           | \$657,621                     |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10.7                             | 0.8                                | 0.095                                 | \$189                                   | \$1,964,547         | \$109,594                     |
| 11                   | Home Leak Detection and Repair  | 1.1                              | 1.1                                | 0.014                                 | \$2,242                                 | \$40,364            | \$202,655                     |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 2.6                              | 1.9                                | 0.105                                 | \$761                                   | \$1,460,247         | \$527,260                     |
| 13                   | ET Controller Rebates   | 3.4                              | 2.3                                | 0.049                                 | \$544                                   | \$721,767           | \$99,469                      |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 52.3                             | 3.3                                | 0.156                                 | \$35                                    | \$3,173,453         | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 24.3                             | 1.4                                | 0.073                                 | \$75                                    | \$1,444,026         | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 3.7                              | 0.4                                | 0.003                                 | \$486                                   | \$38,359            | \$4,052                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 3.4                              | 2.7                                | 0.001                                 | \$598                                   | \$24,128            | \$10,553                      |
| 18                   | Incentives for retrofitting sub-metering  | 4.4                              | 1.4                                | 0.000                                 | \$449                                   | \$5,559             | \$957                         |
| 19                   | Require sub-metering multifamily units  | 7.3                              | 2.0                                | 0.001                                 | \$252                                   | \$14,607            | \$674                         |
| 20                   | Rebate efficient clothes washers  | 0.7                              | 1.3                                | 0.000                                 | \$3,121                                 | (\$520)             | \$1,675                       |
| 21                   | Enforce landscape requirements for new landscaping systems (turf                            | 6.8                              | 0.9                                | 0.002                                 | \$268                                   | \$34,542            | \$1,730                       |



**FINAL Results of Conservation Measures Evaluation  
California Water Service Company – Bear Gulch District  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
|                      | limitations / regulations)                               |                                  |                                    |                                       |   |                     |                               |
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.4                             | 42.0                               | 0.006                                 | \$131                                   | \$129,657           | \$9,831                       |
| 23                   | Focused water audits for hotels/motels                   | 6.2                              | 4.0                                | 0.002                                 | \$316                                   | \$41,455            | \$4,706                       |
| 24                   | WAVE Program (US EPA) for hotels                         | 33.5                             | 1.5                                | 0.000                                 | \$58                                    | \$3,200             | \$58                          |
| 25                   | Hotel retrofit (w/financial assistance)                  | 5.9                              | 3.3                                | 0.001                                 | \$331                                   | \$21,896            | \$2,635                       |
| 26                   | Award program for water savings by businesses            | 2.9                              | 0.6                                | 0.005                                 | \$621                                   | \$63,712            | \$10,350                      |
| 27                   | Replace inefficient water using equipment                | 0.5                              | 0.1                                | 0.003                                 | \$3,997                                 | (\$71,365)          | \$80,823                      |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 12.7                             | 12.7                               | 0.000                                 | \$146                                   | \$17                | \$0                           |
| 29                   | Financial incentives for complying with water use budget |                                  |                                    |                                       |   |                     |                               |
| 30                   | Financial incentives for irrigation upgrades             |                                  |                                    |                                       |   |                     |                               |
| 31                   | Require dedicated irrigation meters for new accounts     | 3.8                              | 0.5                                | 0.001                                 | \$483                                   | \$19,736            | \$485                         |
| 32                   | Water Utility / City Department water reduction goals    | 10.0                             | 2.2                                | 0.011                                 | \$195                                   | \$216,046           | \$13,947                      |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
California Water Service Company – Bear Gulch District  
June 15, 2004**

| <b>Description of Conservation Activity</b> | <b>Corresponding Measure Number</b> |
|---|-------------------------------------|
| Residential Retrofit (CA BMP 2)             | 2                                   |
| Clothes Washer Rebate (CA BMP 6)            | 5                                   |
| Public Information Program (CA BMP 7)       | 6                                   |
| Residential ULF Toilet Rebates (CA BMP 14)  | 9                                   |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Cal Water Service Company – Bear Gulch District  
June 15, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            |           | X         | X         |                |
| Residential Retrofit  | 2                            | X         | X         | X         |                |
| Large Landscape Conservation Audits   | 3                            |           |           | X         |                |
| Water Budgets   | 4                            |           |           |           | X              |
| Clothes Washer Rebate   | 5                            | X         | X         | X         |                |
| Public Information Program  | 6                            | X         | X         | X         |                |
| Commercial Water Audits   | 7                            |           |           |           | X              |
| ULF Toilet and Urinal Rebates   | 8                            |           | X         | X         |                |
| Residential ULF Toilet Rebate   | 9                            | X         | X         | X         |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | X              |
| Home Leak Detection and Repair  | 11                           |           |           |           | X              |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           | X         | X         |                |
| ET Controller Rebates   | 13                           |           | X         | X         |                |
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           | X         | X         |                |

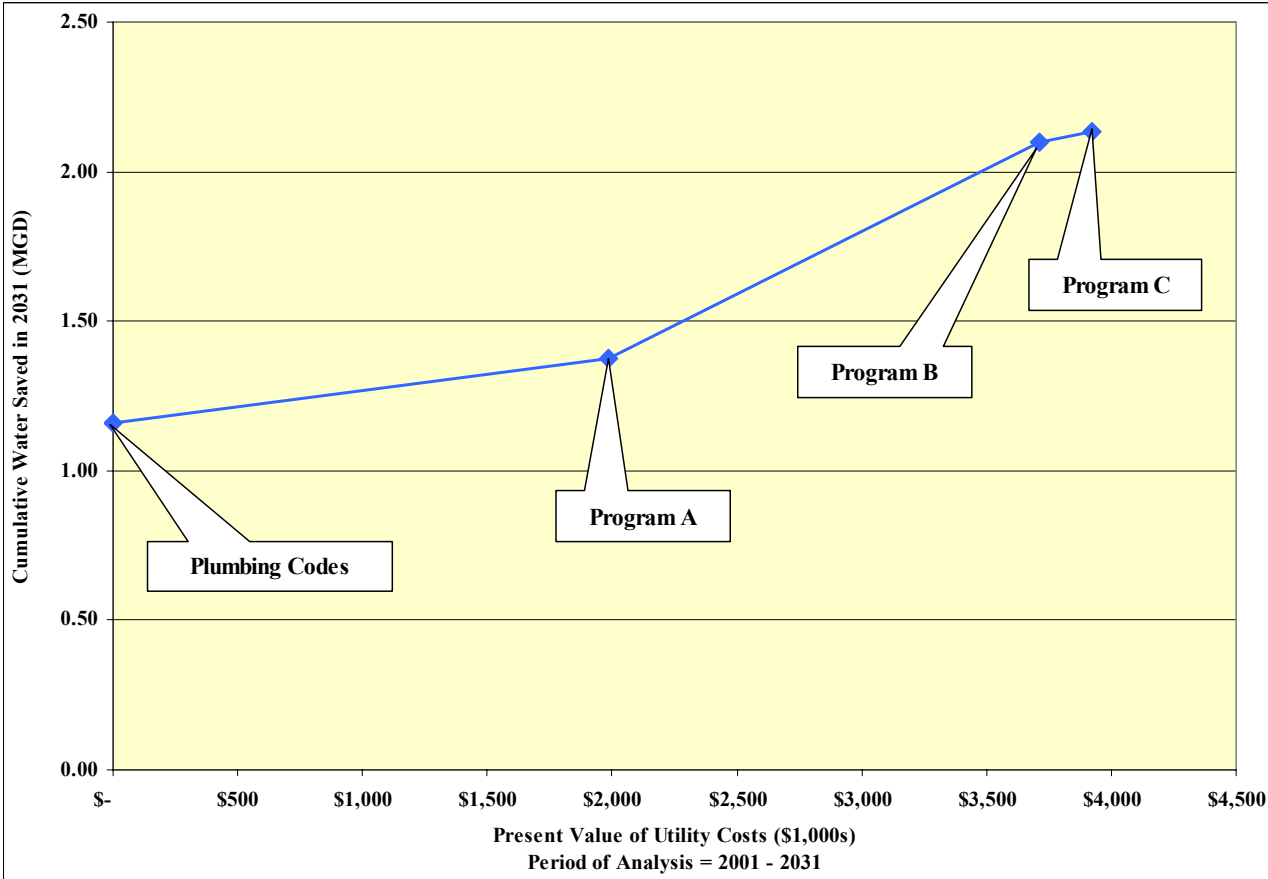
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Cal Water Service Company – Bear Gulch District  
June 15, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Homeowner irrigation classes  | 15                           |           | <b>X</b>  | <b>X</b>  |                |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | <b>X</b>       |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | <b>X</b>       |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | <b>X</b>       |
| Require sub-metering multifamily units  | 19                           |           |           |           | <b>X</b>       |
| Rebate efficient clothes washers  | 20                           |           |           |           | <b>X</b>       |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           | <b>X</b>  |                |
| Restaurant low flow spray rinse nozzles   | 22                           |           | <b>X</b>  | <b>X</b>  |                |
| Focused water audits for hotels/motels  | 23                           |           |           | <b>X</b>  |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | <b>X</b>       |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | <b>X</b>       |
| Award program for water savings by businesses   | 26                           |           |           | <b>X</b>  |                |
| Replace inefficient water using equipment   | 27                           |           |           |           | <b>X</b>       |
| Require 0.5 gal/flush urinals in new buildings  | 28                           |           |           |           | <b>X</b>       |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Cal Water Service Company – Bear Gulch District  
June 15, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Financial incentives for complying with water use budget | 29                           |           |           |           | <b>X</b>       |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | <b>X</b>       |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | <b>X</b>       |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>4</b>  | <b>11</b> | <b>15</b> | <b>17</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
California Water Service Company – Bear Gulch District  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$1,986          | \$3,709          | \$3,925          |
| <b>Cumulative Water Saved (MGD)</b>      | 1.16                 | 1.37             | 2.10             | 2.13             |

**Appendix D5**  
**California Water Service Company – Mid Peninsula District**

**FINAL Results of Conservation Measures Evaluation  
California Water Service Company – Mid-Peninsula District  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.6                              | 1.9                                | 0.068                                 | \$1,275                                 | \$544,563           | \$249,261                     |
| 2                    | Residential Retrofit  | 2.9                              | 7.8                                | 0.042                                 | \$719                                   | \$655,017           | \$355,332                     |
| 3                    | Large Landscape Conservation  | 1.6                              | 1.4                                | 0.032                                 | \$1,196                                 | \$267,446           | \$123,485                     |
| 4                    | Water Budgets   |                                  |                                    |                                       |   |                     |                               |
| 5                    | Clothes Washer Rebate   | 2.6                              | 2.3                                | 0.023                                 | \$802                                   | \$332,075           | \$218,455                     |
| 6                    | Public Information Program  | 1.8                              | 2.8                                | 0.088                                 | \$1,169                                 | \$890,176           | \$323,533                     |
| 7                    | Commercial Water Audits   | 0.7                              | 0.7                                | 0.080                                 | \$2,797                                 | (\$765,760)         | \$1,545,329                   |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 11.4                             | 6.3                                | 0.011                                 | \$185                                   | \$234,753           | \$25,524                      |
| 9                    | Residential ULF Toilet Rebate   | 1.1                              | 0.5                                | 0.273                                 | \$1,815                                 | \$589,450           | \$3,450,286                   |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 6.9                              | 0.5                                | 0.307                                 | \$293                                   | \$6,018,875         | \$558,209                     |
| 11                   | Home Leak Detection and Repair  | 0.6                              | 0.6                                | 0.016                                 | \$3,864                                 | (\$245,753)         | \$403,093                     |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 2.0                              | 1.4                                | 0.189                                 | \$1,001                                 | \$2,100,046         | \$1,237,903                   |
| 13                   | ET Controller Rebates   | 1.2                              | 0.8                                | 0.035                                 | \$1,590                                 | \$99,378            | \$206,682                     |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 15.5                             | 0.9                                | 0.047                                 | \$117                                   | \$899,280           | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 7.1                              | 0.4                                | 0.021                                 | \$257                                   | \$375,537           | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 1.1                              | 0.1                                | 0.002                                 | \$1,668                                 | \$4,116             | \$13,750                      |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 0.6                              | 1.2                                | 0.001                                 | \$5,127                                 | (\$29,683)          | \$70,875                      |
| 18                   | Incentives for retrofitting sub-metering  | 4.4                              | 1.5                                | 0.008                                 | \$443                                   | \$130,649           | \$22,033                      |
| 19                   | Require sub-metering multifamily units  | 7.9                              | 2.2                                | 0.011                                 | \$236                                   | \$201,414           | \$10,686                      |
| 20                   | Rebate efficient clothes washers  | 8.7                              | 16.9                               | 0.008                                 | \$241                                   | \$165,725           | \$22,838                      |



**FINAL Results of Conservation Measures Evaluation  
California Water Service Company – Mid-Peninsula District  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 5.4                              | 0.8                                | 0.010                                 | \$337                                   | \$172,827           | \$10,935                      |
| 22                   | Restaurant low flow spray rinse nozzles   | 15.2                             | 41.3                               | 0.028                                 | \$133                                   | \$600,122           | \$46,272                      |
| 23                   | Focused water audits for hotels/motels  | 18.2                             | 11.9                               | 0.030                                 | \$107                                   | \$633,748           | \$21,563                      |
| 24                   | WAVE Program (US EPA) for hotels  | 99.1                             | 4.4                                | 0.002                                 | \$20                                    | \$44,250            | \$265                         |
| 25                   | Hotel retrofit (w/financial assistance)   | 6.2                              | 3.4                                | 0.016                                 | \$316                                   | \$299,525           | \$34,063                      |
| 26                   | Award program for water savings by businesses   | 2.6                              | 0.6                                | 0.004                                 | \$693                                   | \$53,596            | \$10,350                      |
| 27                   | Replace inefficient water using equipment   | 0.3                              | 0.0                                | 0.005                                 | \$7,532                                 | (\$290,556)         | \$225,226                     |
| 28                   | Require 0.5 gal/flush urinals in new buildings  | 23.9                             | 23.9                               | 0.000                                 | \$78                                    | \$7,790             | \$90                          |
| 29                   | Financial incentives for complying with water use budget                                    |                                  |                                    |                                       |   |                     |                               |
| 30                   | Financial incentives for irrigation upgrades  | 0.7                              | 0.4                                | 0.001                                 | \$2,707                                 | (\$6,376)           | \$5,314                       |
| 31                   | Require dedicated irrigation meters for new accounts  | 3.0                              | 0.4                                | 0.006                                 | \$605                                   | \$88,096            | \$2,775                       |
| 32                   | Water Utility / City Department water reduction goals                                       | 8.8                              | 2.0                                | 0.034                                 | \$222                                   | \$656,979           | \$49,037                      |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
California Water Service Company - Mid-Peninsula Water District  
June 21, 2004**

| <b>Description of Conservation Activity</b> | <b>Corresponding Measure Number</b> |
|---|-------------------------------------|
| Residential Retrofit (CA BMP 2)             | 2                                   |
| Clothes Washer Rebate (CA BMP 6)            | 5                                   |
| Public Information Program (CA BMP 7)       | 6                                   |
| Residential ULF Toilet Rebates (CA BMP 14)  | 9                                   |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Cal Water Service Company – Mid-Peninsula Water District  
June 21, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            |           | X         | X         |                |
| Residential Retrofit  | 2                            | X         | X         | X         |                |
| Large Landscape Conservation Audits   | 3                            |           |           | X         |                |
| Water Budgets   | 4                            |           |           |           | X              |
| Clothes Washer Rebate   | 5                            | X         | X         | X         |                |
| Public Information Program  | 6                            | X         | X         | X         |                |
| Commercial Water Audits   | 7                            |           |           | X         |                |
| ULF Toilet and Urinal Rebates   | 8                            |           | X         | X         |                |
| Residential ULF Toilet Rebate   | 9                            | X         | X         | X         |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | X              |
| Home Leak Detection and Repair  | 11                           |           |           |           | X              |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           | X         | X         |                |
| ET Controller Rebates   | 13                           |           |           | X         |                |
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           | X         | X         |                |

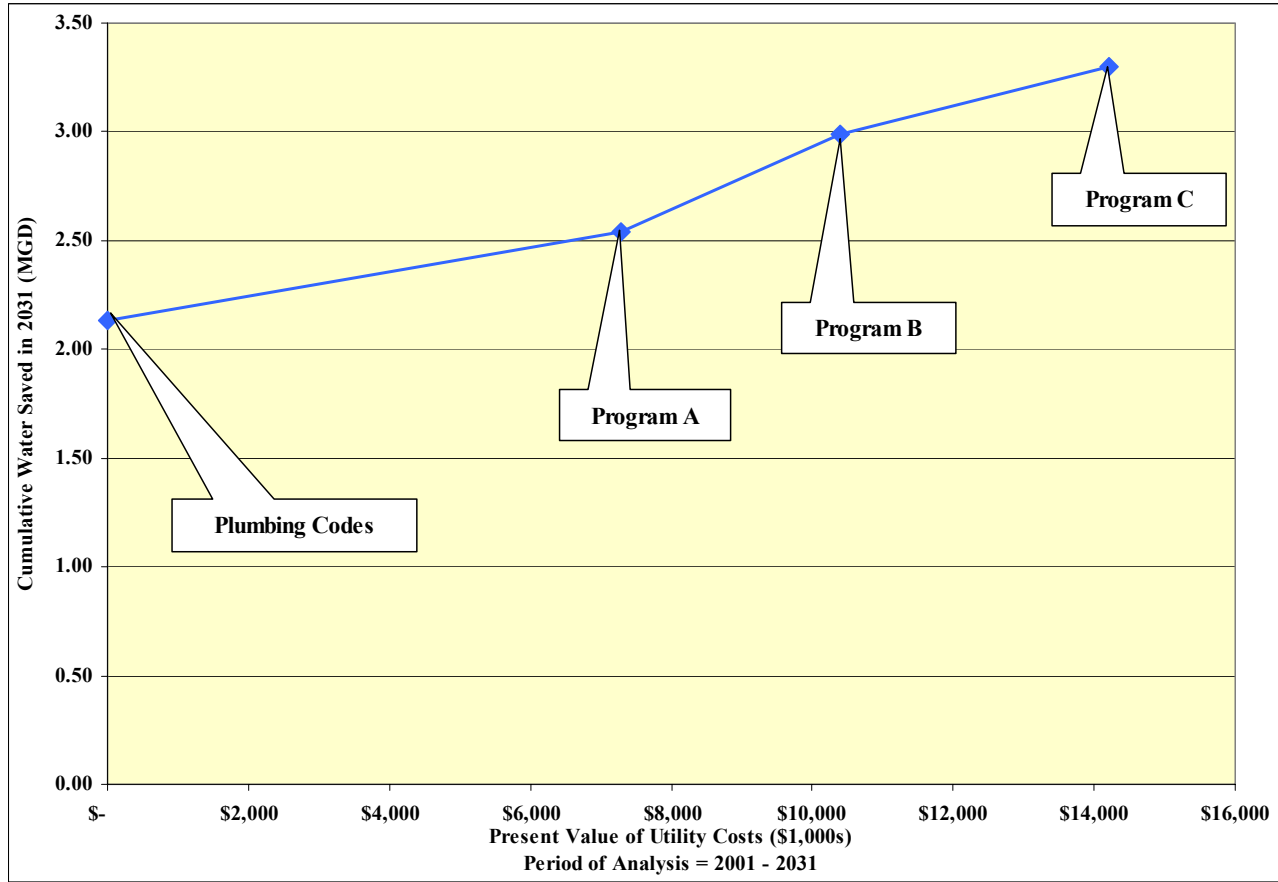
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Cal Water Service Company – Mid-Peninsula Water District  
June 21, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Homeowner irrigation classes  | 15                           |           |           | X         |                |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | X              |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | X              |
| Incentives for retrofitting sub-metering  | 18                           |           |           | X         |                |
| Require sub-metering multifamily units  | 19                           |           |           |           | X              |
| Rebate efficient clothes washers  | 20                           |           | X         | X         |                |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           | X         |                |
| Restaurant low flow spray rinse nozzles   | 22                           |           | X         | X         |                |
| Focused water audits for hotels/motels  | 23                           |           | X         | X         |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | X              |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           | X         |                |
| Award program for water savings by businesses   | 26                           |           |           |           | X              |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |
| Require 0.5 gal/flush urinals in new buildings  | 28                           |           |           |           | X              |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Cal Water Service Company – Mid-Peninsula Water District  
June 21, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Financial incentives for complying with water use budget | 29                           |           |           |           | X              |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | X              |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           | X         |                |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | X              |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>4</b>  | <b>11</b> | <b>19</b> | <b>13</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
California Water Service Company – Mid-Peninsula District  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$7,293          | \$10,407         | \$14,204         |
| <b>Cumulative Water Saved (MGD)</b>      | 2.14                 | 2.54             | 2.99             | 3.30             |

**Appendix D6**

**California Water Service Company – South San Francisco District**

**FINAL Results of Conservation Measures Evaluation  
California Water Service Company – South San Francisco District  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.0                              | 1.4                                | 0.019                                 | \$1,973                                 | \$2,018             | \$106,453                     |
| 2                    | Residential Retrofit  | 2.9                              | 7.6                                | 0.014                                 | \$735                                   | \$217,219           | \$121,057                     |
| 3                    | Large Landscape Conservation  | 1.6                              | 1.3                                | 0.029                                 | \$1,210                                 | \$237,035           | \$112,981                     |
| 4                    | Water Budgets   |                                  |                                    |                                       |   |                     |                               |
| 5                    | Clothes Washer Rebate   | 2.8                              | 2.5                                | 0.009                                 | \$752                                   | \$129,312           | \$76,776                      |
| 6                    | Public Information Program  | 1.3                              | 2.2                                | 0.028                                 | \$1,622                                 | \$139,012           | \$139,762                     |
| 7                    | Commercial Water Audits   | 2.3                              | 2.1                                | 0.075                                 | \$851                                   | \$936,667           | \$445,711                     |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 9.8                              | 5.4                                | 0.005                                 | \$215                                   | \$110,592           | \$14,212                      |
| 9                    | Residential ULF Toilet Rebate   | 0.9                              | 0.4                                | 0.128                                 | \$2,253                                 | (\$331,631)         | \$2,113,229                   |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 4.7                              | 0.3                                | 0.140                                 | \$439                                   | \$2,536,580         | \$341,878                     |
| 11                   | Home Leak Detection and Repair  | 0.6                              | 0.6                                | 0.006                                 | \$4,419                                 | (\$130,571)         | \$174,247                     |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 1.9                              | 1.4                                | 0.077                                 | \$1,031                                 | \$827,543           | \$518,088                     |
| 13                   | ET Controller Rebates   | 0.9                              | 0.6                                | 0.012                                 | \$2,153                                 | (\$41,623)          | \$91,707                      |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 5.3                              | 0.3                                | 0.016                                 | \$347                                   | \$264,781           | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 2.5                              | 0.1                                | 0.007                                 | \$738                                   | \$91,030            | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 0.4                              | 0.0                                | 0.000                                 | \$4,887                                 | (\$13,636)          | \$4,844                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 4.1                              | 8.7                                | 0.001                                 | \$506                                   | \$22,672            | \$7,875                       |
| 18                   | Incentives for retrofitting sub-metering  | 3.6                              | 1.2                                | 0.001                                 | \$542                                   | \$19,162            | \$4,228                       |
| 19                   | Require sub-metering multifamily units  | 5.7                              | 1.6                                | 0.003                                 | \$316                                   | \$46,898            | \$2,241                       |
| 20                   | Rebate efficient clothes washers  | 9.2                              | 17.8                               | 0.001                                 | \$229                                   | \$29,996            | \$3,900                       |



**FINAL Results of Conservation Measures Evaluation  
California Water Service Company – South San Francisco District  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 8.7                              | 1.2                                | 0.008                                 | \$206                                   | \$134,630           | \$3,936                       |
| 22                   | Restaurant low flow spray rinse nozzles   | 15.1                             | 41.1                               | 0.010                                 | \$134                                   | \$223,466           | \$17,328                      |
| 23                   | Focused water audits for hotels/motels  | 22.4                             | 26.5                               | 0.058                                 | \$87                                    | \$1,231,093         | \$33,750                      |
| 24                   | WAVE Program (US EPA) for hotels  | 121.7                            | 9.7                                | 0.004                                 | \$16                                    | \$85,204            | \$414                         |
| 25                   | Hotel retrofit (w/financial assistance)   | 9.2                              | 9.3                                | 0.031                                 | \$211                                   | \$612,802           | \$43,675                      |
| 26                   | Award program for water savings by businesses   | 5.8                              | 1.6                                | 0.009                                 | \$315                                   | \$157,177           | \$10,350                      |
| 27                   | Replace inefficient water using equipment   | 1.0                              | 0.2                                | 0.010                                 | \$1,948                                 | (\$285)             | \$126,925                     |
| 28                   | Require 0.5 gal/flush urinals in new buildings  | 11.2                             | 11.2                               | 0.000                                 | \$164                                   | \$1,934             | \$43                          |
| 29                   | Financial incentives for complying with water use budget                                    |                                  |                                    |                                       |   |                     |                               |
| 30                   | Financial incentives for irrigation upgrades  | 1.2                              | 0.7                                | 0.001                                 | \$1,480                                 | \$3,723             | \$4,020                       |
| 31                   | Require dedicated irrigation meters for new accounts  | 5.6                              | 0.7                                | 0.005                                 | \$317                                   | \$88,789            | \$1,164                       |
| 32                   | Water Utility / City Department water reduction goals                                       | 8.9                              | 2.0                                | 0.023                                 | \$220                                   | \$441,629           | \$32,552                      |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
California Water Service Company – South San Francisco District  
June 15, 2004**

| <b>Description of Conservation Activity</b>    | <b>Corresponding Measure Number</b> |
|--|-------------------------------------|
| Residential Retrofit (CA BMP 2)                | 2                                   |
| Large Landscape Conservation Audits (CA BMP 5) | 3                                   |
| Clothes Washer Rebate (CA BMP 6)               | 5                                   |
| Public Information Program (CA BMP 7)          | 6                                   |
| Residential ULF Toilet Rebates (CA BMP 14)     | 9                                   |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
California Water Service Company – South San Francisco District  
June 15, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            |           | X         | X         |                |
| Residential Retrofit  | 2                            | X         | X         | X         |                |
| Large Landscape Conservation Audits   | 3                            | X         | X         | X         |                |
| Water Budgets   | 4                            |           |           |           | X              |
| Clothes Washer Rebate   | 5                            | X         | X         | X         |                |
| Public Information Program  | 6                            | X         | X         | X         |                |
| Commercial Water Audits   | 7                            |           | X         | X         |                |
| ULF Toilet and Urinal Rebates   | 8                            |           |           | X         |                |
| Residential ULF Toilet Rebate   | 9                            | X         | X         | X         |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | X              |
| Home Leak Detection and Repair  | 11                           |           |           |           | X              |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           | X         | X         |                |
| ET Controller Rebates   | 13                           |           |           |           | X              |

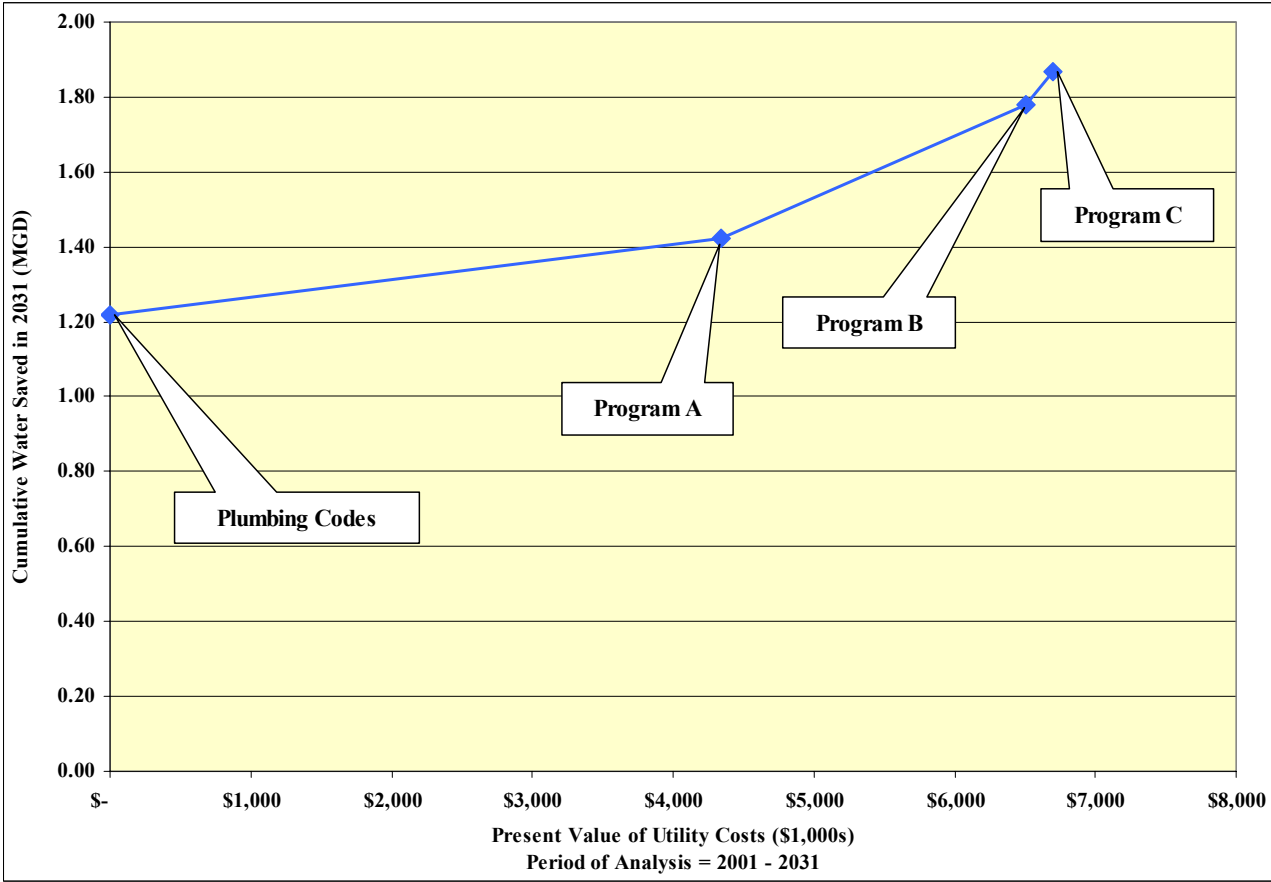
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
California Water Service Company – South San Francisco District  
June 15, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           | X         | X         |                |
| Homeowner irrigation classes  | 15                           |           |           | X         |                |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | X              |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | X              |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           |           | X              |
| Rebate efficient clothes washers  | 20                           |           |           |           | X              |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           | X         |                |
| Restaurant low flow spray rinse nozzles   | 22                           |           | X         | X         |                |
| Focused water audits for hotels/motels  | 23                           |           | X         | X         |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | X              |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           | X         |                |
| Award program for water savings by businesses   | 26                           |           |           | X         |                |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
California Water Service Company – South San Francisco District  
June 15, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           |           | X              |
| Financial incentives for complying with water use budget | 29                           |           |           |           | X              |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | X              |
| Require dedicated irrigation meters for new accounts     | 31                           |           | X         | X         |                |
| Water Utility / City Department water reduction goals    | 32                           |           | X         | X         |                |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>5</b>  | <b>13</b> | <b>18</b> | <b>14</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
California Water Service Company – South San Francisco District  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$4,345          | \$6,511          | \$6,700          |
| <b>Cumulative Water Saved (MGD)</b>      | 1.22                 | 1.42             | 1.78             | 1.87             |

**Appendix D7**  
**Coastside County Water District**

**FINAL Results of Conservation Measures Evaluation  
Coastside County Water District  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 0.9                              | 1.2                                | 0.007                                 | \$2,285                                 | (\$26,406)          | \$46,142                      |
| 2                    | Residential Retrofit  |                                  |                                    |                                       |   |                     |                               |
| 3                    | Large Landscape Conservation  | 0.7                              | 0.6                                | 0.005                                 | \$2,672                                 | (\$44,708)          | \$45,092                      |
| 4                    | Water Budgets   | 62.7                             | 62.7                               | 0.028                                 | \$32                                    | \$614,586           | \$9,253                       |
| 5                    | Clothes Washer Rebate   | 2.6                              | 2.3                                | 0.003                                 | \$800                                   | \$47,553            | \$31,161                      |
| 6                    | Public Information Program  | 1.3                              | 2.4                                | 0.011                                 | \$1,544                                 | \$62,375            | \$50,517                      |
| 7                    | Commercial Water Audits   | 2.0                              | 1.8                                | 0.011                                 | \$983                                   | \$121,972           | \$75,592                      |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 10.2                             | 5.7                                | 0.001                                 | \$205                                   | \$17,087            | \$2,097                       |
| 9                    | Residential ULF Toilet Rebate   | 1.5                              | 0.7                                | 0.035                                 | \$1,307                                 | \$271,624           | \$310,299                     |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 12.3                             | 0.9                                | 0.039                                 | \$164                                   | \$816,352           | \$50,218                      |
| 11                   | Home Leak Detection and Repair  | 0.4                              | 0.4                                | 0.002                                 | \$5,853                                 | (\$63,164)          | \$62,687                      |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 1.9                              | 1.3                                | 0.027                                 | \$1,053                                 | \$282,677           | \$183,921                     |
| 13                   | ET Controller Rebates   | 0.9                              | 0.6                                | 0.005                                 | \$1,980                                 | (\$8,246)           | \$34,741                      |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 1.2                              | 0.4                                | 0.024                                 | \$1,616                                 | \$105,133           | \$115,500                     |
| 15                   | Homeowner irrigation classes  | 0.8                              | 0.2                                | 0.015                                 | \$2,556                                 | (\$97,492)          | \$115,500                     |
| 16                   | Promote water efficient plantings at new homes  | 0.4                              | 0.0                                | 0.000                                 | \$4,368                                 | (\$7,512)           | \$4,613                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              |                                  |                                    |                                       |   |                     |                               |
| 18                   | Incentives for retrofitting sub-metering  | 0.4                              | 0.3                                | 0.000                                 | \$5,088                                 | (\$1,295)           | \$1,199                       |
| 19                   | Require sub-metering multifamily units  | 2.8                              | 0.5                                | 0.002                                 | \$675                                   | \$32,977            | \$6,639                       |
| 20                   | Rebate efficient clothes washers  | 7.0                              | 13.5                               | 0.000                                 | \$301                                   | \$3,508             | \$625                         |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 9.1                              | 1.3                                | 0.006                                 | \$203                                   | \$108,326           | \$4,587                       |



**FINAL Results of Conservation Measures Evaluation  
Coastside County Water District  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 41.1                               | 0.004                                 | \$134                                   | \$90,594            | \$7,025                       |
| 23                   | Focused water audits for hotels/motels                   | 2.5                              | 2.9                                | 0.003                                 | \$787                                   | \$40,071            | \$15,938                      |
| 24                   | WAVE Program (US EPA) for hotels                         | 13.4                             | 1.1                                | 0.000                                 | \$145                                   | \$4,150             | \$196                         |
| 25                   | Hotel retrofit (w/financial assistance)                  | 2.7                              | 2.7                                | 0.002                                 | \$730                                   | \$22,416            | \$7,888                       |
| 26                   | Award program for water savings by businesses            |                                  |                                    |                                       |   |                     |                               |
| 27                   | Replace inefficient water using equipment                | 0.4                              | 0.1                                | 0.001                                 | \$5,221                                 | (\$26,244)          | \$23,949                      |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 9.8                              | 9.8                                | 0.000                                 | \$191                                   | \$1,668             | \$59                          |
| 29                   | Financial incentives for complying with water use budget | 25.0                             | 8.9                                | 0.017                                 | \$78                                    | \$368,257           | \$9,158                       |
| 30                   | Financial incentives for irrigation upgrades             | 9.6                              | 5.3                                | 0.002                                 | \$193                                   | \$30,924            | \$1,200                       |
| 31                   | Require dedicated irrigation meters for new accounts     |                                  |                                    |                                       |   |                     |                               |
| 32                   | Water Utility / City Department water reduction goals    | 17.7                             | 3.9                                | 0.011                                 | \$110                                   | \$224,991           | \$7,679                       |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
Coastside County Water District  
June 11, 2004**

| Description of Conservation Activity                      | Corresponding Measure Number |
|---|------------------------------|
| Residential Water Surveys (CA BMP 1)                      | 1                            |
| Large Landscape Conservation Audits (CA BMP 5)            | 3                            |
| Water Budgets (CA BMP 5)                                  | 4                            |
| Clothes Washer Rebate (CA BMP 6)                          | 5                            |
| Public Information Program (CA BMP 7)                     | 6                            |
| ULF Toilet and Urinal Rebates (CA BMP 9)                  | 8                            |
| Residential ULF Toilet Rebates (CA BMP 14)                | 9                            |
| Financial Incentives for Complying with Water Use Budget  | 29                           |
| Conservation Pricing (CA BMP 11)                          | None <sup>1</sup>            |
| System Water Audits, Leak Detection and Repair (CA BMP 3) | None <sup>1</sup>            |
| Metering with Commodity Rates (CA BMP 4)                  | None <sup>1</sup>            |
| Conservation Coordinator (CA BMP 12)                      | None <sup>1</sup>            |
| Water Waste Prohibition (CA BMP 13)                       | None <sup>1</sup>            |

<sup>1</sup> Measure not evaluated in model.

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Coastside County Water District  
June 11, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            | X         | X         | X         |                |
| Residential Retrofit  | 2                            |           |           |           | X              |
| Large Landscape Conservation Audits   | 3                            | X         | X         | X         |                |
| Water Budgets   | 4                            | X         | X         | X         |                |
| Clothes Washer Rebate   | 5                            | X         | X         | X         |                |
| Public Information Program  | 6                            | X         | X         | X         |                |
| Commercial Water Audits   | 7                            |           |           |           | X              |
| ULF Toilet and Urinal Rebates   | 8                            | X         | X         | X         |                |
| Residential ULF Toilet Rebate   | 9                            | X         | X         | X         |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | X              |
| Home Leak Detection and Repair  | 11                           |           |           |           | X              |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           | X         |                |
| ET Controller Rebates   | 13                           |           |           |           | X              |
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           | X         | X         |                |

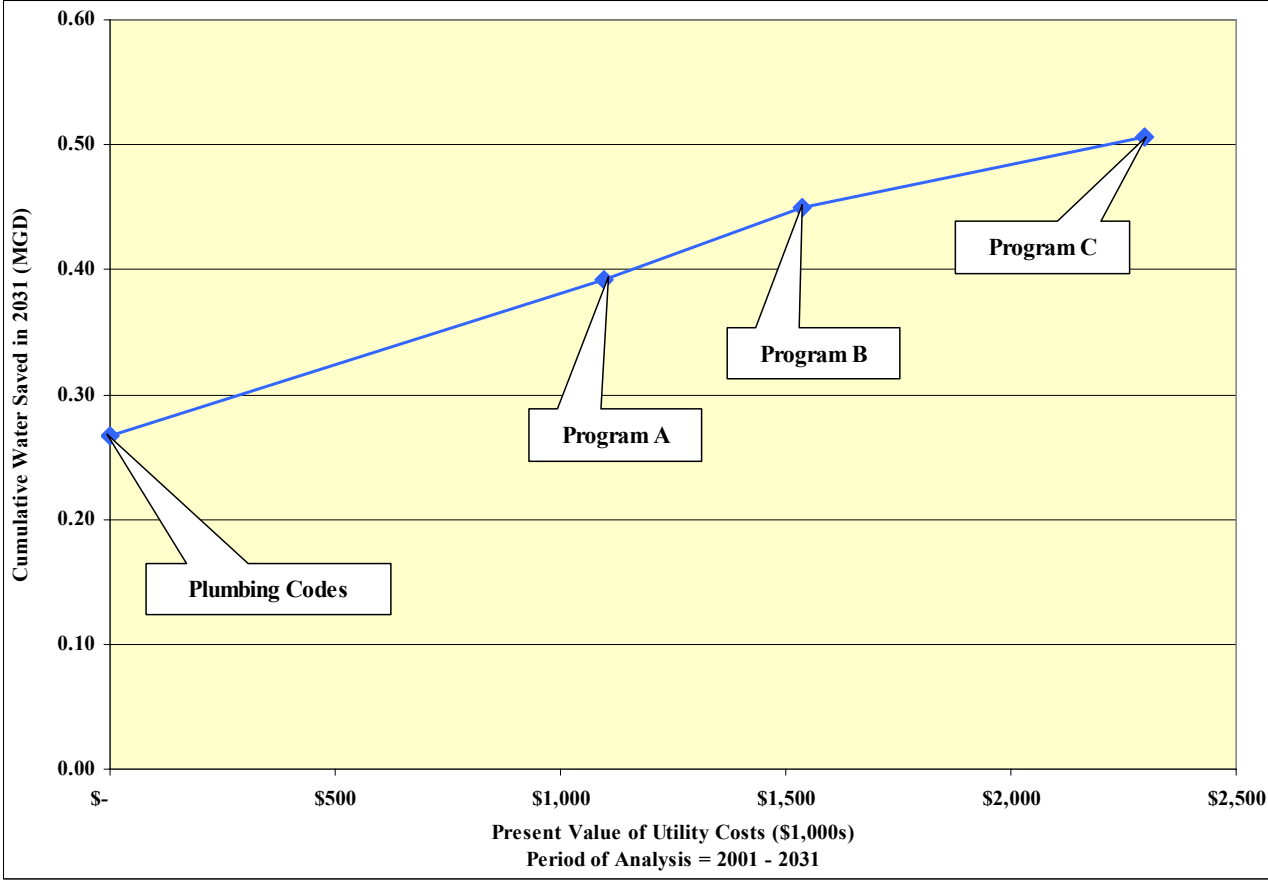
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Coastside County Water District  
June 11, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Homeowner irrigation classes  | 15                           |           |           | X         |                |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | X              |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | X              |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           | X         |                |
| Rebate efficient clothes washers  | 20                           |           |           |           | X              |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           | X         | X         |                |
| Restaurant low flow spray rinse nozzles   | 22                           |           | X         | X         |                |
| Focused water audits for hotels/motels  | 23                           |           |           | X         |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | X              |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | X              |
| Award program for water savings by businesses   | 26                           |           |           |           | X              |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |
| Require 0.5 gal/flush urinals in new buildings  | 28                           |           |           |           | X              |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Coastside County Water District  
June 11, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Financial incentives for complying with water use budget | 29                           | X         | X         | X         |                |
| Financial incentives for irrigation upgrades             | 30                           |           |           | X         |                |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | X              |
| Water Utility / City Department water reduction goals    | 32                           |           | X         | X         |                |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>8</b>  | <b>12</b> | <b>17</b> | <b>15</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
Coastside County Water District  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$1,098          | \$1,537          | \$2,297          |
| <b>Cumulative Water Saved (MGD)</b>      | 0.27                 | 0.39             | 0.45             | 0.51             |

**Appendix D8**  
**Daly City, City of**

**FINAL Results of Conservation Measures Evaluation  
City of Daly City  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.1                              | 1.6                                | 0.035                                 | \$1,754                                 | \$93,751            | \$178,914                     |
| 2                    | Residential Retrofit  | 3.5                              | 9.6                                | 0.003                                 | \$591                                   | \$48,828            | \$19,727                      |
| 3                    | Large Landscape Conservation  | 1.1                              | 0.9                                | 0.007                                 | \$1,712                                 | \$15,415            | \$37,376                      |
| 4                    | Water Budgets   | 14.5                             | 14.5                               | 0.016                                 | \$138                                   | \$337,265           | \$26,070                      |
| 5                    | Clothes Washer Rebate   | 2.7                              | 2.4                                | 0.016                                 | \$774                                   | \$240,099           | \$149,271                     |
| 6                    | Public Information Program  | 1.3                              | 2.4                                | 0.038                                 | \$1,567                                 | \$220,095           | \$191,781                     |
| 7                    | Commercial Water Audits   | 1.4                              | 1.3                                | 0.018                                 | \$1,390                                 | \$113,546           | \$172,050                     |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 18.6                             | 10.3                               | 0.004                                 | \$112                                   | \$79,931            | \$5,110                       |
| 9                    | Residential ULF Toilet Rebate   | 1.5                              | 0.7                                | 0.131                                 | \$1,362                                 | \$979,069           | \$1,359,245                   |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 11.6                             | 0.9                                | 0.146                                 | \$176                                   | \$3,077,912         | \$219,907                     |
| 11                   | Home Leak Detection and Repair  | 0.6                              | 0.6                                | 0.009                                 | \$4,041                                 | (\$157,220)         | \$239,123                     |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 2.0                              | 1.4                                | 0.124                                 | \$980                                   | \$1,399,713         | \$799,582                     |
| 13                   | ET Controller Rebates   | 0.5                              | 0.3                                | 0.010                                 | \$3,639                                 | (\$196,219)         | \$129,690                     |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 4.4                              | 0.3                                | 0.013                                 | \$413                                   | \$211,812           | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 2.0                              | 0.1                                | 0.006                                 | \$890                                   | \$64,685            | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 0.4                              | 0.0                                | 0.000                                 | \$5,156                                 | (\$8,804)           | \$5,640                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 3.8                              | 8.2                                | 0.006                                 | \$535                                   | \$104,956           | \$39,375                      |
| 18                   | Incentives for retrofitting sub-metering  | 1.1                              | 0.4                                | 0.001                                 | \$1,835                                 | \$1,933             | \$16,357                      |
| 19                   | Require sub-metering multifamily units  | 2.1                              | 0.6                                | 0.009                                 | \$899                                   | \$96,077            | \$35,366                      |
| 20                   | Rebate efficient clothes washers  | 10.0                             | 19.4                               | 0.019                                 | \$210                                   | \$413,839           | \$48,988                      |
| 21                   | Enforce landscape requirements for new landscaping systems (turf                            | 8.7                              | 1.2                                | 0.007                                 | \$221                                   | \$135,393           | \$5,770                       |



**FINAL Results of Conservation Measures Evaluation  
City of Daly City  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
|                      | limitations / regulations)                               |                                  |                                    |                                       |   |                     |                               |
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 41.1                               | 0.022                                 | \$134                                   | \$467,064           | \$36,218                      |
| 23                   | Focused water audits for hotels/motels                   | 3.8                              | 4.5                                | 0.004                                 | \$515                                   | \$71,177            | \$15,000                      |
| 24                   | WAVE Program (US EPA) for hotels                         | 20.6                             | 1.6                                | 0.000                                 | \$95                                    | \$6,137             | \$184                         |
| 25                   | Hotel retrofit (w/financial assistance)                  | 4.6                              | 4.7                                | 0.002                                 | \$421                                   | \$40,434            | \$6,550                       |
| 26                   | Award program for water savings by businesses            |                                  |                                    |                                       |   |                     |                               |
| 27                   | Replace inefficient water using equipment                | 0.5                              | 0.1                                | 0.002                                 | \$4,229                                 | (\$48,292)          | \$51,307                      |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 19.4                             | 19.4                               | 0.000                                 | \$99                                    | \$66                | \$1                           |
| 29                   | Financial incentives for complying with water use budget | 5.8                              | 2.1                                | 0.009                                 | \$339                                   | \$170,204           | \$23,472                      |
| 30                   | Financial incentives for irrigation upgrades             | 3.9                              | 2.2                                | 0.001                                 | \$499                                   | \$16,634            | \$2,002                       |
| 31                   | Require dedicated irrigation meters for new accounts     |                                  |                                    |                                       |   |                     |                               |
| 32                   | Water Utility / City Department water reduction goals    | 6.1                              | 1.4                                | 0.008                                 | \$317                                   | \$146,075           | \$16,485                      |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
City of Daly City  
July 13, 2004**

| <b>Description of Conservation Activity</b>               | <b>Corresponding Measure Number</b> |
|---|-------------------------------------|
| Residential Retrofit (CA BMP 2)                           | 2                                   |
| Large Landscape Conservation Audits (CA BMP 5)            | 3                                   |
| Clothes Washer Rebate (CA BMP 6)                          | 5                                   |
| Public Information Program (CA BMP 7)                     | 6                                   |
| Commercial Water Audits (CA BMP 9)                        | 7                                   |
| System Water Audits, Leak Detection and Repair (CA BMP 3) | Other                               |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Daly City  
July 13, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            |           |           | X         |                |
| Residential Retrofit  | 2                            | X         | X         | X         |                |
| Large Landscape Conservation Audits   | 3                            | X         | X         | X         |                |
| Water Budgets   | 4                            |           | X         | X         |                |
| Clothes Washer Rebate   | 5                            | X         | X         | X         |                |
| Public Information Program  | 6                            | X         | X         | X         |                |
| Commercial Water Audits   | 7                            | X         | X         | X         |                |
| ULF Toilet and Urinal Rebates   | 8                            |           | X         | X         |                |
| Residential ULF Toilet Rebate   | 9                            |           | X         | X         |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | X              |
| Home Leak Detection and Repair  | 11                           |           |           |           | X              |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           | X         | X         |                |
| ET Controller Rebates   | 13                           |           |           |           | X              |
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           | X         | X         |                |

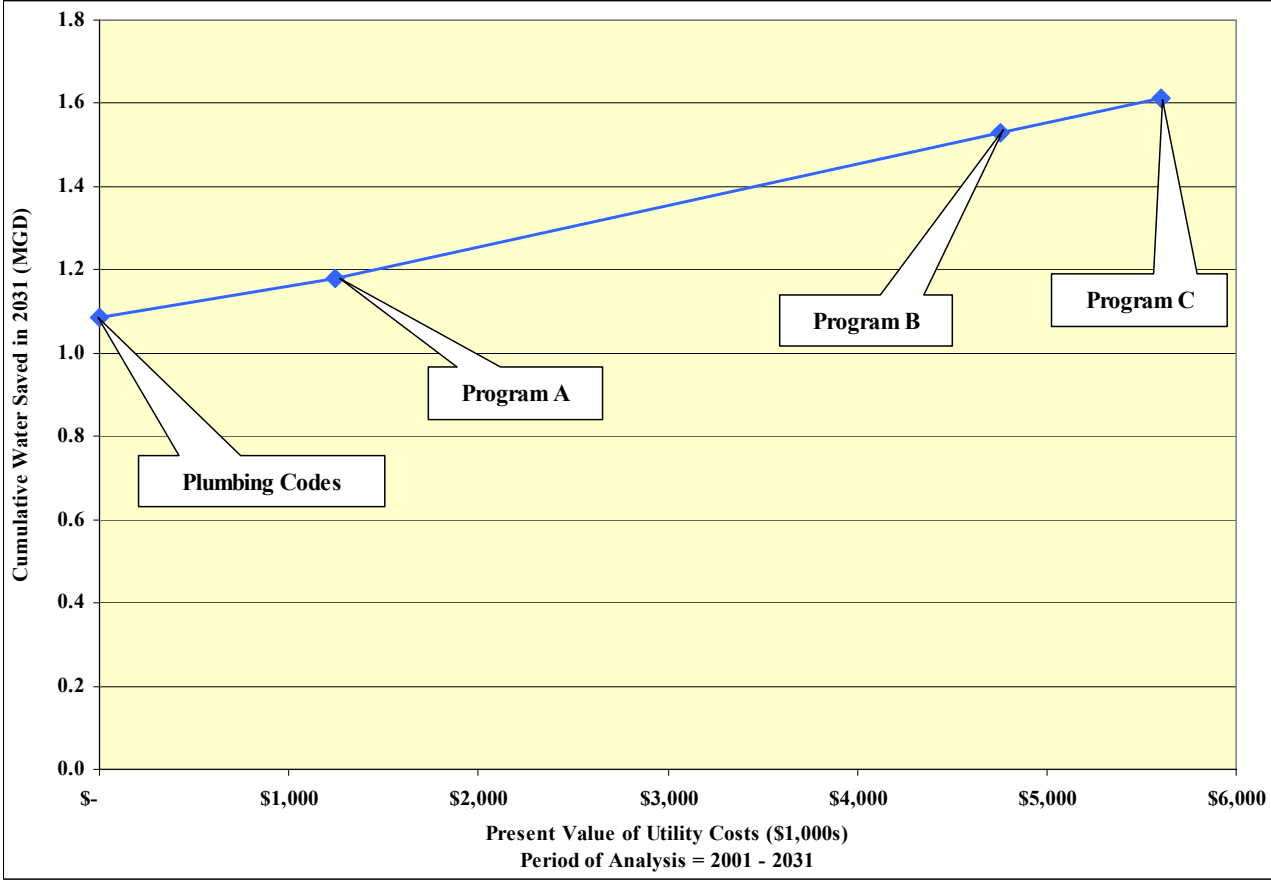
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Daly City  
July 13, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Homeowner irrigation classes  | 15                           |           |           | X         |                |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | X              |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | X              |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           | X         |                |
| Rebate efficient clothes washers  | 20                           |           | X         | X         |                |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           | X         |                |
| Restaurant low flow spray rinse nozzles   | 22                           |           | X         | X         |                |
| Focused water audits for hotels/motels  | 23                           |           |           | X         |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | X              |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           | X         |                |
| Award program for water savings by businesses   | 26                           |           |           |           | X              |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Daly City  
July 13, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           |           | <b>X</b>       |
| Financial incentives for complying with water use budget | 29                           |           | <b>X</b>  | <b>X</b>  |                |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | <b>X</b>       |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | <b>X</b>       |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>5</b>  | <b>13</b> | <b>19</b> | <b>13</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
City of Daly City  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$1,242          | \$4,759          | \$5,604          |
| <b>Cumulative Water Saved (MGD)</b>      | 1.1                  | 1.2              | 1.5              | 1.6              |

**Appendix D9**  
**East Palo Alto, City of**

**FINAL Results of Conservation Measures Evaluation  
Cal Am Water/East Palo Alto  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.6                              | 2.3                                | 0.008                                 | \$1,250                                 | \$64,682            | \$28,626                      |
| 2                    | Residential Retrofit  | 4.0                              | 10.8                               | 0.005                                 | \$522                                   | \$96,422            | \$32,704                      |
| 3                    | Large Landscape Conservation  | 5.0                              | 4.2                                | 0.007                                 | \$361                                   | \$108,531           | \$7,768                       |
| 4                    | Water Budgets   |                                  |                                    |                                       |   |                     |                               |
| 5                    | Clothes Washer Rebate   | 3.3                              | 2.9                                | 0.004                                 | \$637                                   | \$66,972            | \$31,066                      |
| 6                    | Public Information Program  | 1.6                              | 3.0                                | 0.009                                 | \$1,258                                 | \$85,995            | \$35,650                      |
| 7                    | Commercial Water Audits   | 2.2                              | 2.3                                | 0.005                                 | \$890                                   | \$58,864            | \$30,598                      |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 15.9                             | 8.8                                | 0.000                                 | \$132                                   | \$10,686            | \$807                         |
| 9                    | Residential ULF Toilet Rebate   | 1.9                              | 0.9                                | 0.046                                 | \$1,070                                 | \$531,583           | \$521,149                     |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 13.3                             | 1.0                                | 0.054                                 | \$157                                   | \$1,175,068         | \$84,308                      |
| 11                   | Home Leak Detection and Repair  | 0.9                              | 0.9                                | 0.005                                 | \$2,904                                 | (\$20,411)          | \$86,782                      |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 3.3                              | 2.3                                | 0.039                                 | \$608                                   | \$609,817           | \$154,491                     |
| 13                   | ET Controller Rebates   | 0.7                              | 0.5                                | 0.003                                 | \$2,474                                 | (\$20,156)          | \$22,706                      |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 2.8                              | 0.3                                | 0.008                                 | \$664                                   | \$114,410           | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 1.5                              | 0.1                                | 0.004                                 | \$1,248                                 | \$30,466            | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 0.3                              | 0.0                                | 0.000                                 | \$5,710                                 | (\$5,956)           | \$2,262                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 3.7                              | 8.1                                | 0.001                                 | \$546                                   | \$20,409            | \$7,875                       |
| 18                   | Incentives for retrofitting sub-metering  | 3.2                              | 1.1                                | 0.002                                 | \$617                                   | \$24,018            | \$6,277                       |
| 19                   | Require sub-metering multifamily units  | 5.2                              | 1.5                                | 0.005                                 | \$354                                   | \$90,296            | \$5,622                       |
| 20                   | Rebate efficient clothes washers  | 10.9                             | 21.2                               | 0.002                                 | \$193                                   | \$34,770            | \$3,738                       |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 11.8                             | 1.7                                | 0.013                                 | \$148                                   | \$238,188           | \$2,821                       |



**FINAL Results of Conservation Measures Evaluation  
Cal Am Water/East Palo Alto  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 41.1                               | 0.002                                 | \$134                                   | \$32,211            | \$2,498                       |
| 23                   | Focused water audits for hotels/motels                   |                                  |                                    |                                       |   |                     |                               |
| 24                   | WAVE Program (US EPA) for hotels                         |                                  |                                    |                                       |   |                     |                               |
| 25                   | Hotel retrofit (w/financial assistance)                  |                                  |                                    |                                       |   |                     |                               |
| 26                   | Award program for water savings by businesses            |                                  |                                    |                                       |   |                     |                               |
| 27                   | Replace inefficient water using equipment                | 0.8                              | 0.1                                | 0.001                                 | \$2,505                                 | (\$7,108)           | \$15,916                      |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 5.5                              | 5.5                                | 0.001                                 | \$323                                   | \$11,644            | \$303                         |
| 29                   | Financial incentives for complying with water use budget |                                  |                                    |                                       |   |                     |                               |
| 30                   | Financial incentives for irrigation upgrades             | 1.9                              | 1.1                                | 0.002                                 | \$914                                   | \$18,757            | \$2,838                       |
| 31                   | Require dedicated irrigation meters for new accounts     | 7.7                              | 1.0                                | 0.011                                 | \$230                                   | \$188,896           | \$754                         |
| 32                   | Water Utility / City Department water reduction goals    | 7.9                              | 1.8                                | 0.003                                 | \$246                                   | \$49,076            | \$4,074                       |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
East Palo Alto-Cal Am Water  
July 19, 2004**

| <b>Description of Conservation Activity</b> | <b>Corresponding Measure Number</b> |
|---|-------------------------------------|
| Public Information Program                  | 6                                   |

**FINAL Summary of Options Package Programs  
East Palo Alto – Cal Am Water**

| <b>Description of Conservation Activity</b>   | <b>Corresponding Measure Number</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> | <b>Not Attractive</b> |
|---|-------------------------------------|------------------|------------------|------------------|-----------------------|
| Residential Water Surveys   | 1                                   |                  |                  | X                |                       |
| Residential Retrofit  | 2                                   |                  | X                | X                |                       |
| Large Landscape Conservation Audits   | 3                                   |                  |                  | X                |                       |
| Water Budgets   | 4                                   |                  |                  |                  | X                     |
| Clothes Washer Rebate   | 5                                   |                  | X                | X                |                       |
| Public Information Program  | 6                                   | X                | X                | X                |                       |
| Commercial Water Audits   | 7                                   |                  |                  | X                |                       |
| ULF Toilet and Urinal Rebates   | 8                                   |                  |                  |                  | X                     |
| Residential ULF Toilet Rebate   | 9                                   |                  | X                | X                |                       |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                                  |                  |                  |                  | X                     |
| Home Leak Detection and Repair  | 11                                  |                  |                  |                  | X                     |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                                  |                  |                  | X                |                       |
| ET Controller Rebates   | 13                                  |                  |                  |                  | X                     |
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                                  |                  | X                | X                |                       |

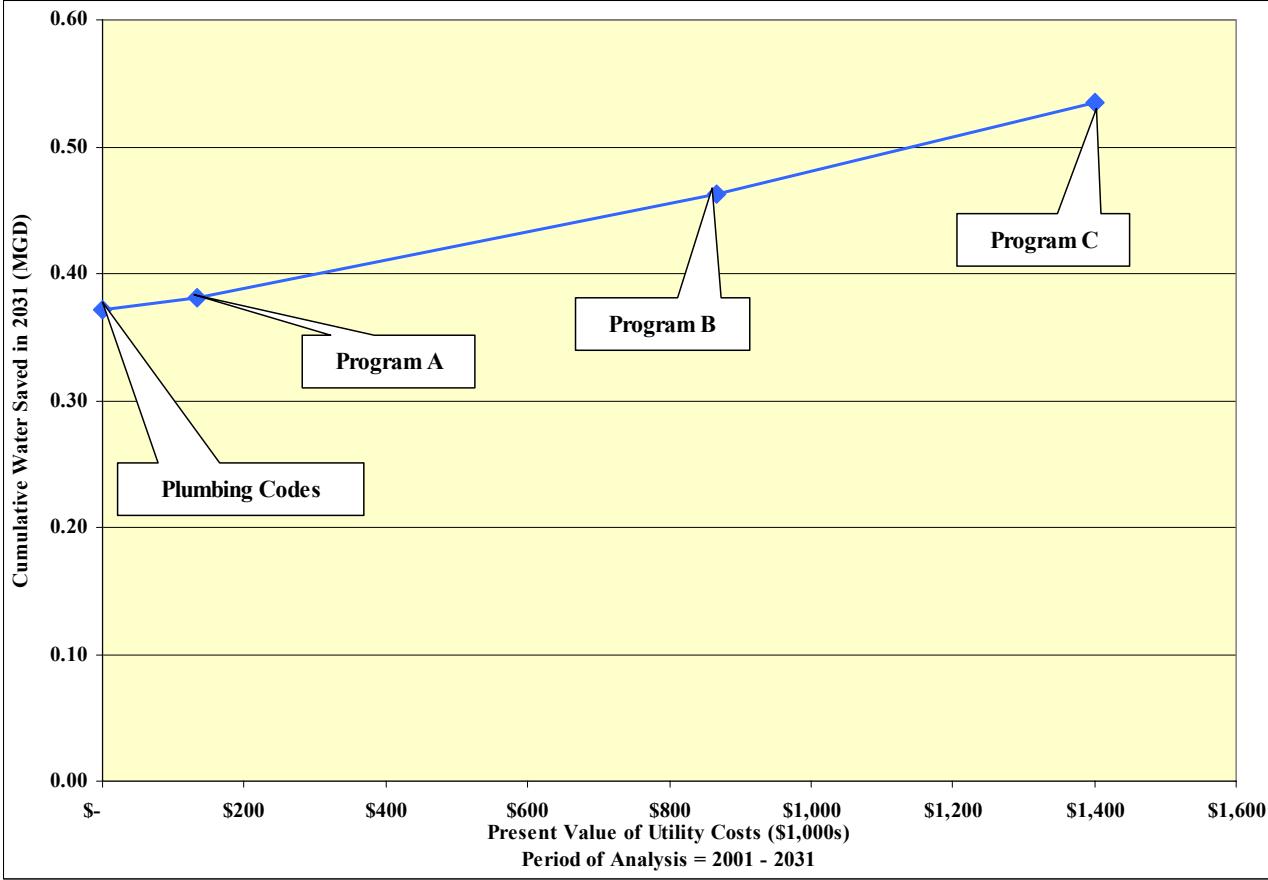
**FINAL Summary of Options Package Programs  
East Palo Alto – Cal Am Water**

| <b>Description of Conservation Activity</b>   | <b>Corresponding Measure Number</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> | <b>Not Attractive</b> |
|---|-------------------------------------|------------------|------------------|------------------|-----------------------|
| Homeowner irrigation classes  | 15                                  |                  |                  | X                |                       |
| Promote water efficient plantings at new homes  | 16                                  |                  |                  |                  | X                     |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                                  |                  |                  | X                |                       |
| Incentives for retrofitting sub-metering  | 18                                  |                  |                  | X                |                       |
| Require sub-metering multifamily units  | 19                                  |                  | X                | X                |                       |
| Rebate efficient clothes washers  | 20                                  |                  | X                | X                |                       |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                                  |                  | X                | X                |                       |
| Restaurant low flow spray rinse nozzles   | 22                                  |                  |                  |                  | X                     |
| Focused water audits for hotels/motels  | 23                                  |                  |                  |                  | X                     |
| WAVE Program (US EPA) for hotels  | 24                                  |                  |                  |                  | X                     |
| Hotel retrofit (w/financial assistance)   | 25                                  |                  |                  |                  | X                     |
| Award program for water savings by businesses   | 26                                  |                  |                  |                  | X                     |
| Replace inefficient water using equipment   | 27                                  |                  |                  |                  | X                     |
| Require 0.5 gal/flush urinals in new buildings  | 28                                  |                  | X                | X                |                       |
| Financial incentives for complying with water use budget                                    | 29                                  |                  |                  |                  | X                     |

**FINAL Summary of Options Package Programs  
East Palo Alto – Cal Am Water**

| <b>Description of Conservation Activity</b>           | <b>Corresponding Measure Number</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> | <b>Not Attractive</b> |
|---|-------------------------------------|------------------|------------------|------------------|-----------------------|
| Financial incentives for irrigation upgrades          | 30                                  |                  |                  |                  | <b>X</b>              |
| Require dedicated irrigation meters for new accounts  | 31                                  |                  |                  | <b>X</b>         |                       |
| Water Utility / City Department water reduction goals | 32                                  |                  | <b>X</b>         | <b>X</b>         |                       |
| <b>TOTAL NUMBER OF MEASURES</b>                       |                                     | <b>1</b>         | <b>10</b>        | <b>18</b>        | <b>14</b>             |

**FINAL Present Value of Utility Costs Versus Water Saved  
 Cal Am Water/East Palo Alto  
 August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$134            | \$866            | \$1,402          |
| <b>Cumulative Water Saved (MGD)</b>      | 0.37                 | 0.38             | 0.46             | 0.53             |

**Appendix D10**  
**Esterro Municipal. Improvement District/Foster City**

**FINAL Results of Conservation Measures Evaluation  
Estero Municipal Improvement District  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.5                              | 1.8                                | 0.018                                 | \$1,307                                 | \$138,935           | \$69,296                      |
| 2                    | Residential Retrofit  |                                  |                                    |                                       |   |                     |                               |
| 3                    | Large Landscape Conservation  | 2.6                              | 2.2                                | 0.003                                 | \$738                                   | \$37,081            | \$6,594                       |
| 4                    | Water Budgets   | 39.5                             | 39.5                               | 0.182                                 | \$51                                    | \$4,009,725         | \$104,797                     |
| 5                    | Clothes Washer Rebate   | 2.4                              | 2.1                                | 0.006                                 | \$882                                   | \$78,884            | \$60,988                      |
| 6                    | Public Information Program  | 1.8                              | 2.9                                | 0.014                                 | \$1,124                                 | \$146,727           | \$48,941                      |
| 7                    | Commercial Water Audits   | 2.3                              | 1.9                                | 0.008                                 | \$857                                   | \$105,464           | \$50,230                      |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 43.2                             | 24.0                               | 0.003                                 | \$48                                    | \$60,384            | \$1,613                       |
| 9                    | Residential ULF Toilet Rebate   | 1.2                              | 0.6                                | 0.033                                 | \$1,680                                 | \$148,482           | \$615,924                     |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 9.0                              | 0.8                                | 0.032                                 | \$234                                   | \$665,863           | \$90,962                      |
| 11                   | Home Leak Detection and Repair  | 0.8                              | 0.8                                | 0.003                                 | \$3,239                                 | (\$24,134)          | \$60,967                      |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 2.3                              | 1.6                                | 0.048                                 | \$863                                   | \$601,247           | \$269,228                     |
| 13                   | ET Controller Rebates   | 2.8                              | 1.9                                | 0.020                                 | \$662                                   | \$261,099           | \$47,659                      |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 7.7                              | 1.0                                | 0.044                                 | \$250                                   | \$828,583           | \$33,000                      |
| 15                   | Homeowner irrigation classes  | 5.5                              | 0.4                                | 0.016                                 | \$338                                   | \$276,837           | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 1.5                              | 0.2                                | 0.000                                 | \$1,220                                 | \$3,024             | \$2,059                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              |                                  |                                    |                                       |   |                     |                               |
| 18                   | Incentives for retrofitting sub-metering  | 0.8                              | 0.3                                | 0.001                                 | \$2,417                                 | (\$2,702)           | \$8,237                       |
| 19                   | Require sub-metering multifamily units  | 1.4                              | 0.4                                | 0.010                                 | \$1,283                                 | \$62,544            | \$48,664                      |
| 20                   | Rebate efficient clothes washers  | 9.3                              | 18.1                               | 0.015                                 | \$225                                   | \$307,292           | \$39,325                      |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 17.9                             | 2.5                                | 0.022                                 | \$100                                   | \$414,054           | \$7,544                       |



**FINAL Results of Conservation Measures Evaluation  
 Estero Municipal Improvement District  
 August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 41.1                               | 0.006                                 | \$134                                   | \$126,631           | \$9,819                       |
| 23                   | Focused water audits for hotels/motels                   | 48.2                             | 57.1                               | 0.016                                 | \$40                                    | \$344,404           | \$4,613                       |
| 24                   | WAVE Program (US EPA) for hotels                         | 149.5                            | 11.9                               | 0.001                                 | \$13                                    | \$23,290            | \$92                          |
| 25                   | Hotel retrofit (w/financial assistance)                  | 5.4                              | 5.5                                | 0.009                                 | \$359                                   | \$152,960           | \$20,300                      |
| 26                   | Award program for water savings by businesses            |                                  |                                    |                                       |   |                     |                               |
| 27                   | Replace inefficient water using equipment                | 0.6                              | 0.1                                | 0.001                                 | \$3,441                                 | (\$12,768)          | \$16,926                      |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 35.0                             | 35.0                               | 0.000                                 | \$52                                    | \$8,922             | \$59                          |
| 29                   | Financial incentives for complying with water use budget | 13.5                             | 4.8                                | 0.105                                 | \$143                                   | \$2,126,284         | \$97,658                      |
| 30                   | Financial incentives for irrigation upgrades             | 5.2                              | 2.9                                | 0.002                                 | \$347                                   | \$24,718            | \$1,431                       |
| 31                   | Require dedicated irrigation meters for new accounts     | 6.1                              | 0.7                                | 0.001                                 | \$296                                   | \$18,338            | \$232                         |
| 32                   | Water Utility / City Department water reduction goals    | 4.5                              | 1.0                                | 0.011                                 | \$436                                   | \$184,876           | \$30,906                      |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
 Estero Municipal Improvement District  
 June 24, 2004**

| Description of Conservation Activity                      | Corresponding Measure Number |
|---|------------------------------|
| Large Landscape Conservation Audits (CA BMP 5)            | 3                            |
| Water Budgets (CA BMP 5)                                  | 4                            |
| Clothes Washer Rebate (CA BMP 6)                          | 5                            |
| Public Information Program (CA BMP 7)                     | 6                            |
| Residential ULF Toilet Rebates (CA BMP 14)                | 9                            |
| Rebates for 6/3 Dual Flush or 4 Liter Toilets             | 12                           |
| Financial Incentives for Complying with Water Use Budget  | 29                           |
| System Water Audits, Leak Detection and Repair (CA BMP 3) | None <sup>1</sup>            |
| Metering with Commodity Rates (CA BMP 4)                  | None <sup>1</sup>            |
| Conservation Coordinator (CA BMP 12)                      | None <sup>1</sup>            |
| Water Waste Prohibition (CA BMP 13)                       | None <sup>1</sup>            |

<sup>1</sup>Measure not evaluated in model.

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
 Estero Municipal Improvement District  
 June 24, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            |           |           | X         |                |
| Residential Retrofit  | 2                            |           |           |           | X              |
| Large Landscape Conservation Audits   | 3                            | X         | X         | X         |                |
| Water Budgets   | 4                            | X         | X         | X         |                |
| Clothes Washer Rebate   | 5                            | X         | X         | X         |                |
| Public Information Program  | 6                            | X         | X         | X         |                |
| Commercial Water Audits   | 7                            |           |           |           | X              |
| ULF Toilet and Urinal Rebates   | 8                            |           | X         | X         |                |
| Residential ULF Toilet Rebate   | 9                            | X         | X         | X         |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | X              |
| Home Leak Detection and Repair  | 11                           |           |           |           | X              |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           | X         | X         | X         |                |
| ET Controller Rebates   | 13                           |           |           | X         |                |

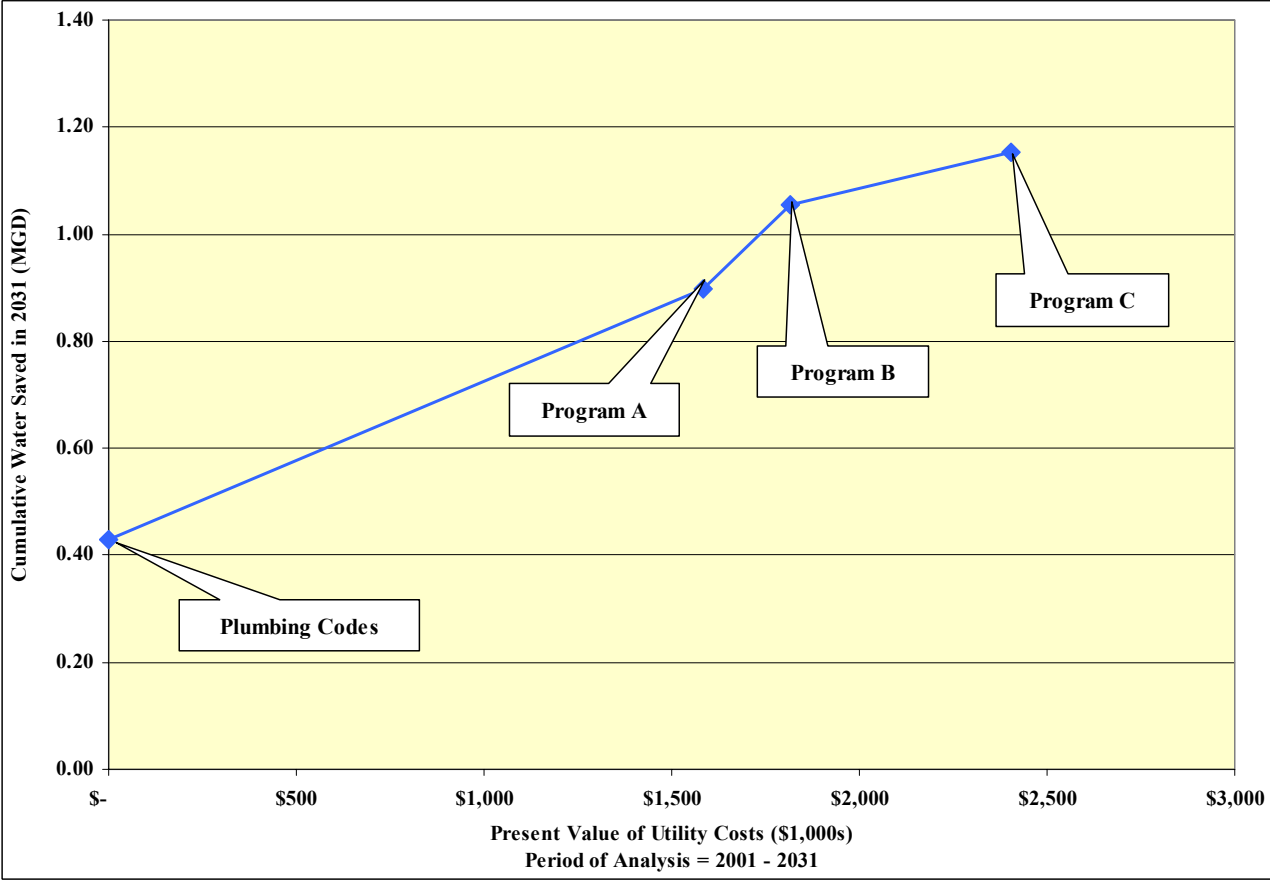
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
 Estero Municipal Improvement District  
 June 24, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           | X         | X         |                |
| Homeowner irrigation classes  | 15                           |           |           | X         |                |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | X              |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | X              |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           | X         |                |
| Rebate efficient clothes washers  | 20                           |           | X         | X         |                |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           | X         | X         |                |
| Restaurant low flow spray rinse nozzles   | 22                           |           |           | X         |                |
| Focused water audits for hotels/motels  | 23                           |           | X         | X         |                |
| WAVE Program (US EPA) for hotels  | 24                           |           | X         | X         |                |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | X              |
| Award program for water savings by businesses   | 26                           |           |           |           | X              |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
 Estero Municipal Improvement District  
 June 24, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           |           | <b>X</b>       |
| Financial incentives for complying with water use budget | 29                           | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | <b>X</b>       |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals    | 32                           |           | <b>X</b>  | <b>X</b>  |                |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>7</b>  | <b>14</b> | <b>19</b> | <b>13</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
 Estero Municipal Improvement District  
 August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$1,585          | \$1,817          | \$2,405          |
| <b>Cumulative Water Saved (MGD)</b>      | 0.43                 | 0.90             | 1.06             | 1.15             |

**Appendix D11**  
**Guadalupe Valley Municipal Improvement District**

**FINAL Results of Conservation Measures Evaluation  
Guadalupe Valley Municipal Improvement District  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 0.5                              | 0.6                                | 0.000                                 | \$4,116                                 | (\$12,520)          | \$3,901                       |
| 2                    | Residential Retrofit  |                                  |                                    |                                       |   |                     |                               |
| 3                    | Large Landscape Conservation  | 0.2                              | 0.2                                | 0.001                                 | \$10,027                                | (\$60,603)          | \$21,231                      |
| 4                    | Water Budgets   | 35.0                             | 35.0                               | 0.039                                 | \$54                                    | \$820,007           | \$12,976                      |
| 5                    | Clothes Washer Rebate   | 1.0                              | 0.9                                | 0.000                                 | \$2,121                                 | (\$21)              | \$2,288                       |
| 6                    | Public Information Program  | 0.6                              | 1.0                                | 0.001                                 | \$3,210                                 | (\$11,075)          | \$5,357                       |
| 7                    | Commercial Water Audits   | 1.1                              | 0.9                                | 0.003                                 | \$1,841                                 | \$3,832             | \$37,870                      |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 10.7                             | 5.9                                | 0.001                                 | \$196                                   | \$10,762            | \$1,251                       |
| 9                    | Residential ULF Toilet Rebate   | 0.6                              | 0.3                                | 0.001                                 | \$3,656                                 | (\$17,788)          | \$24,314                      |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 4.6                              | 0.3                                | 0.001                                 | \$447                                   | \$17,460            | \$3,933                       |
| 11                   | Home Leak Detection and Repair  | 0.3                              | 0.3                                | 0.000                                 | \$8,760                                 | (\$9,038)           | \$6,501                       |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 0.5                              | 0.3                                | 0.001                                 | \$4,065                                 | (\$16,280)          | \$16,253                      |
| 13                   | ET Controller Rebates   | 3.1                              | 2.2                                | 0.003                                 | \$580                                   | \$34,934            | \$4,225                       |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            |                                  |                                    |                                       |   |                     |                               |
| 15                   | Homeowner irrigation classes  | 0.9                              | 0.1                                | 0.001                                 | \$2,185                                 | (\$4,208)           | \$8,250                       |
| 16                   | Promote water efficient plantings at new homes  | 0.3                              | 0.0                                | 0.000                                 | \$6,953                                 | (\$5,205)           | \$1,877                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 3.6                              | 7.8                                | 0.001                                 | \$565                                   | \$13,001            | \$5,250                       |
| 18                   | Incentives for retrofitting sub-metering  |                                  |                                    |                                       |   |                     |                               |
| 19                   | Require sub-metering multifamily units  |                                  |                                    |                                       |   |                     |                               |
| 20                   | Rebate efficient clothes washers  |                                  |                                    |                                       |   |                     |                               |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 55.4                             | 7.8                                | 0.015                                 | \$33                                    | \$310,800           | \$1,524                       |



**FINAL Results of Conservation Measures Evaluation  
Guadalupe Valley Municipal Improvement District  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 41.1                               | 0.001                                 | \$134                                   | \$16,226            | \$1,258                       |
| 23                   | Focused water audits for hotels/motels                   |                                  |                                    |                                       |   |                     |                               |
| 24                   | WAVE Program (US EPA) for hotels                         |                                  |                                    |                                       |   |                     |                               |
| 25                   | Hotel retrofit (w/financial assistance)                  |                                  |                                    |                                       |   |                     |                               |
| 26                   | Award program for water savings by businesses            |                                  |                                    |                                       |   |                     |                               |
| 27                   | Replace inefficient water using equipment                | 0.2                              | 0.0                                | 0.000                                 | \$10,266                                | (\$13,651)          | \$9,678                       |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 8.1                              | 8.1                                | 0.000                                 | \$228                                   | \$3,947             | \$149                         |
| 29                   | Financial incentives for complying with water use budget | 14.4                             | 5.1                                | 0.031                                 | \$130                                   | \$606,886           | \$18,198                      |
| 30                   | Financial incentives for irrigation upgrades             | 8.5                              | 4.7                                | 0.002                                 | \$212                                   | \$41,585            | \$1,495                       |
| 31                   | Require dedicated irrigation meters for new accounts     |                                  |                                    |                                       |   |                     |                               |
| 32                   | Water Utility / City Department water reduction goals    |                                  |                                    |                                       |   |                     |                               |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
Guadalupe Valley Municipal Improvement District  
June 14, 2004**

| <b>Description of Conservation Activity</b> | <b>Corresponding Measure Number</b> |
|---|-------------------------------------|
| Clothes Washer Rebate (CA BMP 6)            | 5                                   |
| Public Information Program (CA BMP 7)       | 6                                   |
| Water Waste Prohibition (CA BMP 13)         | None <sup>1</sup>                   |

<sup>1</sup>Measure not evaluated in model.

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Guadalupe Valley Municipal Improvement District  
August 30, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            |           |           |           | X              |
| Residential Retrofit  | 2                            |           |           |           | X              |
| Large Landscape Conservation Audits   | 3                            |           |           |           | X              |
| Water Budgets   | 4                            |           | X         | X         |                |
| Clothes Washer Rebate   | 5                            | X         |           | X         |                |
| Public Information Program  | 6                            | X         | X         | X         |                |
| Commercial Water Audits   | 7                            |           |           |           | X              |
| ULF Toilet and Urinal Rebates   | 8                            |           |           |           | X              |
| Residential ULF Toilet Rebate   | 9                            |           |           |           | X              |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           | X         |                |
| Home Leak Detection and Repair  | 11                           |           |           |           | X              |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           |           | X              |
| ET Controller Rebates   | 13                           |           |           |           | X              |

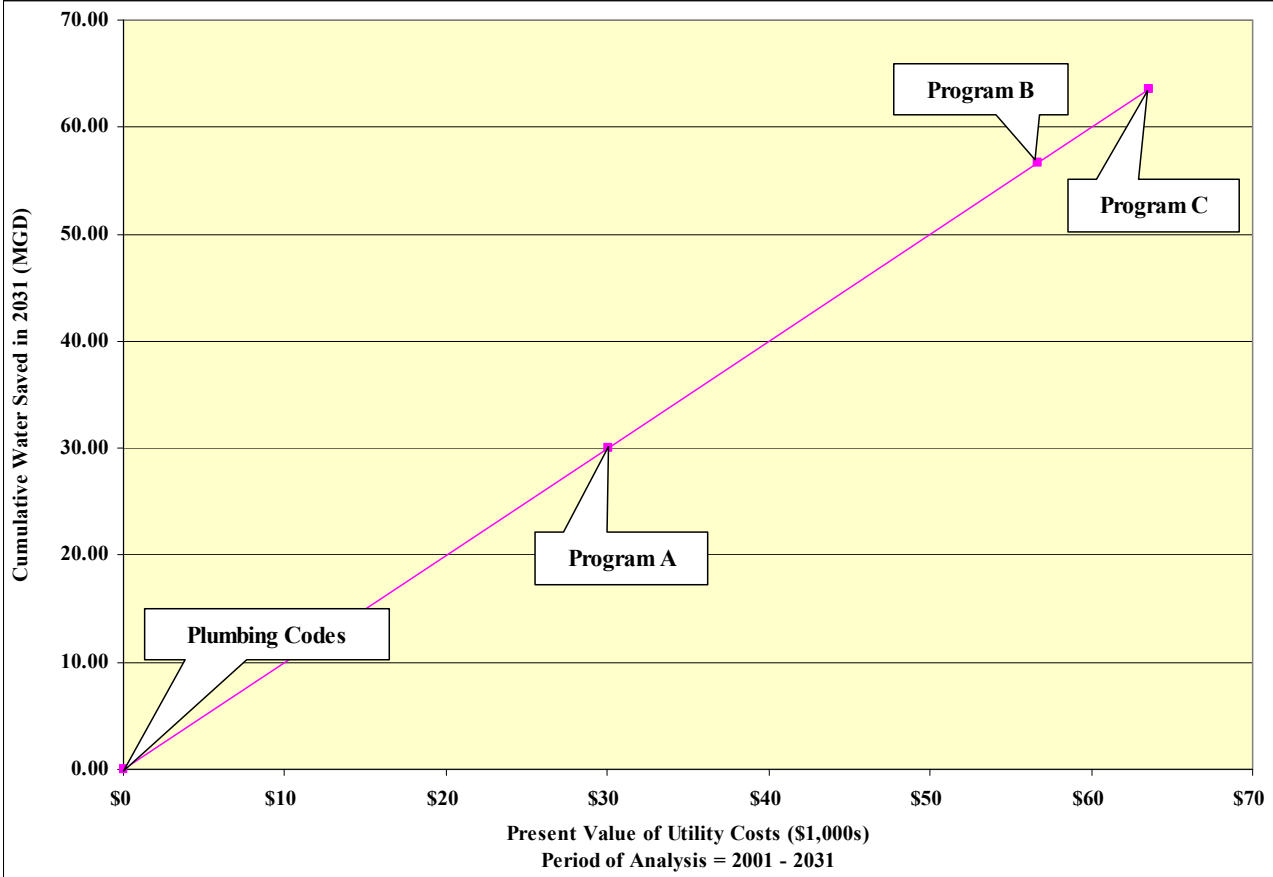
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Guadalupe Valley Municipal Improvement District  
August 30, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           |           |           | <b>X</b>       |
| Homeowner irrigation classes  | 15                           |           |           |           | <b>X</b>       |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | <b>X</b>       |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | <b>X</b>       |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | <b>X</b>       |
| Require sub-metering multifamily units  | 19                           |           |           |           | <b>X</b>       |
| Rebate efficient clothes washers  | 20                           |           |           |           | <b>X</b>       |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           | <b>X</b>  | <b>X</b>  |                |
| Restaurant low flow spray rinse nozzles   | 22                           |           |           |           | <b>X</b>       |
| Focused water audits for hotels/motels  | 23                           |           |           |           | <b>X</b>       |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | <b>X</b>       |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | <b>X</b>       |
| Award program for water savings by businesses   | 26                           |           |           |           | <b>X</b>       |
| Replace inefficient water using equipment   | 27                           |           |           |           | <b>X</b>       |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
 Guadalupe Valley Municipal Improvement District  
 August 30, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           | X         | X         |                |
| Financial incentives for complying with water use budget | 29                           |           |           |           | X              |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | X              |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | X              |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | X              |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>2</b>  | <b>4</b>  | <b>6</b>  | <b>26</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
 Guadalupe Valley Municipal Improvement District  
 August 30, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$30             | \$57             | \$64             |
| <b>Cumulative Water Saved (MGD)</b>      | 0.04                 | 0.04             | 0.14             | 0.14             |

**Appendix D12**  
**Hayward, City of**

**FINAL Results of Conservation Measures Evaluation  
City of Hayward  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.8                              | 2.2                                | 0.074                                 | \$1,086                                 | \$725,519           | \$220,549                     |
| 2                    | Residential Retrofit  | 3.5                              | 9.2                                | 0.035                                 | \$603                                   | \$591,552           | \$247,486                     |
| 3                    | Large Landscape Conservation  | 1.7                              | 1.5                                | 0.055                                 | \$1,108                                 | \$508,018           | \$196,864                     |
| 4                    | Water Budgets   |                                  |                                    |                                       |   |                     |                               |
| 5                    | Clothes Washer Rebate   | 2.6                              | 2.5                                | 0.023                                 | \$790                                   | \$340,997           | \$220,638                     |
| 6                    | Public Information Program  | 1.8                              | 2.8                                | 0.080                                 | \$1,110                                 | \$816,160           | \$269,220                     |
| 7                    | Commercial Water Audits   | 1.5                              | 1.5                                | 0.086                                 | \$1,273                                 | \$651,556           | \$771,750                     |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 20.3                             | 11.3                               | 0.010                                 | \$103                                   | \$221,041           | \$12,863                      |
| 9                    | Residential ULF Toilet Rebate   | 1.2                              | 0.5                                | 0.228                                 | \$1,694                                 | \$821,033           | \$2,792,441                   |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 7.2                              | 0.5                                | 0.297                                 | \$276                                   | \$5,793,369         | \$460,049                     |
| 11                   | Home Leak Detection and Repair  | 0.6                              | 0.6                                | 0.013                                 | \$3,986                                 | (\$217,741)         | \$335,056                     |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 2.8                              | 2.0                                | 0.251                                 | \$707                                   | \$3,584,856         | \$1,160,235                   |
| 13                   | ET Controller Rebates   | 1.5                              | 1.1                                | 0.042                                 | \$1,194                                 | \$300,419           | \$180,676                     |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 14.6                             | 0.8                                | 0.044                                 | \$123                                   | \$839,364           | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 6.6                              | 0.4                                | 0.020                                 | \$270                                   | \$349,182           | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 1.7                              | 0.2                                | 0.012                                 | \$1,090                                 | \$95,674            | \$39,642                      |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 0.0                              | 0.1                                | 0.000                                 | \$65,908                                | (\$100,699)         | \$110,250                     |
| 18                   | Incentives for retrofitting sub-metering  | 3.3                              | 1.1                                | 0.008                                 | \$603                                   | \$118,169           | \$30,431                      |
| 19                   | Require sub-metering multifamily units  | 5.5                              | 1.5                                | 0.016                                 | \$339                                   | \$274,732           | \$21,009                      |
| 20                   | Rebate efficient clothes washers  | 0.9                              | 1.7                                | 0.005                                 | \$2,333                                 | (\$14,429)          | \$150,000                     |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 22.7                             | 3.2                                | 0.032                                 | \$80                                    | \$626,161           | \$8,951                       |



**FINAL Results of Conservation Measures Evaluation  
City of Hayward  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 41.1                               | 0.021                                 | \$134                                   | \$440,892           | \$34,189                      |
| 23                   | Focused water audits for hotels/motels                   | 21.2                             | 13.8                               | 0.022                                 | \$92                                    | \$451,994           | \$13,125                      |
| 24                   | WAVE Program (US EPA) for hotels                         | 115.2                            | 5.1                                | 0.001                                 | \$17                                    | \$31,350            | \$161                         |
| 25                   | Hotel retrofit (w/financial assistance)                  | 7.9                              | 4.4                                | 0.011                                 | \$245                                   | \$221,134           | \$18,688                      |
| 26                   | Award program for water savings by businesses            | 12.6                             | 2.8                                | 0.048                                 | \$144                                   | \$907,124           | \$20,700                      |
| 27                   | Replace inefficient water using equipment                | 1.3                              | 0.2                                | 0.020                                 | \$1,527                                 | \$92,337            | \$198,916                     |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 31.6                             | 31.6                               | 0.010                                 | \$57                                    | \$194,812           | \$1,871                       |
| 29                   | Financial incentives for complying with water use budget |                                  |                                    |                                       |   |                     |                               |
| 30                   | Financial incentives for irrigation upgrades             |                                  |                                    |                                       |   |                     |                               |
| 31                   | Require dedicated irrigation meters for new accounts     | 17.0                             | 2.1                                | 0.022                                 | \$107                                   | \$419,233           | \$2,114                       |
| 32                   | Water Utility / City Department water reduction goals    |                                  |                                    |                                       |   |                     |                               |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
City of Hayward  
June 25, 2004**

| <b>Description of Conservation Activity</b>               | <b>Corresponding Measure Number</b> |
|---|-------------------------------------|
| Residential Retrofit (CA BMP 2)                           | 2                                   |
| Clothes Washer Rebate (CA BMP 6)                          | 5                                   |
| Public Information Program (CA BMP 7)                     | 6                                   |
| Restaurant Low Flow Spray Rinse Nozzles (CA BMP 9)        | 22                                  |
| Conservation Pricing (CA BMP 11)                          | None <sup>1</sup>                   |
| System Water Audits, Leak Detection and Repair (CA BMP 3) | None <sup>1</sup>                   |

<sup>1</sup>Measure not evaluated in model.

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Hayward  
June 25, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            |           |           |           | X              |
| Residential Retrofit  | 2                            | X         | X         | X         |                |
| Large Landscape Conservation Audits   | 3                            |           | X         | X         |                |
| Water Budgets   | 4                            |           |           |           | X              |
| Clothes Washer Rebate   | 5                            | X         | X         | X         |                |
| Public Information Program  | 6                            | X         | X         | X         |                |
| Commercial Water Audits   | 7                            |           | X         | X         |                |
| ULF Toilet and Urinal Rebates   | 8                            |           | X         | X         |                |
| Residential ULF Toilet Rebate   | 9                            |           |           |           | X              |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | X              |
| Home Leak Detection and Repair  | 11                           |           |           |           | X              |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           | X         |                |
| ET Controller Rebates   | 13                           |           | X         | X         |                |
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           | X         | X         |                |

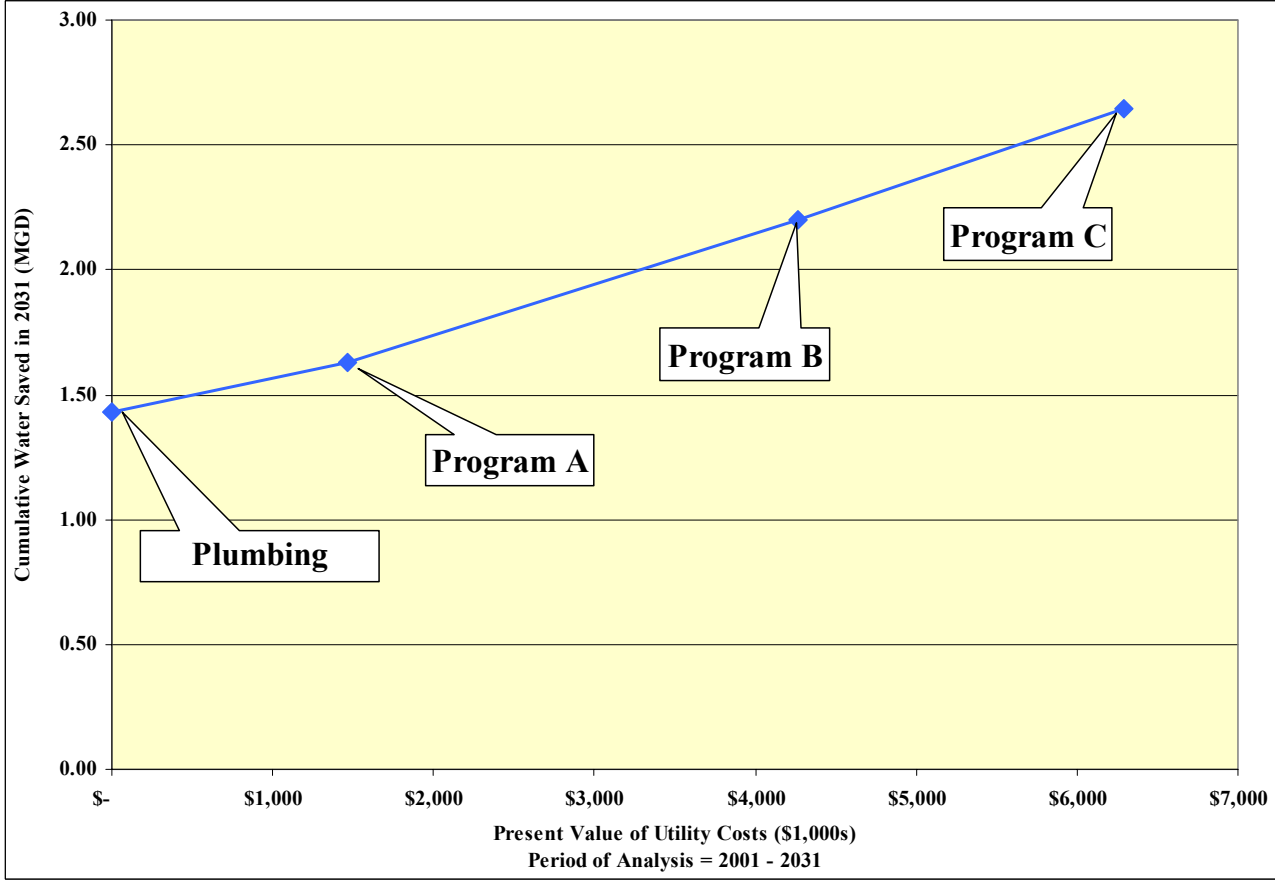
**FINAL Summary of SFPUC Measures Selected in Conservation Programs**  
**City of Hayward**  
**June 25, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Homeowner irrigation classes  | 15                           |           | X         | X         |                |
| Promote water efficient plantings at new homes  | 16                           |           | X         | X         |                |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | X              |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           | X         |                |
| Rebate efficient clothes washers  | 20                           |           |           |           | X              |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           | X         | X         |                |
| Restaurant low flow spray rinse nozzles   | 22                           | X         | X         | X         |                |
| Focused water audits for hotels/motels  | 23                           |           | X         | X         |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | X              |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | X              |
| Award program for water savings by businesses   | 26                           |           |           | X         |                |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |
| Require 0.5 gal/flush urinals in new buildings  | 28                           |           |           | X         |                |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Hayward  
June 25, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Financial incentives for complying with water use budget  | 29                           |           |           |           | X              |
| Financial incentives for irrigation upgrades  | 30                           |           |           |           | X              |
| Require dedicated irrigation meters for new accounts<br>(This measure is intended only for agencies that do not currently have dedicated irrigation meters) | 31                           |           | X         | X         |                |
| Water Utility / City Department water reduction goals   | 32                           |           |           |           | X              |
| <b>TOTAL NUMBER OF MEASURES</b>   |                              | <b>4</b>  | <b>14</b> | <b>18</b> | <b>14</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
City of Hayward  
August 4, 2004**



|  | <b>Plumbing<br/>Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|--------------------------|------------------|------------------|------------------|
| <b>Present Value of Costs<br/>(\$1,000s)</b> | \$0                      | \$1,461          | \$4,268          | \$6,288          |
| <b>Cumulative Water Saved<br/>(MGD)</b>      | 1.43                     | 1.63             | 2.20             | 2.65             |

**Appendix D13**  
**Hillsborough, Town of**

**FINAL Results of Conservation Measures Evaluation  
Town of Hillsborough  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 4.9                              | 4.7                                | 0.027                                 | \$408                                   | \$487,968           | \$32,720                      |
| 2                    | Residential Retrofit  | 2.7                              | 7.4                                | 0.005                                 | \$762                                   | \$72,509            | \$43,163                      |
| 3                    | Large Landscape Conservation  | 1.6                              | 1.3                                | 0.001                                 | \$1,236                                 | \$8,980             | \$4,494                       |
| 4                    | Water Budgets   |                                  |                                    |                                       |   |                     |                               |
| 5                    | Clothes Washer Rebate   | 2.8                              | 2.5                                | 0.002                                 | \$761                                   | \$33,570            | \$20,340                      |
| 6                    | Public Information Program  | 5.2                              | 6.2                                | 0.034                                 | \$398                                   | \$646,084           | \$43,711                      |
| 7                    | Commercial Water Audits   | 3.0                              | 2.4                                | 0.002                                 | \$649                                   | \$27,877            | \$8,547                       |
| 8                    | Commercial ULF Toilet and Urinal Rebates  |                                  |                                    |                                       |   |                     |                               |
| 9                    | Residential ULF Toilet Rebate   | 1.3                              | 0.6                                | 0.016                                 | \$1,548                                 | \$85,386            | \$177,755                     |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10.2                             | 0.8                                | 0.029                                 | \$191                                   | \$569,110           | \$28,757                      |
| 11                   | Home Leak Detection and Repair  | 1.5                              | 1.5                                | 0.005                                 | \$1,640                                 | \$49,259            | \$54,533                      |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 1.8                              | 1.3                                | 0.019                                 | \$1,110                                 | \$184,885           | \$136,334                     |
| 13                   | ET Controller Rebates   | 3.9                              | 2.7                                | 0.014                                 | \$472                                   | \$218,538           | \$24,754                      |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 41.8                             | 4.0                                | 0.121                                 | \$45                                    | \$2,526,250         | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 21.5                             | 1.7                                | 0.063                                 | \$86                                    | \$1,268,442         | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 4.6                              | 0.5                                | 0.001                                 | \$401                                   | \$11,295            | \$1,081                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              |                                  |                                    |                                       |   |                     |                               |
| 18                   | Incentives for retrofitting sub-metering  |                                  |                                    |                                       |   |                     |                               |
| 19                   | Require sub-metering multifamily units  |                                  |                                    |                                       |   |                     |                               |
| 20                   | Rebate efficient clothes washers  |                                  |                                    |                                       |   |                     |                               |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 24.0                             | 3.4                                | 0.000                                 | \$77                                    | \$4,464             | \$63                          |



**FINAL Results of Conservation Measures Evaluation  
Town of Hillsborough  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  |                                  |                                    |                                       |   |                     |                               |
| 23                   | Focused water audits for hotels/motels                   |                                  |                                    |                                       |   |                     |                               |
| 24                   | WAVE Program (US EPA) for hotels                         |                                  |                                    |                                       |   |                     |                               |
| 25                   | Hotel retrofit (w/financial assistance)                  |                                  |                                    |                                       |   |                     |                               |
| 26                   | Award program for water savings by businesses            |                                  |                                    |                                       |   |                     |                               |
| 27                   | Replace inefficient water using equipment                | 0.5                              | 0.1                                | 0.000                                 | \$3,916                                 | (\$976)             | \$1,122                       |
| 28                   | Require 0.5 gal/flush urinals in new buildings           |                                  |                                    |                                       |   |                     |                               |
| 29                   | Financial incentives for complying with water use budget |                                  |                                    |                                       |   |                     |                               |
| 30                   | Financial incentives for irrigation upgrades             | 3.2                              | 1.8                                | 0.000                                 | \$585                                   | \$228               | \$34                          |
| 31                   | Require dedicated irrigation meters for new accounts     | 12.9                             | 1.7                                | 0.000                                 | \$143                                   | \$3,086             | \$17                          |
| 32                   | Water Utility / City Department water reduction goals    |                                  |                                    |                                       |   |                     |                               |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
Town of Hillsborough  
June 15, 2004**

| <b>Description of Conservation Activity</b> | <b>Corresponding Measure Number</b> |
|---|-------------------------------------|
| Clothes Washer Rebate (CA BMP 6)            | 5                                   |
| Public Information Program (CA BMP 7)       | 6                                   |
| Residential ULF Toilet Rebates (CA BMP 14)  | 9                                   |
| Conservation Pricing (CA BMP 11)            | None <sup>1</sup>                   |

<sup>1</sup>Measure not evaluated in model.

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Town of Hillsborough  
June 15, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            |           | X         | X         |                |
| Residential Retrofit  | 2                            |           |           | X         |                |
| Large Landscape Conservation Audits   | 3                            |           |           |           | X              |
| Water Budgets   | 4                            |           |           |           | X              |
| Clothes Washer Rebate   | 5                            | X         | X         | X         |                |
| Public Information Program  | 6                            | X         | X         | X         |                |
| Commercial Water Audits   | 7                            |           |           |           | X              |
| ULF Toilet and Urinal Rebates   | 8                            |           |           |           | X              |
| Residential ULF Toilet Rebate   | 9                            | X         | X         | X         |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | X              |
| Home Leak Detection and Repair  | 11                           |           |           |           | X              |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           | X         |                |
| ET Controller Rebates   | 13                           |           | X         | X         |                |

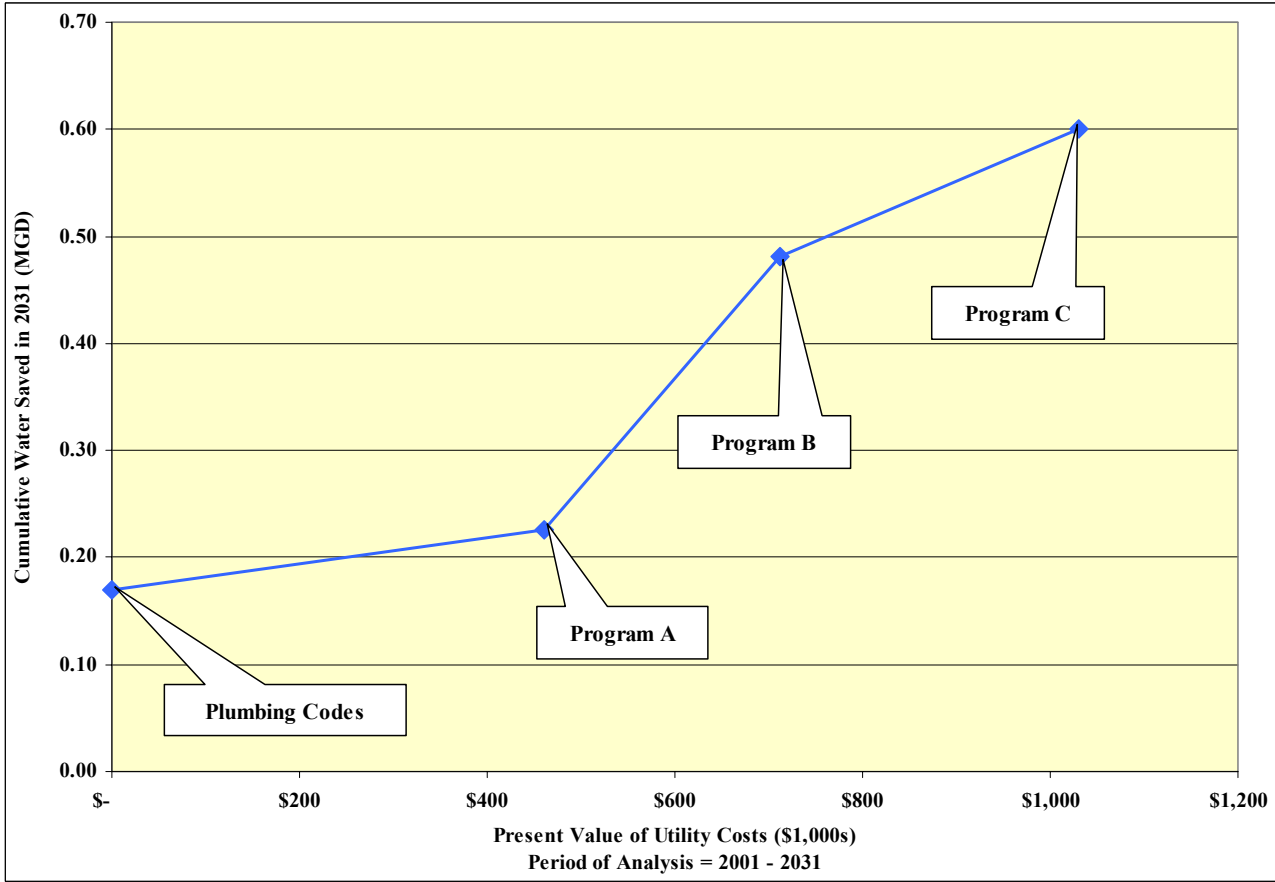
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Town of Hillsborough  
June 15, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           | X         | X         |                |
| Homeowner irrigation classes  | 15                           |           |           | X         |                |
| Promote water efficient plantings at new homes  | 16                           |           | X         | X         |                |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | X              |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           |           | X              |
| Rebate efficient clothes washers  | 20                           |           |           |           | X              |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           |           | X              |
| Restaurant low flow spray rinse nozzles   | 22                           |           |           |           | X              |
| Focused water audits for hotels/motels  | 23                           |           |           |           | X              |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | X              |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | X              |
| Award program for water savings by businesses   | 26                           |           |           |           | X              |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Town of Hillsborough  
June 15, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           |           | <b>X</b>       |
| Financial incentives for complying with water use budget | 29                           |           |           |           | <b>X</b>       |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | <b>X</b>       |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | <b>X</b>       |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>3</b>  | <b>7</b>  | <b>10</b> | <b>22</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
Town of Hillsborough  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$461            | \$712            | \$1,031          |
| <b>Cumulative Water Saved (MGD)</b>      | 0.17                 | 0.23             | 0.48             | 0.60             |

**Appendix D14**  
**Los Trancos County Water District**

**FINAL Results of Conservation Measures Evaluation  
Los Trancos County Water District  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.4                              | 1.4                                | 0.001                                 | \$1,415                                 | \$4,547             | \$2,735                       |
| 2                    | Residential Retrofit  | 2.0                              | 5.3                                | 0.000                                 | \$1,059                                 | \$1,806             | \$1,892                       |
| 3                    | Large Landscape Conservation  |                                  |                                    |                                       |   |                     |                               |
| 4                    | Water Budgets   |                                  |                                    |                                       |   |                     |                               |
| 5                    | Clothes Washer Rebate   | 2.1                              | 1.9                                | 0.000                                 | \$983                                   | \$1,413             | \$1,324                       |
| 6                    | Public Information Program  | 2.1                              | 2.8                                | 0.001                                 | \$988                                   | \$12,501            | \$2,949                       |
| 7                    | Commercial Water Audits   |                                  |                                    |                                       |   |                     |                               |
| 8                    | Commercial ULF Toilet and Urinal Rebates  |                                  |                                    |                                       |   |                     |                               |
| 9                    | Residential ULF Toilet Rebate   | 1.1                              | 0.5                                | 0.000                                 | \$1,879                                 | \$34                | \$363                         |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 6.4                              | 0.5                                | 0.000                                 | \$280                                   | \$1,226             | \$58                          |
| 11                   | Home Leak Detection and Repair  | 0.6                              | 0.6                                | 0.000                                 | \$4,172                                 | (\$2,658)           | \$3,636                       |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 0.8                              | 0.6                                | 0.001                                 | \$2,378                                 | (\$3,005)           | \$9,090                       |
| 13                   | ET Controller Rebates   | 1.8                              | 1.2                                | 0.000                                 | \$1,039                                 | \$4,275             | \$1,636                       |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            |                                  |                                    |                                       |   |                     |                               |
| 15                   | Homeowner irrigation classes  |                                  |                                    |                                       |   |                     |                               |
| 16                   | Promote water efficient plantings at new homes  | 1.3                              | 0.1                                | 0.000                                 | \$1,393                                 | \$308               | \$442                         |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              |                                  |                                    |                                       |   |                     |                               |
| 18                   | Incentives for retrofitting sub-metering  |                                  |                                    |                                       |   |                     |                               |
| 19                   | Require sub-metering multifamily units  |                                  |                                    |                                       |   |                     |                               |
| 20                   | Rebate efficient clothes washers  |                                  |                                    |                                       |   |                     |                               |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) |                                  |                                    |                                       |   |                     |                               |



**FINAL Results of Conservation Measures Evaluation  
Los Trancos County Water District  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  |                                  |                                    |                                       |   |                     |                               |
| 23                   | Focused water audits for hotels/motels                   |                                  |                                    |                                       |   |                     |                               |
| 24                   | WAVE Program (US EPA) for hotels                         |                                  |                                    |                                       |   |                     |                               |
| 25                   | Hotel retrofit (w/financial assistance)                  |                                  |                                    |                                       |   |                     |                               |
| 26                   | Award program for water savings by businesses            |                                  |                                    |                                       |   |                     |                               |
| 27                   | Replace inefficient water using equipment                |                                  |                                    |                                       |   |                     |                               |
| 28                   | Require 0.5 gal/flush urinals in new buildings           |                                  |                                    |                                       |   |                     |                               |
| 29                   | Financial incentives for complying with water use budget |                                  |                                    |                                       |   |                     |                               |
| 30                   | Financial incentives for irrigation upgrades             |                                  |                                    |                                       |   |                     |                               |
| 31                   | Require dedicated irrigation meters for new accounts     |                                  |                                    |                                       |   |                     |                               |
| 32                   | Water Utility / City Department water reduction goals    |                                  |                                    |                                       |   |                     |                               |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
Los Trancos County Water District  
June 8, 2004**

| <b>Description of Conservation Activity</b> | <b>Corresponding Measure Number</b> |
|---|-------------------------------------|
| Residential Retrofit (CA BMP 2)             | 2                                   |
| Clothes Washer Rebate (CA BMP 6)            | 5                                   |
| Public Information Program (CA BMP 7)       | 6                                   |
| Conservation Pricing (CA BMP 11)            | None <sup>1</sup>                   |
| Water Waste Prohibition (CA BMP 13)         | None <sup>1</sup>                   |

<sup>1</sup>Measure not evaluated in model.

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Los Trancos County Water District  
June 8, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            |           |           | X         |                |
| Residential Retrofit  | 2                            | X         | X         | X         |                |
| Large Landscape Conservation Audits   | 3                            |           |           |           | X              |
| Water Budgets   | 4                            |           |           |           | X              |
| Clothes Washer Rebate   | 5                            | X         | X         | X         |                |
| Public Information Program  | 6                            | X         | X         | X         |                |
| Commercial Water Audits   | 7                            |           |           |           | X              |
| ULF Toilet and Urinal Rebates   | 8                            |           |           |           | X              |
| Residential ULF Toilet Rebate   | 9                            |           |           |           | X              |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | X              |
| Home Leak Detection and Repair  | 11                           |           |           |           | X              |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           |           | X              |
| ET Controller Rebates   | 13                           |           | X         | X         |                |

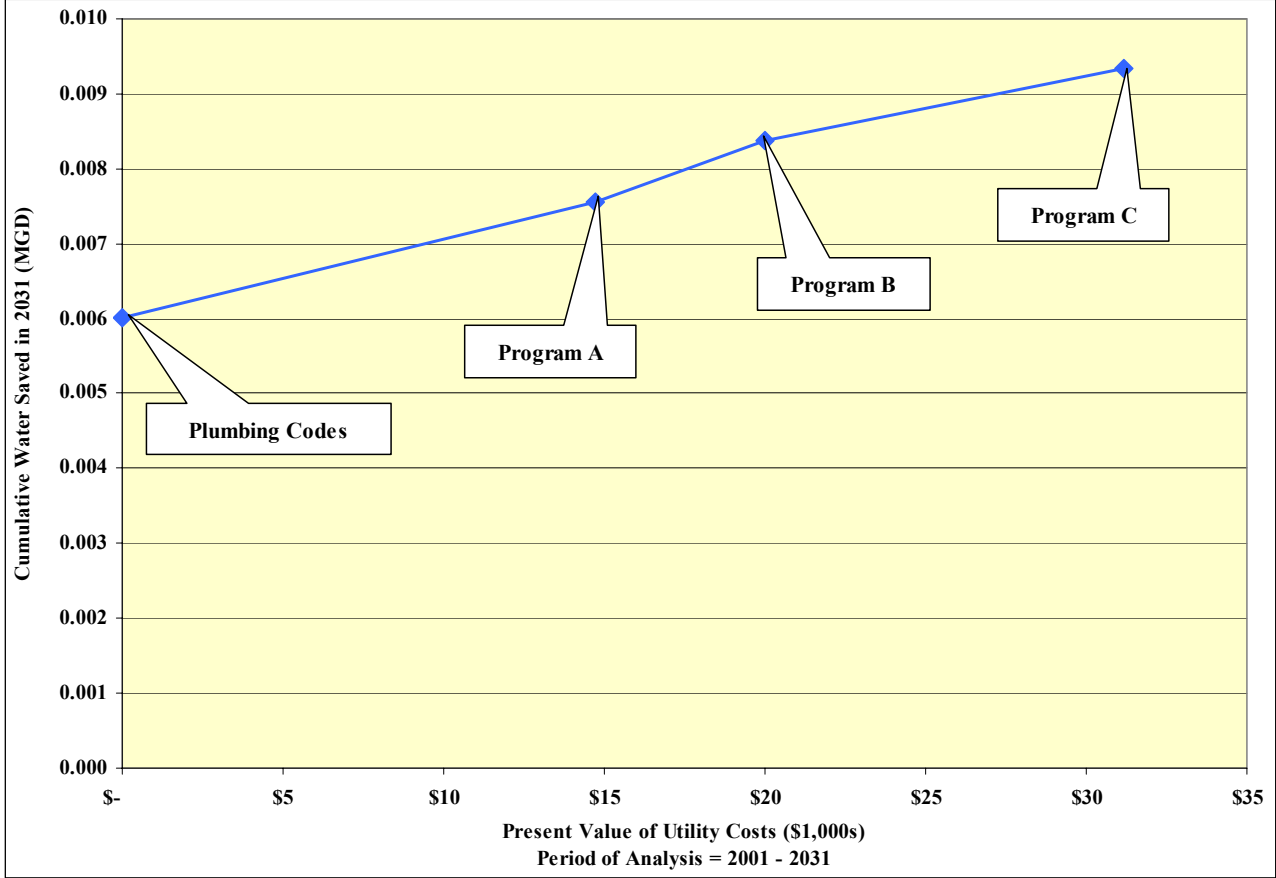
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Los Trancos County Water District  
June 8, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           |           |           | <b>X</b>       |
| Homeowner irrigation classes  | 15                           |           |           |           | <b>X</b>       |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | <b>X</b>       |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | <b>X</b>       |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | <b>X</b>       |
| Require sub-metering multifamily units  | 19                           |           |           |           | <b>X</b>       |
| Rebate efficient clothes washers  | 20                           |           |           |           | <b>X</b>       |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           |           | <b>X</b>       |
| Restaurant low flow spray rinse nozzles   | 22                           |           |           |           | <b>X</b>       |
| Focused water audits for hotels/motels  | 23                           |           |           |           | <b>X</b>       |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | <b>X</b>       |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | <b>X</b>       |
| Award program for water savings by businesses   | 26                           |           |           |           | <b>X</b>       |
| Replace inefficient water using equipment   | 27                           |           |           |           | <b>X</b>       |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Los Trancos County Water District  
June 8, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           |           | <b>X</b>       |
| Financial incentives for complying with water use budget | 29                           |           |           |           | <b>X</b>       |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | <b>X</b>       |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | <b>X</b>       |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>3</b>  | <b>4</b>  | <b>5</b>  | <b>27</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
 Los Trancos County Water District  
 August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$15             | \$20             | \$31             |
| <b>Cumulative Water Saved (MGD)</b>      | 0.006                | 0.008            | 0.008            | 0.009            |

**Appendix D15**  
**Menlo Park, City of**

**FINAL Results of Conservation Measures Evaluation  
City of Menlo Park  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.8                              | 2.1                                | 0.009                                 | \$1,096                                 | \$85,760            | \$27,136                      |
| 2                    | Residential Retrofit  | 2.5                              | 6.5                                | 0.003                                 | \$850                                   | \$43,103            | \$30,147                      |
| 3                    | Large Landscape Conservation  | 2.4                              | 2.0                                | 0.014                                 | \$795                                   | \$173,257           | \$34,427                      |
| 4                    | Water Budgets   | 38.6                             | 38.6                               | 0.039                                 | \$52                                    | \$864,723           | \$23,452                      |
| 5                    | Clothes Washer Rebate   | 2.2                              | 2.0                                | 0.002                                 | \$945                                   | \$27,388            | \$23,839                      |
| 6                    | Public Information Program  | 1.9                              | 2.8                                | 0.010                                 | \$1,080                                 | \$112,090           | \$34,466                      |
| 7                    | Commercial Water Audits   | 6.1                              | 6.0                                | 0.043                                 | \$318                                   | \$796,499           | \$93,811                      |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 28.9                             | 16.1                               | 0.002                                 | \$73                                    | \$35,876            | \$1,447                       |
| 9                    | Residential ULF Toilet Rebate   | 1.2                              | 0.5                                | 0.025                                 | \$1,722                                 | \$81,820            | \$301,638                     |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 8.2                              | 0.6                                | 0.028                                 | \$247                                   | \$564,609           | \$48,801                      |
| 11                   | Home Leak Detection and Repair  | 0.8                              | 0.8                                | 0.002                                 | \$3,253                                 | (\$17,012)          | \$43,005                      |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 1.8                              | 1.3                                | 0.018                                 | \$1,111                                 | \$181,115           | \$133,625                     |
| 13                   | ET Controller Rebates   | 3.1                              | 2.2                                | 0.011                                 | \$585                                   | \$152,178           | \$23,168                      |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 13.3                             | 1.4                                | 0.038                                 | \$142                                   | \$763,646           | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 7.0                              | 0.6                                | 0.021                                 | \$266                                   | \$374,094           | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 1.4                              | 0.2                                | 0.000                                 | \$1,245                                 | \$1,406             | \$796                         |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 3.1                              | 6.6                                | 0.001                                 | \$669                                   | \$10,117            | \$5,198                       |
| 18                   | Incentives for retrofitting sub-metering  | 2.2                              | 0.7                                | 0.000                                 | \$884                                   | \$2,961             | \$1,406                       |
| 19                   | Require sub-metering multifamily units  | 3.6                              | 1.0                                | 0.001                                 | \$507                                   | \$10,714            | \$1,044                       |
| 20                   | Rebate efficient clothes washers  | 6.3                              | 12.3                               | 0.001                                 | \$331                                   | \$24,401            | \$4,850                       |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 29.8                             | 1.3                                | 0.009                                 | \$61                                    | \$177,136           | \$1,648                       |



**FINAL Results of Conservation Measures Evaluation  
City of Menlo Park  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 41.1                               | 0.003                                 | \$134                                   | \$61,184            | \$4,740                       |
| 23                   | Focused water audits for hotels/motels                   |                                  |                                    |                                       |   |                     |                               |
| 24                   | WAVE Program (US EPA) for hotels                         |                                  |                                    |                                       |   |                     |                               |
| 25                   | Hotel retrofit (w/financial assistance)                  |                                  |                                    |                                       |   |                     |                               |
| 26                   | Award program for water savings by businesses            |                                  |                                    |                                       |   |                     |                               |
| 27                   | Replace inefficient water using equipment                | 2.9                              | 0.5                                | 0.006                                 | \$671                                   | \$86,238            | \$25,865                      |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 23.0                             | 23.0                               | 0.001                                 | \$81                                    | \$19,716            | \$245                         |
| 29                   | Financial incentives for complying with water use budget | 15.3                             | 5.4                                | 0.023                                 | \$127                                   | \$469,239           | \$20,882                      |
| 30                   | Financial incentives for irrigation upgrades             | 3.8                              | 2.1                                | 0.001                                 | \$506                                   | \$8,608             | \$1,673                       |
| 31                   | Require dedicated irrigation meters for new accounts     |                                  |                                    |                                       |   |                     |                               |
| 32                   | Water Utility / City Department water reduction goals    | 28.7                             | 7.4                                | 0.011                                 | \$68                                    | \$225,112           | \$4,727                       |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
City of Menlo Park  
June 15, 2004**

| <b>Description of Conservation Activity</b> | <b>Corresponding Measure Number</b> |
|---|-------------------------------------|
| Clothes Washer Rebate (CA BMP 6)            | 5                                   |
| Public Information Program (CA BMP 7)       | 6                                   |
| Conservation Pricing (CA BMP 11)            | None <sup>1</sup>                   |
| Water Waste Prohibition (CA BMP 13)         | None <sup>1</sup>                   |

<sup>1</sup>Measure not evaluated in model.

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Menlo Park  
June 15, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            |           |           |           | <b>X</b>       |
| Residential Retrofit  | 2                            |           | <b>X</b>  | <b>X</b>  |                |
| Large Landscape Conservation Audits   | 3                            |           |           | <b>X</b>  |                |
| Water Budgets   | 4                            |           | <b>X</b>  | <b>X</b>  |                |
| Clothes Washer Rebate   | 5                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Public Information Program  | 6                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Commercial Water Audits   | 7                            |           |           | <b>X</b>  |                |
| ULF Toilet and Urinal Rebates   | 8                            |           |           |           | <b>X</b>       |
| Residential ULF Toilet Rebate   | 9                            |           |           | <b>X</b>  |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | <b>X</b>       |
| Home Leak Detection and Repair  | 11                           |           |           |           | <b>X</b>       |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           | <b>X</b>  |                |
| ET Controller Rebates   | 13                           |           |           | <b>X</b>  |                |

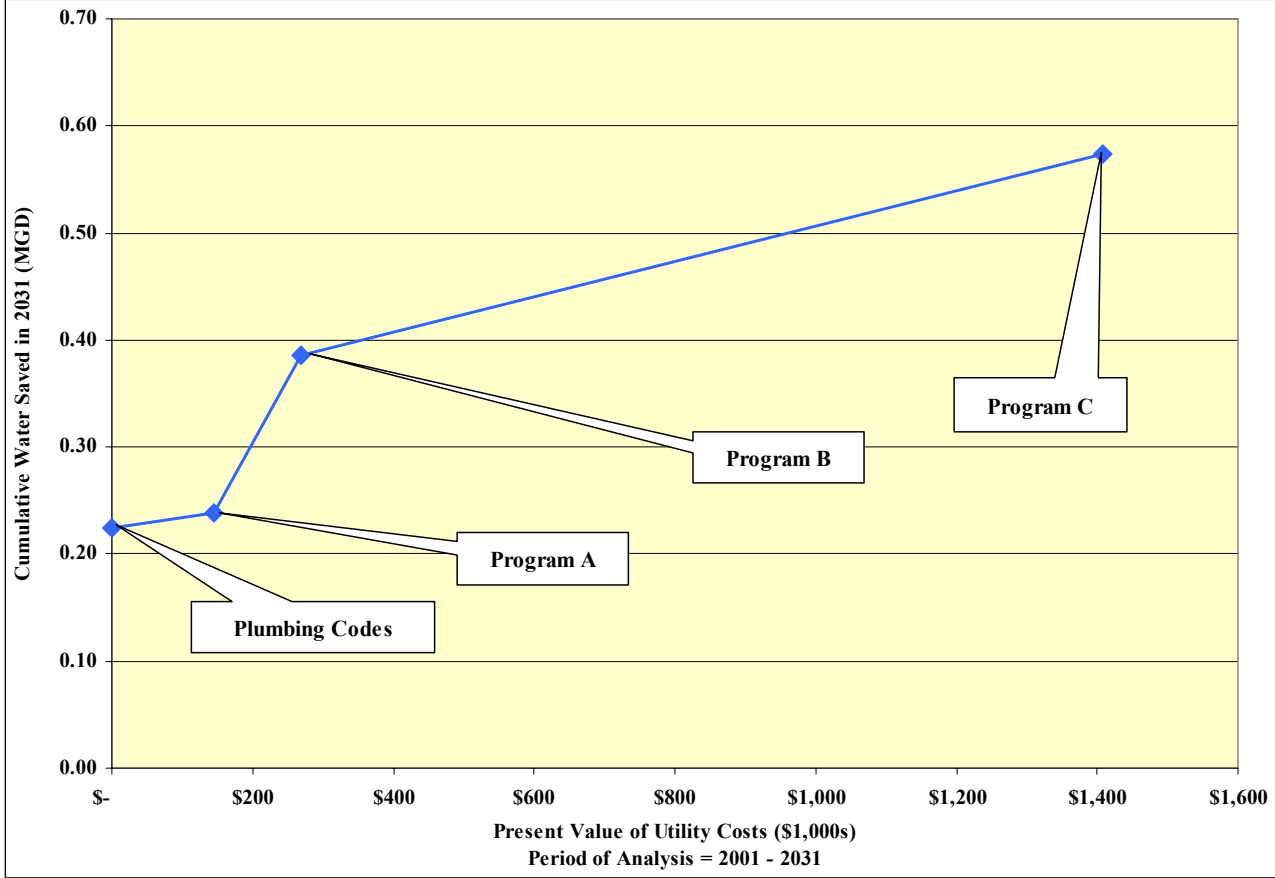
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Menlo Park  
June 15, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           | X         | X         |                |
| Homeowner irrigation classes  | 15                           |           |           | X         |                |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | X              |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | X              |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           |           | X              |
| Rebate efficient clothes washers  | 20                           |           |           |           | X              |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           | X         | X         |                |
| Restaurant low flow spray rinse nozzles   | 22                           |           | X         | X         |                |
| Focused water audits for hotels/motels  | 23                           |           |           |           | X              |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | X              |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | X              |
| Award program for water savings by businesses   | 26                           |           |           |           | X              |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Menlo Park  
June 15, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           | X         |                |
| Financial incentives for complying with water use budget | 29                           |           |           | X         |                |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | X              |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | X              |
| Water Utility / City Department water reduction goals    | 32                           |           | X         | X         |                |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>2</b>  | <b>8</b>  | <b>16</b> | <b>16</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
City of Menlo Park  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$144            | \$269            | \$1,408          |
| <b>Cumulative Water Saved (MGD)</b>      | 0.22                 | 0.24             | 0.39             | 0.57             |

**Appendix D16**  
**Mid-Peninsula Water District**

**FINAL Results of Conservation Measures Evaluation  
Mid-Peninsula Water District  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.5                              | 1.8                                | 0.014                                 | \$1,353                                 | \$101,169           | \$56,182                      |
| 2                    | Residential Retrofit  | 2.6                              | 7.0                                | 0.009                                 | \$799                                   | \$134,422           | \$86,075                      |
| 3                    | Large Landscape Conservation  | 1.6                              | 1.4                                | 0.007                                 | \$1,193                                 | \$60,747            | \$28,167                      |
| 4                    | Water Budgets   |                                  |                                    |                                       |   |                     |                               |
| 5                    | Clothes Washer Rebate   | 2.1                              | 1.9                                | 0.004                                 | \$1,001                                 | \$53,870            | \$52,313                      |
| 6                    | Public Information Program  | 1.5                              | 2.3                                | 0.016                                 | \$1,384                                 | \$125,026           | \$71,590                      |
| 7                    | Commercial Water Audits   | 1.9                              | 1.8                                | 0.017                                 | \$1,034                                 | \$174,221           | \$120,237                     |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 12.5                             | 6.9                                | 0.002                                 | \$169                                   | \$36,725            | \$3,609                       |
| 9                    | Residential ULF Toilet Rebate   | 1.0                              | 0.5                                | 0.037                                 | \$1,957                                 | \$21,401            | \$505,999                     |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 7.3                              | 0.5                                | 0.050                                 | \$274                                   | \$968,946           | \$81,857                      |
| 11                   | Home Leak Detection and Repair  | 0.5                              | 0.5                                | 0.003                                 | \$4,552                                 | (\$68,946)          | \$89,369                      |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 1.8                              | 1.3                                | 0.038                                 | \$1,130                                 | \$372,013           | \$286,807                     |
| 13                   | ET Controller Rebates   | 1.2                              | 0.9                                | 0.008                                 | \$1,490                                 | \$31,857            | \$44,920                      |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 12.7                             | 1.0                                | 0.037                                 | \$146                                   | \$724,417           | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 6.2                              | 0.4                                | 0.018                                 | \$295                                   | \$323,840           | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 1.2                              | 0.1                                | 0.000                                 | \$1,576                                 | \$587               | \$1,329                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 3.6                              | 7.8                                | 0.002                                 | \$569                                   | \$36,746            | \$14,963                      |
| 18                   | Incentives for retrofitting sub-metering  | 3.3                              | 1.1                                | 0.002                                 | \$596                                   | \$23,839            | \$6,064                       |
| 19                   | Require sub-metering multifamily units  | 6.1                              | 1.6                                | 0.001                                 | \$312                                   | \$19,040            | \$1,612                       |
| 20                   | Rebate efficient clothes washers  | 6.9                              | 13.4                               | 0.000                                 | \$304                                   | \$1,123             | \$203                         |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 5.2                              | 0.7                                | 0.003                                 | \$336                                   | \$39,729            | \$798                         |



**FINAL Results of Conservation Measures Evaluation  
Mid-Peninsula Water District  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 41.1                               | 0.005                                 | \$134                                   | \$112,542           | \$8,724                       |
| 23                   | Focused water audits for hotels/motels                   | 13.3                             | 15.7                               | 0.008                                 | \$147                                   | \$156,908           | \$7,500                       |
| 24                   | WAVE Program (US EPA) for hotels                         | 72.1                             | 5.8                                | 0.001                                 | \$27                                    | \$11,156            | \$92                          |
| 25                   | Hotel retrofit (w/financial assistance)                  | 6.0                              | 6.1                                | 0.004                                 | \$322                                   | \$75,542            | \$8,775                       |
| 26                   | Award program for water savings by businesses            |                                  |                                    |                                       |   |                     |                               |
| 27                   | Replace inefficient water using equipment                | 0.6                              | 0.1                                | 0.002                                 | \$3,472                                 | (\$27,359)          | \$36,005                      |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 9.9                              | 9.9                                | 0.000                                 | \$176                                   | \$2,749             | \$23                          |
| 29                   | Financial incentives for complying with water use budget |                                  |                                    |                                       |   |                     |                               |
| 30                   | Financial incentives for irrigation upgrades             | 0.6                              | 0.4                                | 0.000                                 | \$2,701                                 | (\$1,902)           | \$437                         |
| 31                   | Require dedicated irrigation meters for new accounts     | 3.5                              | 0.4                                | 0.002                                 | \$497                                   | \$23,980            | \$289                         |
| 32                   | Water Utility / City Department water reduction goals    | 7.9                              | 1.8                                | 0.008                                 | \$246                                   | \$155,973           | \$13,195                      |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
Mid-Peninsula Water District  
June 15, 2004**

| <b>Description of Conservation Activity</b>               | <b>Corresponding Measure Number</b> |
|---|-------------------------------------|
| Residential Water Surveys (CA BMP 1)                      | 1                                   |
| Residential Retrofit (CA BMP 2)                           | 2                                   |
| Clothes Washer Rebate (CA BMP 6)                          | 5                                   |
| Public Information Program (CA BMP 7)                     | 6                                   |
| Conservation Pricing (CA BMP 11)                          | None <sup>1</sup>                   |
| System Water Audits, Leak Detection and Repair (CA BMP 3) | None <sup>1</sup>                   |

<sup>1</sup>Measure not evaluated in model.

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Mid-Peninsula Water District  
June 15, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Residential Retrofit  | 2                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Large Landscape Conservation Audits   | 3                            |           |           |           | <b>X</b>       |
| Water Budgets   | 4                            |           |           |           | <b>X</b>       |
| Clothes Washer Rebate   | 5                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Public Information Program  | 6                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Commercial Water Audits   | 7                            |           |           |           | <b>X</b>       |
| ULF Toilet and Urinal Rebates   | 8                            |           |           |           | <b>X</b>       |
| Residential ULF Toilet Rebate   | 9                            |           |           | <b>X</b>  |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           | <b>X</b>  | <b>X</b>  |                |
| Home Leak Detection and Repair  | 11                           |           |           |           | <b>X</b>       |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           |           | <b>X</b>       |
| ET Controller Rebates   | 13                           |           |           |           | <b>X</b>       |

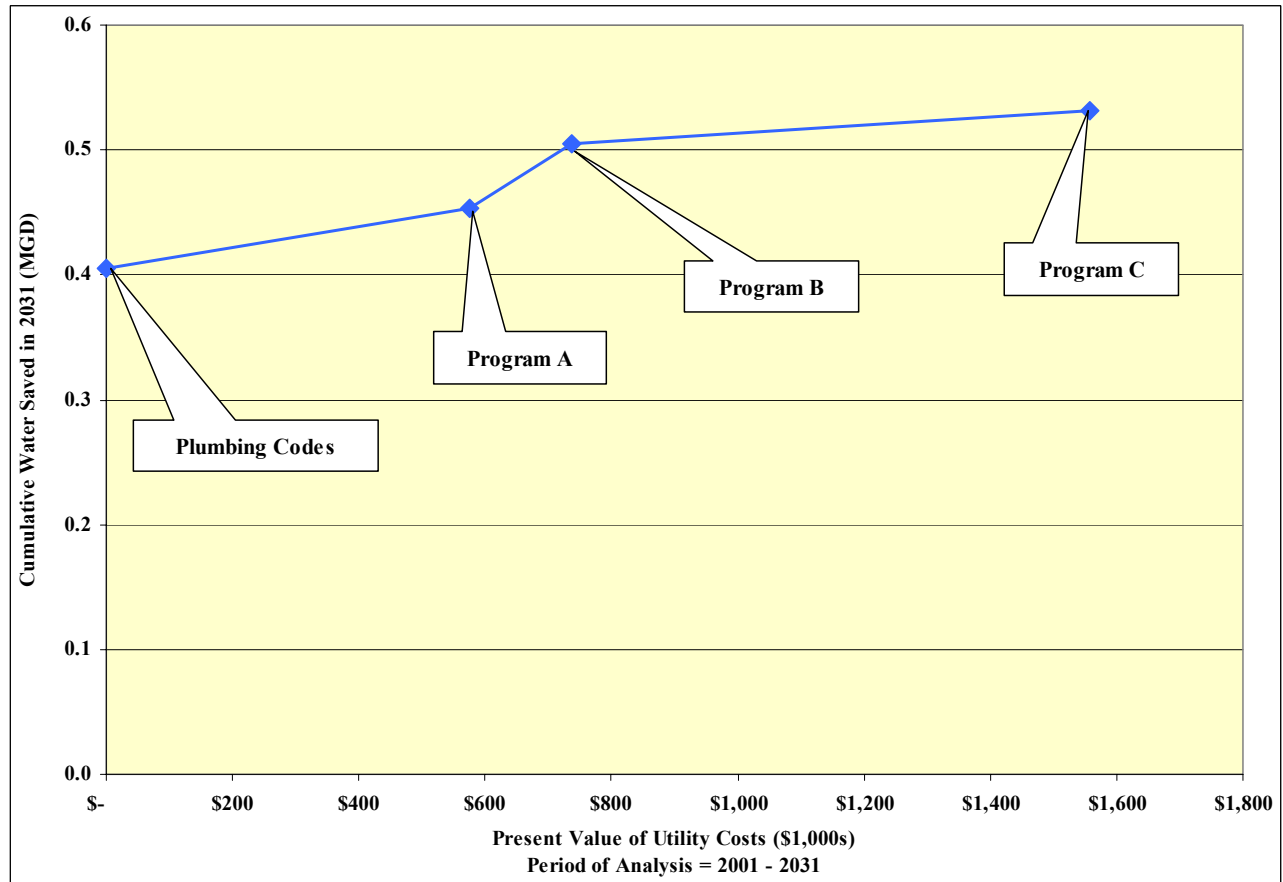
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Mid-Peninsula Water District  
June 15, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           |           |           | <b>X</b>       |
| Homeowner irrigation classes  | 15                           |           |           |           | <b>X</b>       |
| Promote water efficient plantings at new homes  | 16                           |           |           | <b>X</b>  |                |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | <b>X</b>       |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | <b>X</b>       |
| Require sub-metering multifamily units  | 19                           |           |           |           | <b>X</b>       |
| Rebate efficient clothes washers  | 20                           |           |           |           | <b>X</b>       |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           |           | <b>X</b>       |
| Restaurant low flow spray rinse nozzles   | 22                           |           | <b>X</b>  | <b>X</b>  |                |
| Focused water audits for hotels/motels  | 23                           |           |           |           | <b>X</b>       |
| WAVE Program (US EPA) for hotels  | 24                           |           | <b>X</b>  | <b>X</b>  |                |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | <b>X</b>       |
| Award program for water savings by businesses   | 26                           |           |           |           | <b>X</b>       |
| Replace inefficient water using equipment   | 27                           |           |           |           | <b>X</b>       |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Mid-Peninsula Water District  
June 15, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           | <b>X</b>  |                |
| Financial incentives for complying with water use budget | 29                           |           |           |           | <b>X</b>       |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | <b>X</b>       |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | <b>X</b>       |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>4</b>  | <b>7</b>  | <b>10</b> | <b>22</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
Mid-Peninsula Water District  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$576            | \$738            | \$1,558          |
| <b>Cumulative Water Saved (MGD)</b>      | 0.40                 | 0.45             | 0.51             | 0.53             |

**Appendix D17**  
**Millbrae, City of**

**FINAL Results of Conservation Measures Evaluation  
City of Millbrae  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.2                              | 1.6                                | 0.011                                 | \$1,601                                 | \$47,104            | \$50,066                      |
| 2                    | Residential Retrofit  | 2.9                              | 7.7                                | 0.004                                 | \$735                                   | \$65,158            | \$36,034                      |
| 3                    | Large Landscape Conservation  | 0.7                              | 0.6                                | 0.003                                 | \$2,792                                 | (\$33,746)          | \$31,247                      |
| 4                    | Water Budgets   | 34.4                             | 34.4                               | 0.018                                 | \$58                                    | \$389,182           | \$12,144                      |
| 5                    | Clothes Washer Rebate   | 2.3                              | 2.0                                | 0.004                                 | \$928                                   | \$49,525            | \$41,817                      |
| 6                    | Public Information Program  | 1.4                              | 2.3                                | 0.014                                 | \$1,435                                 | \$97,898            | \$62,462                      |
| 7                    | Commercial Water Audits   | 1.9                              | 1.8                                | 0.010                                 | \$1,018                                 | \$105,384           | \$70,794                      |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 14.9                             | 8.3                                | 0.001                                 | \$141                                   | \$24,918            | \$2,019                       |
| 9                    | Residential ULF Toilet Rebate   | 1.2                              | 0.5                                | 0.030                                 | \$1,678                                 | \$112,318           | \$352,161                     |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 8.8                              | 0.6                                | 0.047                                 | \$224                                   | \$932,435           | \$56,969                      |
| 11                   | Home Leak Detection and Repair  | 0.5                              | 0.5                                | 0.002                                 | \$5,276                                 | (\$70,432)          | \$77,804                      |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 1.9                              | 1.4                                | 0.035                                 | \$1,033                                 | \$376,474           | \$237,688                     |
| 13                   | ET Controller Rebates   | 1.1                              | 0.8                                | 0.006                                 | \$1,668                                 | \$12,320            | \$39,282                      |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 9.2                              | 0.7                                | 0.027                                 | \$203                                   | \$506,868           | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 4.6                              | 0.3                                | 0.013                                 | \$405                                   | \$220,083           | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 1.0                              | 0.1                                | 0.000                                 | \$1,977                                 | (\$152)             | \$3,976                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 3.6                              | 7.7                                | 0.002                                 | \$569                                   | \$38,610            | \$15,750                      |
| 18                   | Incentives for retrofitting sub-metering  | 1.8                              | 0.6                                | 0.001                                 | \$1,109                                 | \$4,948             | \$3,717                       |
| 19                   | Require sub-metering multifamily units  | 3.6                              | 1.0                                | 0.002                                 | \$541                                   | \$32,801            | \$7,316                       |
| 20                   | Rebate efficient clothes washers  | 8.3                              | 16.1                               | 0.009                                 | \$254                                   | \$185,208           | \$27,075                      |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 11.7                             | 1.6                                | 0.002                                 | \$166                                   | \$42,495            | \$2,324                       |



**FINAL Results of Conservation Measures Evaluation  
City of Millbrae  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 41.1                               | 0.008                                 | \$134                                   | \$161,057           | \$12,489                      |
| 23                   | Focused water audits for hotels/motels                   | 20.6                             | 24.5                               | 0.010                                 | \$94                                    | \$219,668           | \$6,563                       |
| 24                   | WAVE Program (US EPA) for hotels                         | 112.1                            | 9.0                                | 0.001                                 | \$17                                    | \$15,253            | \$81                          |
| 25                   | Hotel retrofit (w/financial assistance)                  | 3.4                              | 3.4                                | 0.006                                 | \$580                                   | \$86,463            | \$21,500                      |
| 26                   | Award program for water savings by businesses            | 9.1                              | 2.6                                | 0.029                                 | \$200                                   | \$530,811           | \$20,700                      |
| 27                   | Replace inefficient water using equipment                | 1.0                              | 0.2                                | 0.002                                 | \$1,886                                 | \$1,236             | \$22,555                      |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 19.9                             | 19.9                               | 0.000                                 | \$100                                   | \$1,472             | \$46                          |
| 29                   | Financial incentives for complying with water use budget | 13.7                             | 6.5                                | 0.011                                 | \$143                                   | \$216,842           | \$11,458                      |
| 30                   | Financial incentives for irrigation upgrades             | 2.9                              | 1.6                                | 0.000                                 | \$669                                   | \$2,947             | \$915                         |
| 31                   | Require dedicated irrigation meters for new accounts     | 3.6                              | 0.5                                | 0.001                                 | \$532                                   | \$8,752             | \$507                         |
| 32                   | Water Utility / City Department water reduction goals    | 4.3                              | 0.9                                | 0.001                                 | \$458                                   | \$24,614            | \$4,400                       |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
City of Millbrae  
June 10, 2004**

| <b>Description of Conservation Activity</b>        | <b>Corresponding Measure Number</b> |
|--|-------------------------------------|
| Residential Water Surveys (CA BMP 1)               | 1                                   |
| Residential Retrofit (CA BMP 2)                    | 2                                   |
| Large Landscape Conservation Audits (CA BMP 5)     | 3                                   |
| Clothes Washer Rebate (CA BMP 6)                   | 5                                   |
| Public Information Program (CA BMP 7)              | 6                                   |
| ULF Toilet and Urinal Rebates (CA BMP 9)           | 8                                   |
| Residential ULF Toilet Rebates (CA BMP 14)         | 9                                   |
| Restaurant Low Flow Spray Rinse Nozzles (CA BMP 9) | 22                                  |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Millbrae  
June 10, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Residential Retrofit  | 2                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Large Landscape Conservation Audits   | 3                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Water Budgets   | 4                            |           | <b>X</b>  | <b>X</b>  |                |
| Clothes Washer Rebate   | 5                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Public Information Program  | 6                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Commercial Water Audits   | 7                            |           |           |           | <b>X</b>       |
| ULF Toilet and Urinal Rebates   | 8                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Residential ULF Toilet Rebate   | 9                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           | <b>X</b>  |                |
| Home Leak Detection and Repair  | 11                           |           |           |           | <b>X</b>       |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           |           | <b>X</b>       |
| ET Controller Rebates   | 13                           |           | <b>X</b>  | <b>X</b>  |                |

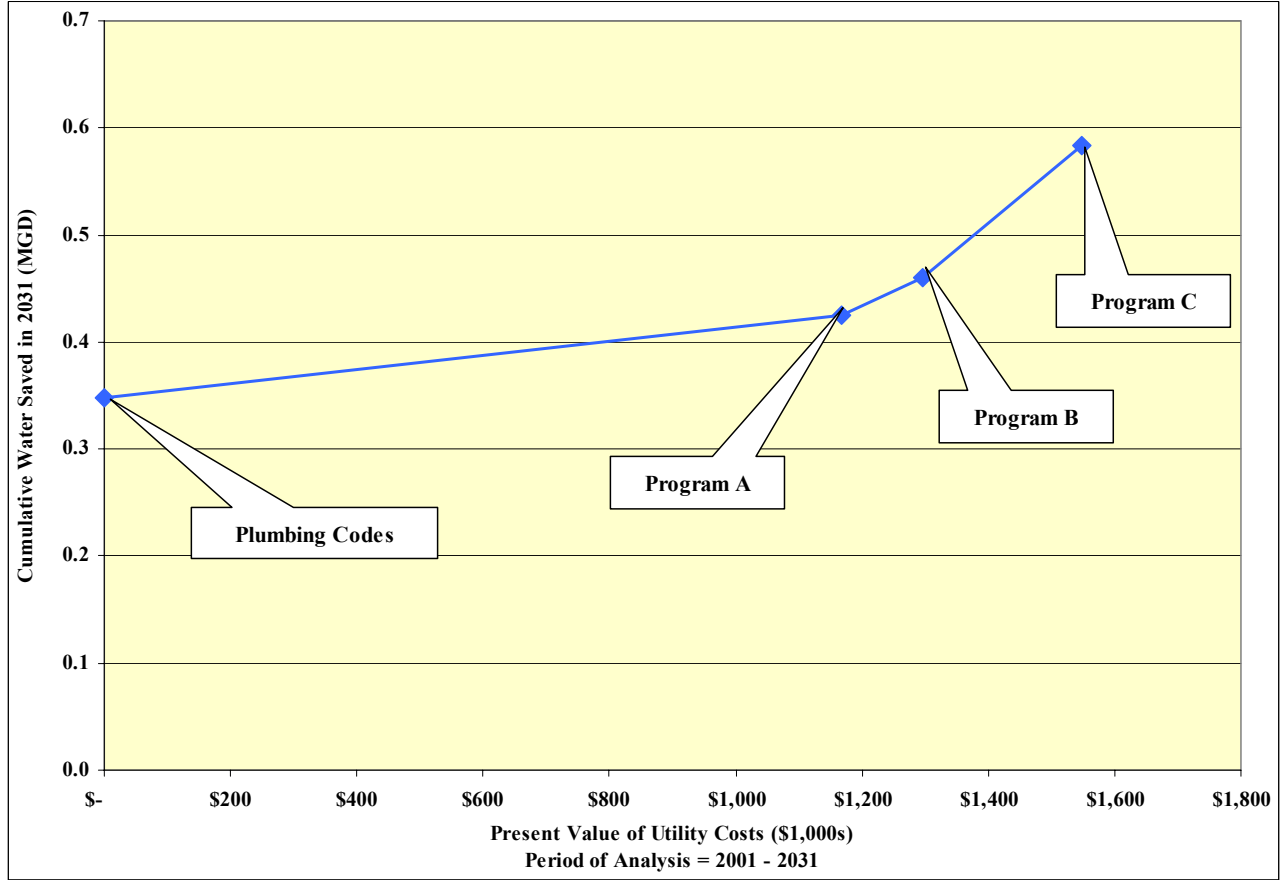
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Millbrae  
June 10, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           |           | X         |                |
| Homeowner irrigation classes  | 15                           |           |           | X         |                |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | X              |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           | X         |                |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           | X         |                |
| Rebate efficient clothes washers  | 20                           |           |           |           | X              |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           | X         | X         |                |
| Restaurant low flow spray rinse nozzles   | 22                           | X         | X         | X         |                |
| Focused water audits for hotels/motels  | 23                           |           |           |           | X              |
| WAVE Program (US EPA) for hotels  | 24                           |           |           | X         |                |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | X              |
| Award program for water savings by businesses   | 26                           |           |           |           | X              |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Millbrae  
June 10, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           | <b>X</b>  |                |
| Financial incentives for complying with water use budget | 29                           |           |           | <b>X</b>  |                |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | <b>X</b>       |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | <b>X</b>       |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>8</b>  | <b>11</b> | <b>19</b> | <b>13</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
City of Millbrae  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$1,168          | \$1,296          | \$1,549          |
| <b>Cumulative Water Saved (MGD)</b>      | 0.35                 | 0.43             | 0.46             | 0.58             |

**Appendix D18**  
**Milpitas, City of**

**FINAL Results of Conservation Measures Evaluation  
City of Milpitas  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.6                              | 2.0                                | 0.036                                 | \$1,190                                 | \$309,288           | \$116,047                     |
| 2                    | Residential Retrofit  | 3.2                              | 8.5                                | 0.002                                 | \$661                                   | \$24,928            | \$11,812                      |
| 3                    | Large Landscape Conservation  | 2.9                              | 2.5                                | 0.023                                 | \$639                                   | \$318,233           | \$46,876                      |
| 4                    | Water Budgets   | 23.8                             | 23.8                               | 0.128                                 | \$83                                    | \$2,764,260         | \$111,732                     |
| 5                    | Clothes Washer Rebate   | 2.8                              | 2.5                                | 0.010                                 | \$742                                   | \$158,929           | \$92,541                      |
| 6                    | Public Information Program  | 2.4                              | 3.7                                | 0.044                                 | \$829                                   | \$588,062           | \$119,550                     |
| 7                    | Commercial Water Audits   | 6.1                              | 6.3                                | 0.103                                 | \$317                                   | \$1,885,948         | \$219,346                     |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 31.5                             | 17.5                               | 0.005                                 | \$66                                    | \$112,664           | \$4,159                       |
| 9                    | Residential ULF Toilet Rebate   | 1.6                              | 0.7                                | 0.073                                 | \$1,308                                 | \$624,422           | \$1,036,528                   |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 12.4                             | 0.9                                | 0.083                                 | \$167                                   | \$1,795,278         | \$167,686                     |
| 11                   | Home Leak Detection and Repair  | 0.8                              | 0.8                                | 0.007                                 | \$3,111                                 | (\$50,513)          | \$149,438                     |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 1.9                              | 1.3                                | 0.078                                 | \$1,053                                 | \$801,002           | \$527,876                     |
| 13                   | ET Controller Rebates   | 1.8                              | 1.3                                | 0.026                                 | \$1,000                                 | \$240,612           | \$90,558                      |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 15.7                             | 1.0                                | 0.047                                 | \$115                                   | \$910,734           | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 10.6                             | 0.8                                | 0.032                                 | \$173                                   | \$590,735           | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 2.6                              | 0.3                                | 0.005                                 | \$698                                   | \$61,264            | \$10,538                      |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 3.6                              | 7.7                                | 0.005                                 | \$577                                   | \$75,866            | \$31,500                      |
| 18                   | Incentives for retrofitting sub-metering  | 1.1                              | 0.3                                | 0.000                                 | \$1,838                                 | \$398               | \$3,435                       |
| 19                   | Require sub-metering multifamily units  | 1.8                              | 0.5                                | 0.016                                 | \$1,023                                 | \$150,379           | \$52,524                      |
| 20                   | Rebate efficient clothes washers  | 8.9                              | 17.3                               | 0.011                                 | \$237                                   | \$237,069           | \$32,000                      |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 23.6                             | 2.9                                | 0.043                                 | \$77                                    | \$840,876           | \$6,265                       |



**FINAL Results of Conservation Measures Evaluation  
City of Milpitas  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 40.1                               | 0.029                                 | \$134                                   | \$612,015           | \$47,458                      |
| 23                   | Focused water audits for hotels/motels                   | 20.9                             | 24.8                               | 0.029                                 | \$93                                    | \$603,796           | \$17,813                      |
| 24                   | WAVE Program (US EPA) for hotels                         | 113.5                            | 9.1                                | 0.002                                 | \$17                                    | \$41,905            | \$219                         |
| 25                   | Hotel retrofit (w/financial assistance)                  | 5.5                              | 5.6                                | 0.015                                 | \$352                                   | \$276,986           | \$35,913                      |
| 26                   | Award program for water savings by businesses            | 7.0                              | 1.7                                | 0.015                                 | \$255                                   | \$252,692           | \$11,471                      |
| 27                   | Replace inefficient water using equipment                | 2.6                              | 0.5                                | 0.013                                 | \$733                                   | \$172,838           | \$58,772                      |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 36.0                             | 36.0                               | 0.003                                 | \$52                                    | \$69,767            | \$658                         |
| 29                   | Financial incentives for complying with water use budget | 9.1                              | 3.2                                | 0.059                                 | \$210                                   | \$1,133,713         | \$65,301                      |
| 30                   | Financial incentives for irrigation upgrades             | 5.3                              | 2.9                                | 0.006                                 | \$345                                   | \$106,699           | \$7,091                       |
| 31                   | Require dedicated irrigation meters for new accounts     |                                  |                                    |                                       |   |                     |                               |
| 32                   | Water Utility / City Department water reduction goals    | 16.9                             | 3.8                                | 0.017                                 | \$115                                   | \$357,211           | \$12,700                      |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
City of Milpitas  
June 24, 2004**

| Description of Conservation Activity                      | Corresponding Measure Number |
|---|------------------------------|
| Residential Water Surveys (CA BMP 1)                      | 1                            |
| Residential Retrofit (CA BMP 2)                           | 2                            |
| Large Landscape Conservation Audits (CA BMP 5)            | 3                            |
| Clothes Washer Rebate (CA BMP 6)                          | 5                            |
| Public Information Program (CA BMP 7)                     | 6                            |
| Commercial Water Audits (CA BMP 9)                        | 7                            |
| ULF Toilet and Urinal Rebates (CA BMP 9)                  | 8                            |
| Residential ULF Toilet Rebates (CA BMP 14)                | 9                            |
| Conservation Pricing (CA BMP 11)                          | None <sup>1</sup>            |
| System Water Audits, Leak Detection and Repair (CA BMP 3) | None <sup>1</sup>            |
| Metering with Commodity Rates (CA BMP 4)                  | None <sup>1</sup>            |
| Wholesale Agency Assistance Program (CA BMP 10)           | None <sup>1</sup>            |
| Conservation Coordinator (CA BMP 12)                      | None <sup>1</sup>            |
| Water Waste Prohibition (CA BMP 13)                       | None <sup>1</sup>            |

<sup>1</sup>Measure not evaluated in model.

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Milpitas  
June 24, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            | X         | X         | X         |                |
| Residential Retrofit  | 2                            | X         | X         | X         |                |
| Large Landscape Conservation Audits   | 3                            | X         | X         | X         |                |
| Water Budgets   | 4                            |           | X         | X         |                |
| Clothes Washer Rebate   | 5                            | X         | X         | X         |                |
| Public Information Program  | 6                            | X         | X         | X         |                |
| Commercial Water Audits   | 7                            | X         | X         | X         |                |
| ULF Toilet and Urinal Rebates   | 8                            | X         | X         | X         |                |
| Residential ULF Toilet Rebate   | 9                            | X         | X         | X         |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | X              |
| Home Leak Detection and Repair  | 11                           |           |           |           | X              |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           | X         |                |
| ET Controller Rebates   | 13                           |           |           | X         |                |

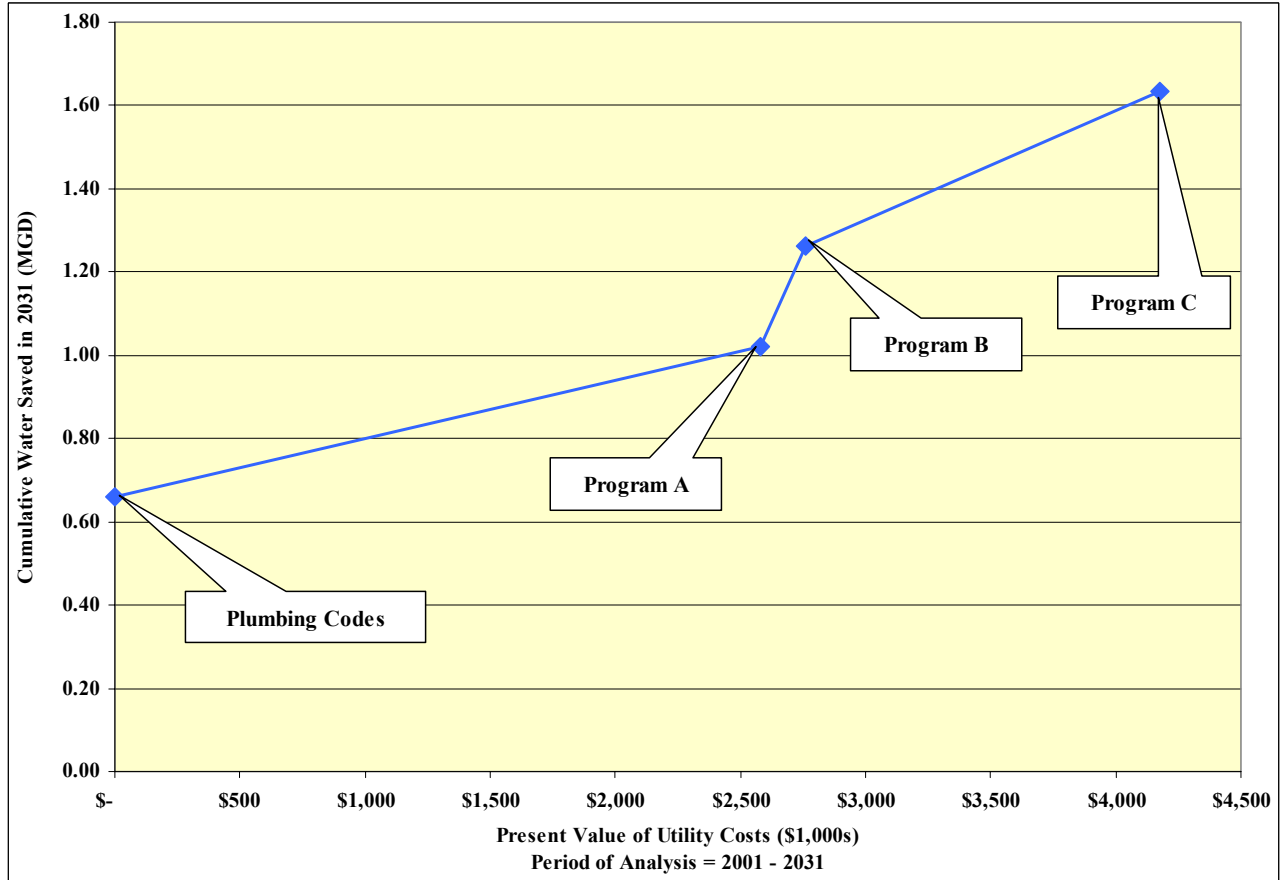
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Milpitas  
June 24, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           |           |           | <b>X</b>       |
| Homeowner irrigation classes  | 15                           |           |           | <b>X</b>  |                |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | <b>X</b>       |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | <b>X</b>       |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | <b>X</b>       |
| Require sub-metering multifamily units  | 19                           |           |           |           | <b>X</b>       |
| Rebate efficient clothes washers  | 20                           |           |           |           | <b>X</b>       |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           | <b>X</b>  |                |
| Restaurant low flow spray rinse nozzles   | 22                           |           | <b>X</b>  | <b>X</b>  |                |
| Focused water audits for hotels/motels  | 23                           |           | <b>X</b>  | <b>X</b>  |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | <b>X</b>       |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | <b>X</b>       |
| Award program for water savings by businesses   | 26                           |           |           | <b>X</b>  |                |
| Replace inefficient water using equipment   | 27                           |           |           |           | <b>X</b>       |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Milpitas  
June 24, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           |           | <b>X</b>       |
| Financial incentives for complying with water use budget | 29                           |           |           | <b>X</b>  |                |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | <b>X</b>       |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | <b>X</b>       |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>8</b>  | <b>11</b> | <b>17</b> | <b>15</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
City of Milpitas  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$2,578          | \$2,762          | \$4,175          |
| <b>Cumulative Water Saved (MGD)</b>      | 0.66                 | 1.02             | 1.26             | 1.63             |

**Appendix D19**  
**Mountain View, City of**

**FINAL Results of Conservation Measures Evaluation  
City of Mountain View  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.9                              | 2.4                                | 0.036                                 | \$1,049                                 | \$359,024           | \$106,856                     |
| 2                    | Residential Retrofit  | 2.7                              | 7.4                                | 0.019                                 | \$753                                   | \$274,309           | \$163,492                     |
| 3                    | Large Landscape Conservation  | 1.6                              | 1.3                                | 0.012                                 | \$1,175                                 | \$99,356            | \$46,635                      |
| 4                    | Water Budgets   | 47.0                             | 47.0                               | 0.325                                 | \$42                                    | \$7,061,169         | \$154,581                     |
| 5                    | Clothes Washer Rebate   | 2.0                              | 1.8                                | 0.013                                 | \$1,040                                 | \$144,165           | \$157,416                     |
| 6                    | Public Information Program  | 1.3                              | 2.1                                | 0.027                                 | \$1,503                                 | \$160,241           | \$129,177                     |
| 7                    | Commercial Water Audits   | 1.7                              | 1.7                                | 0.036                                 | \$1,106                                 | \$327,762           | \$270,046                     |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 23.3                             | 12.9                               | 0.008                                 | \$88                                    | \$175,725           | \$8,875                       |
| 9                    | Residential ULF Toilet Rebate   | 1.1                              | 0.5                                | 0.059                                 | \$1,801                                 | \$107,683           | \$737,813                     |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 8.7                              | 0.6                                | 0.083                                 | \$221                                   | \$1,601,627         | \$119,355                     |
| 11                   | Home Leak Detection and Repair  | 0.5                              | 0.5                                | 0.005                                 | \$4,984                                 | (\$141,652)         | \$160,999                     |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 2.5                              | 1.8                                | 0.101                                 | \$763                                   | \$1,345,143         | \$505,632                     |
| 13                   | ET Controller Rebates   | 2.8                              | 1.9                                | 0.038                                 | \$648                                   | \$498,084           | \$90,552                      |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 10.5                             | 0.7                                | 0.032                                 | \$171                                   | \$586,507           | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 4.9                              | 0.3                                | 0.015                                 | \$363                                   | \$242,961           | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 0.9                              | 0.1                                | 0.001                                 | \$2,120                                 | (\$2,188)           | \$4,661                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 3.6                              | 7.8                                | 0.010                                 | \$564                                   | \$170,971           | \$70,875                      |
| 18                   | Incentives for retrofitting sub-metering  | 4.7                              | 1.5                                | 0.012                                 | \$406                                   | \$205,890           | \$31,953                      |
| 19                   | Require sub-metering multifamily units  | 8.7                              | 2.3                                | 0.017                                 | \$209                                   | \$305,364           | \$12,563                      |
| 20                   | Rebate efficient clothes washers  | 7.7                              | 15.2                               | 0.054                                 | \$266                                   | \$1,084,223         | \$171,250                     |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 28.4                             | 4.0                                | 0.040                                 | \$63                                    | \$786,480           | \$8,820                       |



**FINAL Results of Conservation Measures Evaluation  
City of Mountain View  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 14.8                             | 40.8                               | 0.008                                 | \$134                                   | \$157,434           | \$12,489                      |
| 23                   | Focused water audits for hotels/motels                   | 11.1                             | 13.2                               | 0.020                                 | \$172                                   | \$401,747           | \$23,438                      |
| 24                   | WAVE Program (US EPA) for hotels                         | 60.1                             | 4.8                                | 0.001                                 | \$32                                    | \$28,957            | \$288                         |
| 25                   | Hotel retrofit (w/financial assistance)                  | 5.8                              | 5.9                                | 0.011                                 | \$328                                   | \$195,082           | \$23,750                      |
| 26                   | Award program for water savings by businesses            | 3.6                              | 0.8                                | 0.006                                 | \$493                                   | \$86,324            | \$10,350                      |
| 27                   | Replace inefficient water using equipment                | 0.7                              | 0.1                                | 0.005                                 | \$2,673                                 | (\$47,453)          | \$93,718                      |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 58.4                             | 58.4                               | 0.004                                 | \$31                                    | \$84,737            | \$452                         |
| 29                   | Financial incentives for complying with water use budget | 16.3                             | 5.8                                | 0.188                                 | \$116                                   | \$3,788,597         | \$147,800                     |
| 30                   | Financial incentives for irrigation upgrades             | 4.1                              | 2.3                                | 0.005                                 | \$440                                   | \$80,894            | \$8,114                       |
| 31                   | Require dedicated irrigation meters for new accounts     |                                  |                                    |                                       |   |                     |                               |
| 32                   | Water Utility / City Department water reduction goals    |                                  |                                    |                                       |   |                     |                               |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
City of Mountain View  
June 11, 2004**

| Description of Conservation Activity               | Corresponding Measure Number |
|--|------------------------------|
| Residential Water Surveys (CA BMP 1)               | 1                            |
| Residential Retrofit (CA BMP 2)                    | 2                            |
| Large Landscape Conservation Audits (CA BMP 5)     | 3                            |
| Clothes Washer Rebate (CA BMP 6)                   | 5                            |
| Public Information Program (CA BMP 7)              | 6                            |
| Commercial Water Audits (CA BMP 9)                 | 7                            |
| ULF Toilet and Urinal Rebates (CA BMP 9)           | 8                            |
| Residential ULF Toilet Rebates (CA BMP 14)         | 9                            |
| Restaurant Low Flow Spray Rinse Nozzles (CA BMP 9) | 22                           |
| Conservation Pricing (CA BMP 11)                   | None <sup>1</sup>            |
| Metering with Commodity Rates (CA BMP 4)           | None <sup>1</sup>            |
| Conservation Coordinator (CA BMP 12)               | None <sup>1</sup>            |
| Water Waste Prohibition (CA BMP 13)                | None <sup>1</sup>            |

<sup>1</sup>Measure not evaluated in model

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Mountain View  
June 11, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Residential Retrofit  | 2                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Large Landscape Conservation Audits   | 3                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Water Budgets   | 4                            |           | <b>X</b>  | <b>X</b>  |                |
| Clothes Washer Rebate   | 5                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Public Information Program  | 6                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Commercial Water Audits   | 7                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| ULF Toilet and Urinal Rebates   | 8                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Residential ULF Toilet Rebate   | 9                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | <b>X</b>       |
| Home Leak Detection and Repair  | 11                           |           |           |           | <b>X</b>       |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           | <b>X</b>  |                |
| ET Controller Rebates   | 13                           |           |           |           | <b>X</b>       |

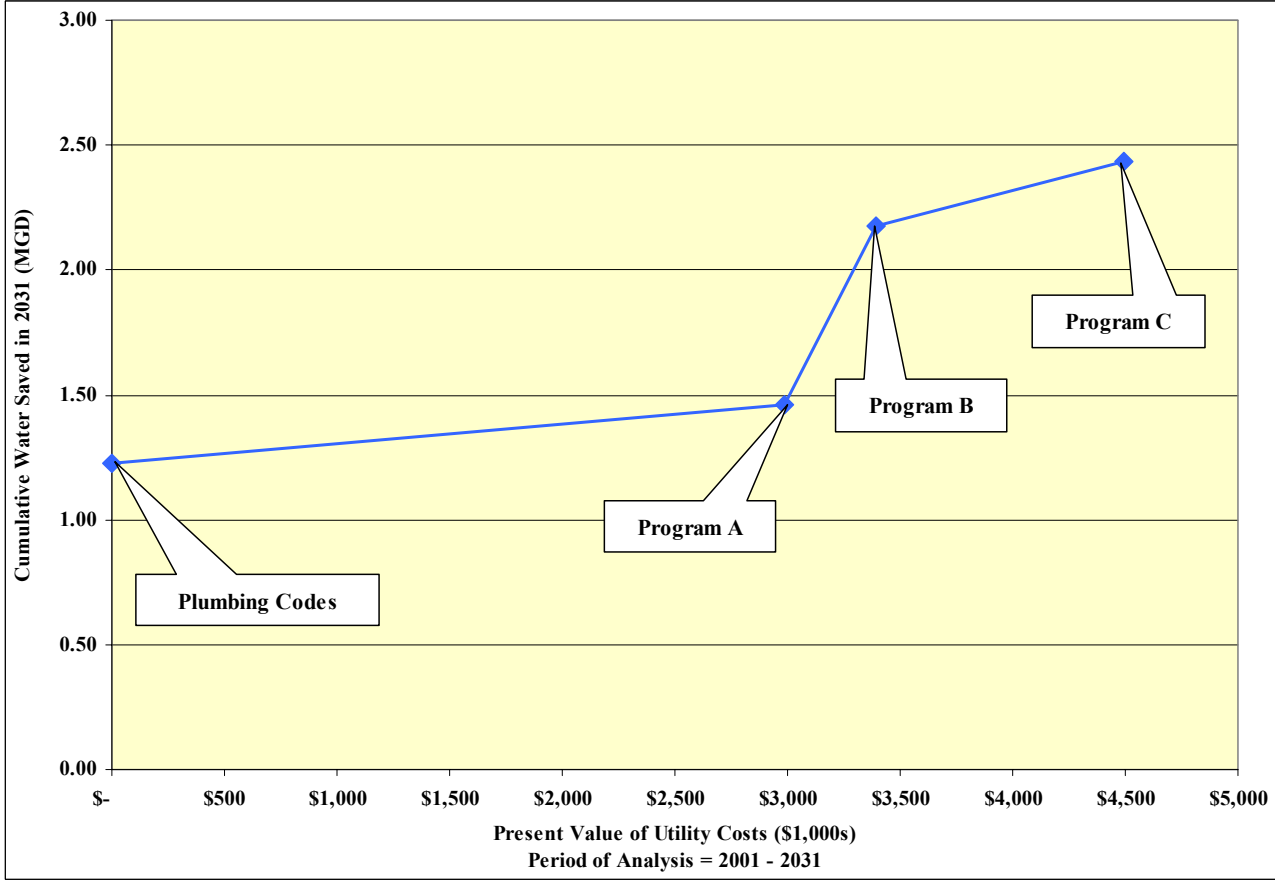
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Mountain View  
June 11, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           |           | X         |                |
| Homeowner irrigation classes  | 15                           |           |           |           | X              |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | X              |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | X              |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           |           | X              |
| Rebate efficient clothes washers  | 20                           |           |           | X         |                |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           | X         | X         |                |
| Restaurant low flow spray rinse nozzles   | 22                           | X         | X         | X         |                |
| Focused water audits for hotels/motels  | 23                           |           |           | X         |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | X              |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | X              |
| Award program for water savings by businesses   | 26                           |           |           | X         |                |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Mountain View  
June 11, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           |           | <b>X</b>       |
| Financial incentives for complying with water use budget | 29                           |           | <b>X</b>  | <b>X</b>  |                |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | <b>X</b>       |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | <b>X</b>       |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>9</b>  | <b>12</b> | <b>17</b> | <b>15</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
City of Mountain View  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$2,986          | \$3,391          | \$4,494          |
| <b>Cumulative Water Saved (MGD)</b>      | 1.23                 | 1.46             | 2.17             | 2.44             |

**Appendix D20**  
**North Coast County Water District**

**FINAL Results of Conservation Measures Evaluation  
North Coast County Water District  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.2                              | 1.5                                | 0.016                                 | \$1,676                                 | \$56,530            | \$77,572                      |
| 2                    | Residential Retrofit  | 3.3                              | 8.7                                | 0.007                                 | \$643                                   | \$109,694           | \$49,715                      |
| 3                    | Large Landscape Conservation  | 1.6                              | 1.3                                | 0.005                                 | \$1,200                                 | \$44,912            | \$20,857                      |
| 4                    | Water Budgets   | 7.8                              | 7.8                                | 0.005                                 | \$256                                   | \$90,042            | \$12,701                      |
| 5                    | Clothes Washer Rebate   | 2.6                              | 2.3                                | 0.006                                 | \$813                                   | \$89,998            | \$60,585                      |
| 6                    | Public Information Program  | 1.4                              | 2.4                                | 0.022                                 | \$1,434                                 | \$154,959           | \$97,156                      |
| 7                    | Commercial Water Audits   | 0.8                              | 0.7                                | 0.003                                 | \$2,517                                 | (\$21,932)          | \$59,347                      |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 8.8                              | 4.9                                | 0.001                                 | \$239                                   | \$13,497            | \$1,946                       |
| 9                    | Residential ULF Toilet Rebate   | 1.4                              | 0.6                                | 0.060                                 | \$1,453                                 | \$375,563           | \$605,024                     |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10.5                             | 0.8                                | 0.074                                 | \$192                                   | \$1,523,586         | \$97,883                      |
| 11                   | Home Leak Detection and Repair  | 0.5                              | 0.5                                | 0.004                                 | \$4,638                                 | (\$96,598)          | \$121,006                     |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 2.1                              | 1.5                                | 0.057                                 | \$965                                   | \$656,989           | \$358,966                     |
| 13                   | ET Controller Rebates   | 0.8                              | 0.5                                | 0.007                                 | \$2,336                                 | (\$39,173)          | \$59,242                      |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 4.4                              | 0.4                                | 0.025                                 | \$430                                   | \$415,077           | \$33,000                      |
| 15                   | Homeowner irrigation classes  | 5.0                              | 0.4                                | 0.029                                 | \$373                                   | \$490,580           | \$33,000                      |
| 16                   | Promote water efficient plantings at new homes  | 0.6                              | 0.1                                | 0.000                                 | \$2,836                                 | (\$4,669)           | \$4,299                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 3.6                              | 2.9                                | 0.002                                 | \$563                                   | \$39,238            | \$15,750                      |
| 18                   | Incentives for retrofitting sub-metering  | 1.6                              | 0.5                                | 0.001                                 | \$1,215                                 | \$4,669             | \$4,365                       |
| 19                   | Require sub-metering multifamily units  | 2.8                              | 0.8                                | 0.003                                 | \$661                                   | \$41,402            | \$7,468                       |
| 20                   | Rebate efficient clothes washers  | 9.3                              | 18.1                               | 0.004                                 | \$225                                   | \$92,908            | \$11,850                      |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 7.2                              | 1.0                                | 0.002                                 | \$254                                   | \$41,620            | \$2,296                       |



**FINAL Results of Conservation Measures Evaluation  
North Coast County Water District  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 41.1                               | 0.005                                 | \$134                                   | \$102,674           | \$7,962                       |
| 23                   | Focused water audits for hotels/motels                   | 7.0                              | 4.5                                | 0.003                                 | \$280                                   | \$57,084            | \$5,625                       |
| 24                   | WAVE Program (US EPA) for hotels                         | 37.8                             | 1.7                                | 0.000                                 | \$52                                    | \$4,327             | \$69                          |
| 25                   | Hotel retrofit (w/financial assistance)                  | 7.5                              | 4.2                                | 0.002                                 | \$259                                   | \$30,828            | \$2,775                       |
| 26                   | Award program for water savings by businesses            |                                  |                                    |                                       |   |                     |                               |
| 27                   | Replace inefficient water using equipment                | 0.0                              | 0.0                                | 0.000                                 | \$54,228                                | (\$25,761)          | \$15,166                      |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 9.3                              | 9.3                                | 0.000                                 | \$204                                   | \$7,953             | \$355                         |
| 29                   | Financial incentives for complying with water use budget | 3.1                              | 1.1                                | 0.003                                 | \$623                                   | \$39,598            | \$11,702                      |
| 30                   | Financial incentives for irrigation upgrades             | 1.2                              | 0.7                                | 0.000                                 | \$1,562                                 | \$780               | \$1,573                       |
| 31                   | Require dedicated irrigation meters for new accounts     | 3.7                              | 0.4                                | 0.001                                 | \$494                                   | \$22,277            | \$596                         |
| 32                   | Water Utility / City Department water reduction goals    |                                  |                                    |                                       |   |                     |                               |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
North Coast County Water District  
June 11, 2004**

| Description of Conservation Activity                      | Corresponding Measure Number |
|---|------------------------------|
| Residential Water Surveys (CA BMP 1)                      | 1                            |
| Residential Retrofit (CA BMP 2)                           | 2                            |
| Large Landscape Conservation Audits (CA BMP 5)            | 3                            |
| Water Budgets (CA BMP 5)                                  | 4                            |
| Clothes Washer Rebate (CA BMP 6)                          | 5                            |
| Public Information Program (CA BMP 7)                     | 6                            |
| Residential ULF Toilet Rebates (CA BMP 14)                | 9                            |
| Conservation Pricing (CA BMP 11)                          | None <sup>1</sup>            |
| System Water Audits, Leak Detection and Repair (CA BMP 3) | None <sup>1</sup>            |
| Metering with Commodity Rates(CA BMP 4)                   | None <sup>1</sup>            |
| Conservation Coordinator (CA BMP 12)                      | None <sup>1</sup>            |
| Water Waste Prohibition (CA BMP 13)                       | None <sup>1</sup>            |

<sup>1</sup>Measure not evaluated in model.

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
North Coast County Water District  
June 11, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Residential Retrofit  | 2                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Large Landscape Conservation Audits   | 3                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Water Budgets   | 4                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Clothes Washer Rebate   | 5                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Public Information Program  | 6                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Commercial Water Audits   | 7                            |           |           |           | <b>X</b>       |
| ULF Toilet and Urinal Rebates   | 8                            |           |           | <b>X</b>  |                |
| Residential ULF Toilet Rebate   | 9                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | <b>X</b>       |
| Home Leak Detection and Repair  | 11                           |           |           |           | <b>X</b>       |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           | <b>X</b>  |                |
| ET Controller Rebates   | 13                           |           |           |           | <b>X</b>       |

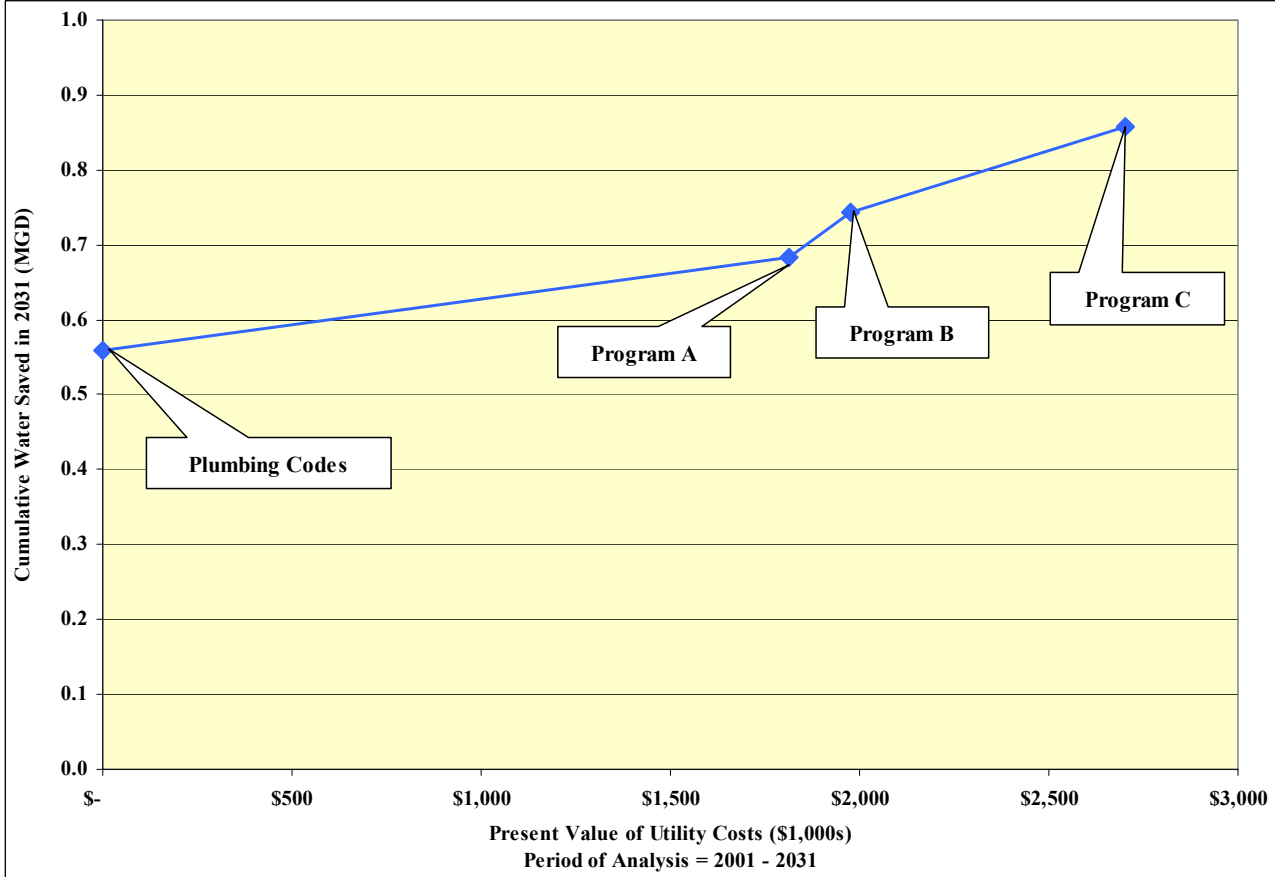
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
North Coast County Water District  
June 11, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           | X         | X         |                |
| Homeowner irrigation classes  | 15                           |           |           | X         |                |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | X              |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           | X         |                |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           |           | X              |
| Rebate efficient clothes washers  | 20                           |           | X         | X         |                |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           | X         |                |
| Restaurant low flow spray rinse nozzles   | 22                           |           | X         | X         |                |
| Focused water audits for hotels/motels  | 23                           |           | X         | X         |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | X              |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           | X         |                |
| Award program for water savings by businesses   | 26                           |           |           |           | X              |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
North Coast County Water District  
June 11, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           |           | <b>X</b>       |
| Financial incentives for complying with water use budget | 29                           |           | <b>X</b>  | <b>X</b>  |                |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | <b>X</b>       |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | <b>X</b>       |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>7</b>  | <b>12</b> | <b>18</b> | <b>14</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
North Coast County Water District  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$1,814          | \$1,975          | \$2,704          |
| <b>Cumulative Water Saved (MGD)</b>      | 0.56                 | 0.68             | 0.74             | 0.86             |

**Appendix D21**  
**Palo Alto, City of**

**FINAL Results of Conservation Measures Evaluation  
City of Palo Alto  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.9                              | 2.0                                | 0.046                                 | \$1,049                                 | \$482,098           | \$138,080                     |
| 2                    | Residential Retrofit  | 3.0                              | 6.7                                | 0.021                                 | \$703                                   | \$324,902           | \$169,797                     |
| 3                    | Large Landscape Conservation  | 1.5                              | 1.3                                | 0.049                                 | \$1,253                                 | \$378,720           | \$196,141                     |
| 4                    | Water Budgets   |                                  |                                    |                                       |   |                     |                               |
| 5                    | Clothes Washer Rebate   | 2.5                              | 1.9                                | 0.012                                 | \$842                                   | \$168,072           | \$119,838                     |
| 6                    | Public Information Program  | 4.4                              | 5.9                                | 0.053                                 | \$467                                   | \$959,753           | \$76,479                      |
| 7                    | Commercial Water Audits   | 2.5                              | 2.0                                | 0.078                                 | \$785                                   | \$1,033,404         | \$428,534                     |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 21.8                             | 12.1                               | 0.010                                 | \$96                                    | \$228,125           | \$12,361                      |
| 9                    | Residential ULF Toilet Rebate   | 1.3                              | 0.6                                | 0.078                                 | \$1,502                                 | \$447,117           | \$818,305                     |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10.6                             | 0.8                                | 0.122                                 | \$187                                   | \$2,453,335         | \$132,383                     |
| 11                   | Home Leak Detection and Repair  | 0.8                              | 0.8                                | 0.009                                 | \$3,304                                 | (\$79,798)          | \$190,010                     |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 2.1                              | 1.5                                | 0.099                                 | \$968                                   | \$1,145,519         | \$631,506                     |
| 13                   | ET Controller Rebates   | 2.0                              | 1.4                                | 0.031                                 | \$940                                   | \$316,199           | \$107,703                     |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 22.6                             | 1.4                                | 0.067                                 | \$81                                    | \$1,333,252         | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 10.5                             | 0.6                                | 0.032                                 | \$173                                   | \$589,006           | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 1.8                              | 0.2                                | 0.001                                 | \$1,030                                 | \$13,841            | \$6,600                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 3.6                              | 6.5                                | 0.005                                 | \$566                                   | \$77,875            | \$31,500                      |
| 18                   | Incentives for retrofitting sub-metering  | 1.2                              | 0.3                                | 0.001                                 | \$1,650                                 | \$4,950             | \$15,191                      |
| 19                   | Require sub-metering multifamily units  | 2.2                              | 0.5                                | 0.010                                 | \$848                                   | \$111,501           | \$35,378                      |
| 20                   | Rebate efficient clothes washers  | 8.4                              | 0.1                                | 0.045                                 | \$249                                   | \$943,342           | \$134,950                     |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 18.8                             | 1.3                                | 0.007                                 | \$98                                    | \$140,421           | \$2,487                       |



**FINAL Results of Conservation Measures Evaluation  
City of Palo Alto  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.3                             | 34.5                               | 0.023                                 | \$132                                   | \$484,332           | \$36,967                      |
| 23                   | Focused water audits for hotels/motels                   | 14.1                             | 14.6                               | 0.043                                 | \$138                                   | \$877,803           | \$39,375                      |
| 24                   | WAVE Program (US EPA) for hotels                         | 76.5                             | 5.4                                | 0.003                                 | \$25                                    | \$62,173            | \$483                         |
| 25                   | Hotel retrofit (w/financial assistance)                  | 9.4                              | 8.4                                | 0.023                                 | \$207                                   | \$450,513           | \$31,350                      |
| 26                   | Award program for water savings by businesses            | 4.3                              | 1.0                                | 0.007                                 | \$426                                   | \$108,024           | \$10,350                      |
| 27                   | Replace inefficient water using equipment                | 0.6                              | 0.1                                | 0.006                                 | \$3,414                                 | (\$93,683)          | \$126,706                     |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 25.6                             | 25.6                               | 0.000                                 | \$73                                    | \$6,454             | \$76                          |
| 29                   | Financial incentives for complying with water use budget |                                  |                                    |                                       |   |                     |                               |
| 30                   | Financial incentives for irrigation upgrades             | 2.9                              | 1.6                                | 0.001                                 | \$636                                   | \$9,925             | \$1,699                       |
| 31                   | Require dedicated irrigation meters for new accounts     | 14.0                             | 1.8                                | 0.005                                 | \$132                                   | \$103,466           | \$529                         |
| 32                   | Water Utility / City Department water reduction goals    | 18.3                             | 4.1                                | 0.014                                 | \$106                                   | \$285,715           | \$9,572                       |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
City of Palo Alto  
June 29, 2004**

| Description of Conservation Activity                      | Corresponding Measure Number |
|---|------------------------------|
| Residential Water Surveys (CA BMP 1)                      | 1                            |
| Residential Retrofit (CA BMP 2)                           | 2                            |
| Clothes Washer Rebate (CA BMP 6)                          | 5                            |
| Public Information Program (CA BMP 7)                     | 6                            |
| ETcontroller Rebates                                      | 13                           |
| Restaurant Low Flow Spray Rinse Nozzles (CA BMP 9)        | 22                           |
| Conservation Pricing (CA BMP 11)                          | None <sup>1</sup>            |
| System Water Audits, Leak Detection and Repair (CA BMP 3) | None <sup>1</sup>            |
| High-efficiency dishwasher Rebate Program                 | None <sup>1</sup>            |

<sup>1</sup>Measure not evaluated in model

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Palo Alto  
August 9, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Residential Retrofit  | 2                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Large Landscape Conservation Audits   | 3                            |           | <b>X</b>  | <b>X</b>  |                |
| Water Budgets   | 4                            |           |           |           | <b>X</b>       |
| Clothes Washer Rebate   | 5                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Public Information Program  | 6                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Commercial Water Audits   | 7                            |           |           | <b>X</b>  |                |
| ULF Toilet and Urinal Rebates   | 8                            |           |           | <b>X</b>  |                |
| Residential ULF Toilet Rebate   | 9                            |           |           |           | <b>X</b>       |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | <b>X</b>       |
| Home Leak Detection and Repair  | 11                           |           |           |           | <b>X</b>       |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           | <b>X</b>  | <b>X</b>  |                |
| ET Controller Rebates   | 13                           | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           |           |           | <b>X</b>       |

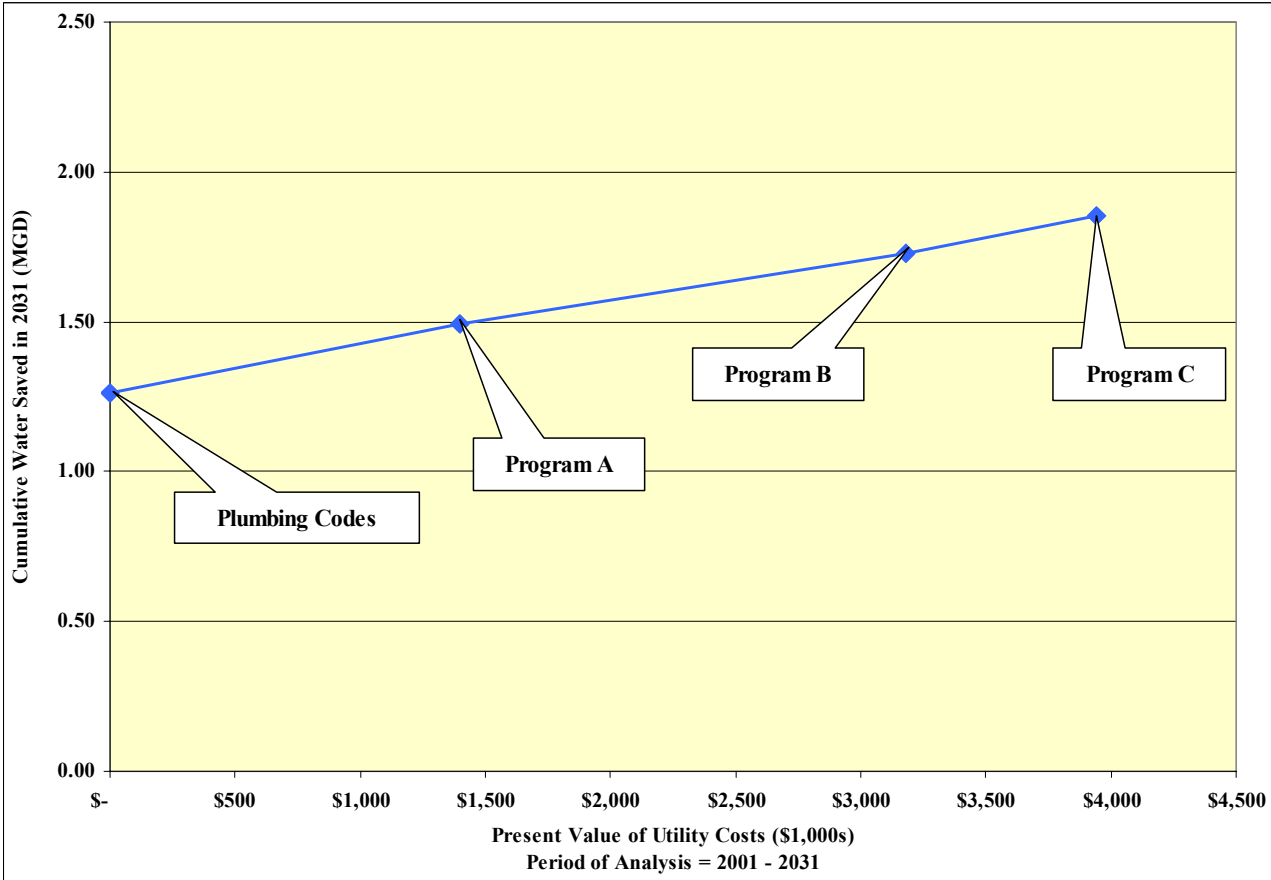
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Palo Alto  
August 9, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Homeowner irrigation classes  | 15                           |           |           |           | X              |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | X              |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           | X         |                |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           |           | X              |
| Rebate efficient clothes washers  | 20                           |           |           |           | X              |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           |           | X              |
| Restaurant low flow spray rinse nozzles   | 22                           | X         | X         | X         |                |
| Focused water audits for hotels/motels  | 23                           |           | X         | X         |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | X              |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | X              |
| Award program for water savings by businesses   | 26                           |           |           | X         |                |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |
| Require 0.5 gal/flush urinals in new buildings  | 28                           |           |           |           | X              |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Palo Alto  
August 9, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Financial incentives for complying with water use budget | 29                           |           |           |           | <b>X</b>       |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | <b>X</b>       |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | <b>X</b>       |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>6</b>  | <b>9</b>  | <b>13</b> | <b>19</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
City of Palo Alto  
August 9, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$1,396          | \$3,179          | \$3,943          |
| <b>Cumulative Water Saved (MGD)</b>      | 1.26                 | 1.49             | 1.73             | 1.85             |

**Appendix D22**  
**Purissima Hills Water District**

**FINAL Results of Conservation Measures Evaluation  
Purissima Hills Water District  
August 30, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 5.9                              | 5.6                                | 0.017                                 | \$329                                   | \$303,948           | \$16,092                      |
| 2                    | Residential Retrofit  | 2.7                              | 6.8                                | 0.002                                 | \$785                                   | \$27,555            | \$17,229                      |
| 3                    | Large Landscape Conservation  | 1.5                              | 1.3                                | 0.003                                 | \$1,280                                 | \$23,080            | \$12,713                      |
| 4                    | Water Budgets   | 12.5                             | 12.5                               | 0.139                                 | \$153                                   | \$2,768,802         | \$152,245                     |
| 5                    | Clothes Washer Rebate   | 2.5                              | 2.2                                | 0.001                                 | \$838                                   | \$13,877            | \$9,991                       |
| 6                    | Public Information Program  | 6.7                              | 7.6                                | 0.022                                 | \$302                                   | \$428,819           | \$21,514                      |
| 7                    | Commercial Water Audits   | 4.0                              | 3.2                                | 0.004                                 | \$486                                   | \$68,992            | \$14,166                      |
| 8                    | Commercial ULF Toilet and Urinal Rebates  |                                  |                                    |                                       |   |                     |                               |
| 9                    | Residential ULF Toilet Rebate   | 1.6                              | 0.7                                | 0.013                                 | \$1,235                                 | \$116,639           | \$120,782                     |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 13.5                             | 1.0                                | 0.016                                 | \$151                                   | \$343,625           | \$19,543                      |
| 11                   | Home Leak Detection and Repair  | 1.4                              | 1.4                                | 0.002                                 | \$1,768                                 | \$18,973            | \$26,819                      |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 2.6                              | 1.9                                | 0.014                                 | \$751                                   | \$185,338           | \$67,048                      |
| 13                   | ET Controller Rebates   | 7.5                              | 5.2                                | 0.014                                 | \$244                                   |                     | \$12,423                      |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            |                                  |                                    |                                       |   |                     |                               |
| 15                   | Homeowner irrigation classes  |                                  |                                    |                                       |   |                     |                               |
| 16                   | Promote water efficient plantings at new homes  | 13.8                             | 1.5                                | 0.005                                 | \$133                                   |                     | \$2,428                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              |                                  |                                    |                                       |   |                     |                               |
| 18                   | Incentives for retrofitting sub-metering  |                                  |                                    |                                       |   |                     |                               |
| 19                   | Require sub-metering multifamily units  |                                  |                                    |                                       |   |                     |                               |
| 20                   | Rebate efficient clothes washers  |                                  |                                    |                                       |   |                     |                               |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 35.5                             | 5.0                                | 0.000                                 | \$50                                    | \$7,253             | \$44                          |



**FINAL Results of Conservation Measures Evaluation  
Purissima Hills Water District  
August 30, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  |                                  |                                    |                                       |   |                     |                               |
| 23                   | Focused water audits for hotels/motels                   |                                  |                                    |                                       |   |                     |                               |
| 24                   | WAVE Program (US EPA) for hotels                         |                                  |                                    |                                       |   |                     |                               |
| 25                   | Hotel retrofit (w/financial assistance)                  |                                  |                                    |                                       |   |                     |                               |
| 26                   | Award program for water savings by businesses            |                                  |                                    |                                       |   |                     |                               |
| 27                   | Replace inefficient water using equipment                | 0.8                              | 0.2                                | 0.000                                 | \$2,334                                 | (\$1,034)           | \$3,620                       |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 5.0                              | 5.0                                | 0.000                                 | \$361                                   |                     | \$15                          |
| 29                   | Financial incentives for complying with water use budget |                                  |                                    |                                       |   |                     |                               |
| 30                   | Financial incentives for irrigation upgrades             |                                  |                                    |                                       |   |                     |                               |
| 31                   | Require dedicated irrigation meters for new accounts     | 21.7                             | 2.6                                | 0.000                                 | \$82                                    |                     | \$11                          |
| 32                   | Water Utility / City Department water reduction goals    |                                  |                                    |                                       |   |                     |                               |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
Purissima Hills Water District  
August 30, 2004**

| <b>Description of Conservation Activity</b>               | <b>Corresponding Measure Number</b> |
|---|-------------------------------------|
| Residential Water Surveys (CA BMP 1)                      | 1                                   |
| Residential Retrofit (CA BMP 2)                           | 2                                   |
| Public Information Program (CA BMP 7)                     | 6                                   |
| Conservation Pricing (CA BMP 11)                          | Other                               |
| System Water Audits, Leak Detection and Repair (CA BMP 3) | Other                               |
| Metering with Commodity Rates (CA BMP 4)                  | Other                               |
| Water Waste Prohibition (CA BMP 13)                       | Other                               |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Purissima Hills Water District  
August 30, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | None     |
|---|------------------------------|-----------|-----------|-----------|----------|
| Residential Water Surveys   | 1                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |          |
| Residential Retrofit  | 2                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |          |
| Large Landscape Conservation Audits   | 3                            |           |           |           | <b>X</b> |
| Water Budgets   | 4                            |           |           | <b>X</b>  |          |
| Clothes Washer Rebate   | 5                            |           |           |           | <b>X</b> |
| Public Information Program  | 6                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |          |
| Commercial Water Audits   | 7                            |           |           |           | <b>X</b> |
| ULF Toilet and Urinal Rebates   | 8                            |           |           |           | <b>X</b> |
| Residential ULF Toilet Rebate   | 9                            |           |           |           | <b>X</b> |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | <b>X</b> |
| Home Leak Detection and Repair  | 11                           |           |           |           | <b>X</b> |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           |           | <b>X</b> |
| ET Controller Rebates   | 13                           |           | <b>X</b>  | <b>X</b>  |          |

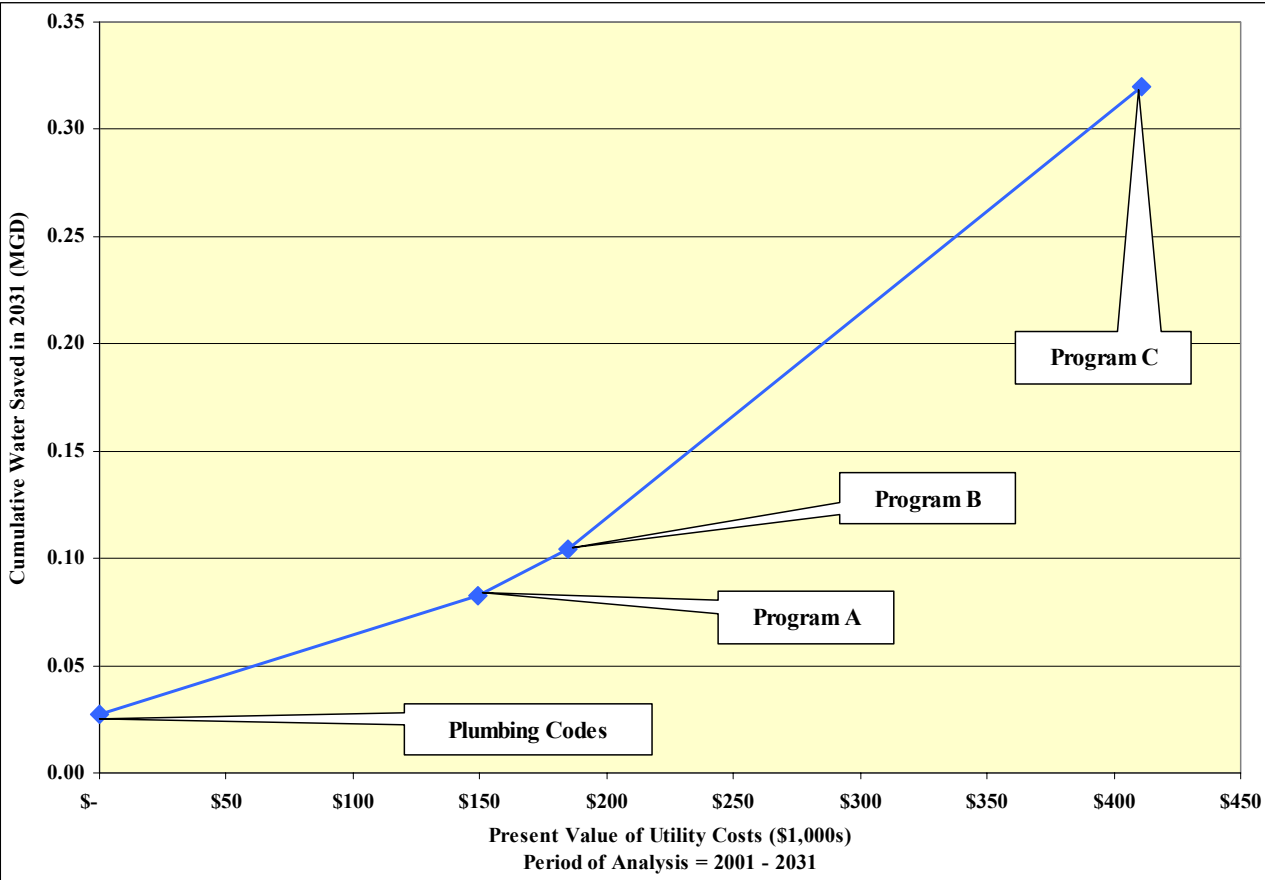
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Purissima Hills Water District  
August 30, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | None     |
|---|------------------------------|-----------|-----------|-----------|----------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           |           |           | <b>X</b> |
| Homeowner irrigation classes  | 15                           |           |           |           | <b>X</b> |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | <b>X</b> |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | <b>X</b> |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | <b>X</b> |
| Require sub-metering multifamily units  | 19                           |           |           |           | <b>X</b> |
| Rebate efficient clothes washers  | 20                           |           |           |           | <b>X</b> |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           |           | <b>X</b> |
| Restaurant low flow spray rinse nozzles   | 22                           |           |           |           | <b>X</b> |
| Focused water audits for hotels/motels  | 23                           |           |           |           | <b>X</b> |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | <b>X</b> |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | <b>X</b> |
| Award program for water savings by businesses   | 26                           |           |           |           | <b>X</b> |
| Replace inefficient water using equipment   | 27                           |           |           |           | <b>X</b> |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Purissima Hills Water District  
August 30, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | None      |
|--|------------------------------|-----------|-----------|-----------|-----------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           |           | <b>X</b>  |
| Financial incentives for complying with water use budget | 29                           |           |           |           | <b>X</b>  |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | <b>X</b>  |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>  |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | <b>X</b>  |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>3</b>  | <b>4</b>  | <b>5</b>  | <b>27</b> |

**FINAL Present Value of Utility Costs Versus Water Saved  
Purissima Hills Water District  
August 30, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$149            | \$185            | \$411            |
| <b>Cumulative Water Saved (MGD)</b>      | 0.03                 | 0.08             | 0.10             | 0.32             |

**Appendix D23**  
**Redwood City, City of**

**FINAL Results of Conservation Measures Evaluation  
City of Redwood City  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.6                              | 2.0                                | 0.046                                 | \$1,230                                 | \$391,511           | \$164,282                     |
| 2                    | Residential Retrofit  | 2.8                              | 7.5                                | 0.032                                 | \$744                                   | \$484,038           | \$277,610                     |
| 3                    | Large Landscape Conservation  | 1.6                              | 1.4                                | 0.015                                 | \$1,180                                 | \$124,742           | \$55,679                      |
| 4                    | Water Budgets   | 61.0                             | 61.0                               | 0.172                                 | \$32                                    | \$3,799,502         | \$53,076                      |
| 5                    | Clothes Washer Rebate   | 2.5                              | 2.2                                | 0.015                                 | \$838                                   | \$217,362           | \$153,489                     |
| 6                    | Public Information Program  | 1.6                              | 2.5                                | 0.043                                 | \$1,342                                 | \$356,950           | \$187,025                     |
| 7                    | Commercial Water Audits   | 1.7                              | 1.5                                | 0.043                                 | \$1,153                                 | \$387,447           | \$339,944                     |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 12.6                             | 7.0                                | 0.005                                 | \$166                                   | \$115,332           | \$11,177                      |
| 9                    | Residential ULF Toilet Rebate   | 1.3                              | 0.6                                | 0.189                                 | \$1,652                                 | \$894,014           | \$3,078,469                   |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 7.7                              | 0.6                                | 0.241                                 | \$264                                   | \$4,813,084         | \$498,656                     |
| 11                   | Home Leak Detection and Repair  | 0.6                              | 0.6                                | 0.008                                 | \$4,206                                 | (\$161,406)         | \$233,653                     |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 2.1                              | 1.5                                | 0.133                                 | \$949                                   | \$1,552,133         | \$814,927                     |
| 13                   | ET Controller Rebates   | 1.8                              | 1.3                                | 0.034                                 | \$999                                   | \$325,749           | \$126,960                     |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 13.5                             | 0.8                                | 0.040                                 | \$136                                   | \$771,574           | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 6.2                              | 0.4                                | 0.019                                 | \$292                                   | \$324,342           | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 1.2                              | 0.1                                | 0.000                                 | \$1,563                                 | \$633               | \$1,505                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 3.6                              | 7.8                                | 0.008                                 | \$569                                   | \$135,505           | \$55,125                      |
| 18                   | Incentives for retrofitting sub-metering  | 1.4                              | 0.5                                | 0.002                                 | \$1,378                                 | \$11,214            | \$14,305                      |
| 19                   | Require sub-metering multifamily units  | 2.8                              | 0.7                                | 0.059                                 | \$683                                   | \$801,885           | \$181,187                     |
| 20                   | Rebate efficient clothes washers  | 9.2                              | 17.9                               | 0.001                                 | \$228                                   | \$20,315            | \$2,625                       |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 10.7                             | 1.5                                | 0.036                                 | \$172                                   | \$676,208           | \$25,639                      |



**FINAL Results of Conservation Measures Evaluation  
City of Redwood City  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.2                             | 41.5                               | 0.018                                 | \$133                                   | \$375,473           | \$28,818                      |
| 23                   | Focused water audits for hotels/motels                   | 9.4                              | 6.2                                | 0.014                                 | \$207                                   | \$269,612           | \$18,750                      |
| 24                   | WAVE Program (US EPA) for hotels                         | 166.7                            | 7.3                                | 0.003                                 | \$12                                    | \$64,993            | \$230                         |
| 25                   | Hotel retrofit (w/financial assistance)                  | 1.9                              | 1.1                                | 0.007                                 | \$1,009                                 | \$77,525            | \$48,863                      |
| 26                   | Award program for water savings by businesses            | 3.5                              | 0.8                                | 0.007                                 | \$523                                   | \$96,987            | \$10,350                      |
| 27                   | Replace inefficient water using equipment                | 0.6                              | 0.1                                | 0.004                                 | \$3,513                                 | (\$78,928)          | \$101,618                     |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 15.3                             | 15.3                               | 0.003                                 | \$121                                   | \$68,377            | \$1,301                       |
| 29                   | Financial incentives for complying with water use budget | 27.3                             | 9.7                                | 0.103                                 | \$71                                    | \$2,187,186         | \$49,628                      |
| 30                   | Financial incentives for irrigation upgrades             | 3.1                              | 1.7                                | 0.002                                 | \$596                                   | \$21,894            | \$3,060                       |
| 31                   | Require dedicated irrigation meters for new accounts     | 3.6                              | 0.4                                | 0.018                                 | \$509                                   | \$270,053           | \$6,455                       |
| 32                   | Water Utility / City Department water reduction goals    | 8.2                              | 1.8                                | 0.001                                 | \$238                                   | \$12,355            | \$996                         |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
Redwood City  
July 22, 2004**

| Description of Conservation Activity                                     | Corresponding Measure Number |
|--|------------------------------|
| Residential Water Surveys (CA BMP 1)                                     | 1                            |
| Residential Retrofit (CA BMP 2)  | 2                            |
| Large Landscape Conservation Audits (CA BMP 5)                           | 3                            |
| Water Budgets (CA BMP 5)   | 4                            |
| Clothes Washer Rebate (CA BMP 6)   | 5                            |
| Public Information Program (CA BMP 7)                                    | 6                            |
| ULF Toilet and Urinal Rebates (CA BMP 9)                                 | 8                            |
| Residential ULF Toilet Rebates (CA BMP 14) <sup>1</sup>                  | 9                            |
| Incentives for replacement of clothes washers in coin-operated laundries | 17                           |
| Rebate efficient clothes washers   | 20                           |
| Restaurant Low Flow Spray Rinse Nozzles (CA BMP 9)                       | 22                           |
| Conservation Pricing (CA BMP 11)   | None <sup>2</sup>            |
| System Water Audits, Leak Detection and Repair (CA BMP 3)                | None <sup>2</sup>            |
| Artificial Turf Replacement  | None <sup>2</sup>            |

<sup>1</sup>Residential ULF Toilet Program has not been implemented to date but is currently planned for FY 2004/2005

<sup>2</sup>Measure not evaluated in model

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Redwood City  
July 22, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Residential Retrofit  | 2                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Large Landscape Conservation Audits   | 3                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Water Budgets   | 4                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Clothes Washer Rebate   | 5                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Public Information Program  | 6                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Commercial Water Audits   | 7                            |           | <b>X</b>  | <b>X</b>  |                |
| ULF Toilet and Urinal Rebates   | 8                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Residential ULF Toilet Rebate   | 9                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | <b>X</b>       |
| Home Leak Detection and Repair  | 11                           |           |           |           | <b>X</b>       |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           | <b>X</b>  |                |
| ET Controller Rebates   | 13                           |           | <b>X</b>  | <b>X</b>  |                |

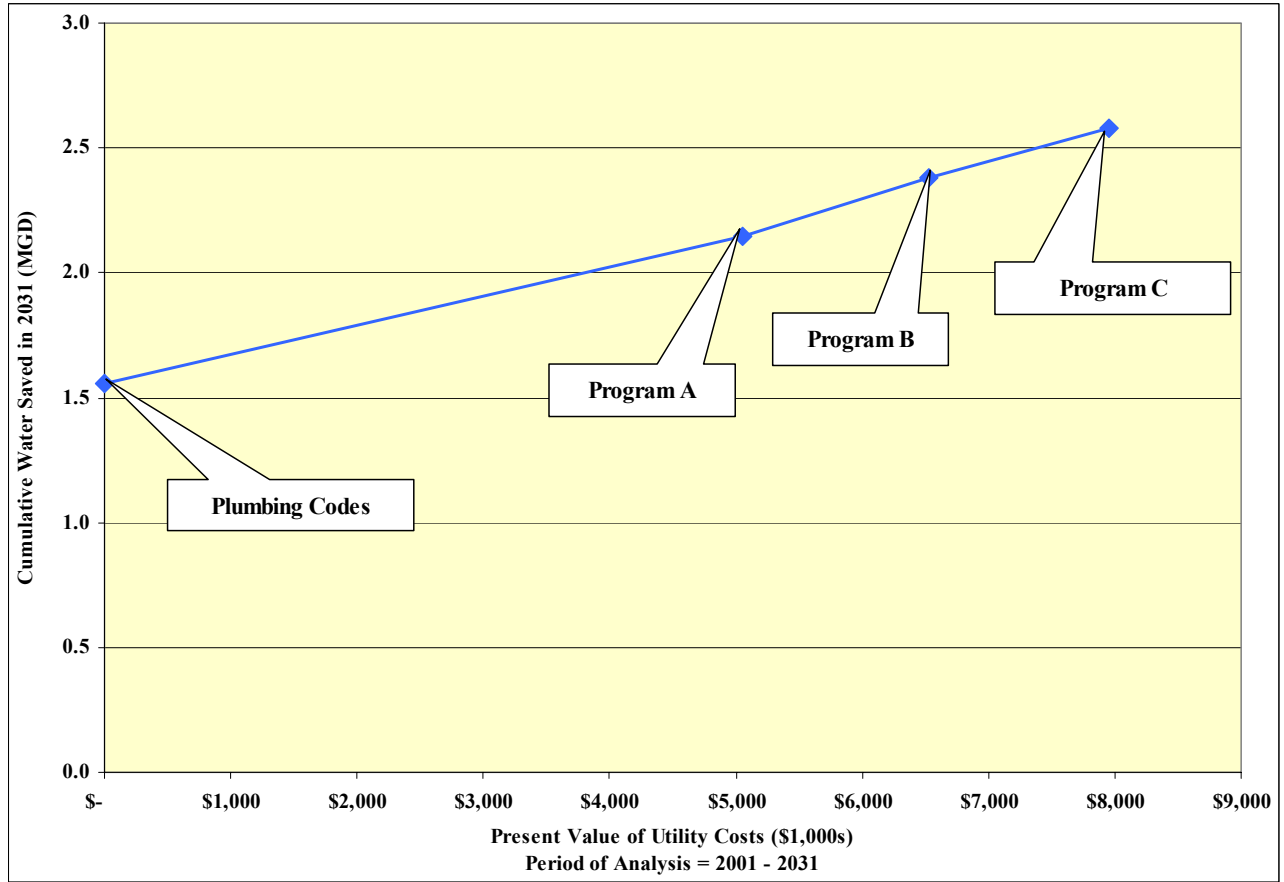
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Redwood City  
July 22, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           |           |           | <b>X</b>       |
| Homeowner irrigation classes  | 15                           |           |           |           | <b>X</b>       |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | <b>X</b>       |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | <b>X</b>       |
| Require sub-metering multifamily units  | 19                           |           |           |           | <b>X</b>       |
| Rebate efficient clothes washers  | 20                           | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           | <b>X</b>  |                |
| Restaurant low flow spray rinse nozzles   | 22                           | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Focused water audits for hotels/motels  | 23                           |           |           |           | <b>X</b>       |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | <b>X</b>       |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | <b>X</b>       |
| Award program for water savings by businesses   | 26                           |           |           |           | <b>X</b>       |
| Replace inefficient water using equipment   | 27                           |           |           |           | <b>X</b>       |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Redwood City  
July 22, 2004**

| Description of Conservation Activity   | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings   | 28                           |           |           | <b>X</b>  |                |
| Financial incentives for complying with water use budget   | 29                           |           | <b>X</b>  | <b>X</b>  |                |
| Financial incentives for irrigation upgrades   | 30                           |           | <b>X</b>  | <b>X</b>  |                |
| Require dedicated irrigation meters for new accounts<br>Note: This measure only applies to agencies that do not currently require irrigation meters. | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals  | 32                           |           |           |           | <b>X</b>       |
| <b>TOTAL NUMBER OF MEASURES</b>  |                              | <b>11</b> | <b>15</b> | <b>18</b> | <b>14</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
City of Redwood City  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$5,058          | \$6,533          | \$7,949          |
| <b>Cumulative Water Saved (MGD)</b>      | 1.6                  | 2.1              | 2.4              | 2.6              |

**Appendix D24**  
**San Bruno, City of**

**FINAL Results of Conservation Measures Evaluation  
City of San Bruno  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.0                              | 1.4                                | 0.015                                 | \$1,992                                 | (\$918)             | \$88,092                      |
| 2                    | Residential Retrofit  |                                  |                                    |                                       |   |                     |                               |
| 3                    | Large Landscape Conservation  | 1.7                              | 1.4                                | 0.010                                 | \$1,138                                 | \$87,908            | \$36,258                      |
| 4                    | Water Budgets   |                                  |                                    |                                       |   |                     |                               |
| 5                    | Clothes Washer Rebate   | 2.5                              | 2.2                                | 0.007                                 | \$840                                   | \$101,108           | \$71,886                      |
| 6                    | Public Information Program  | 1.2                              | 2.1                                | 0.018                                 | \$1,715                                 | \$74,025            | \$99,135                      |
| 7                    | Commercial Water Audits   | 0.7                              | 0.7                                | 0.014                                 | \$2,840                                 | (\$143,530)         | \$277,910                     |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 15.8                             | 8.8                                | 0.003                                 | \$133                                   | \$60,415            | \$4,583                       |
| 9                    | Residential ULF Toilet Rebate   | 1.7                              | 1.1                                | 0.055                                 | \$1,159                                 | \$526,676           | \$556,317                     |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 12.2                             | 1.0                                | 0.069                                 | \$165                                   | \$1,439,140         | \$90,020                      |
| 11                   | Home Leak Detection and Repair  | 0.5                              | 0.5                                | 0.004                                 | \$5,171                                 | (\$110,861)         | \$123,267                     |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 2.0                              | 1.4                                | 0.067                                 | \$1,003                                 | \$740,126           | \$434,379                     |
| 13                   | ET Controller Rebates   | 0.6                              | 0.4                                | 0.006                                 | \$3,001                                 | (\$80,799)          | \$66,868                      |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 4.4                              | 0.3                                | 0.013                                 | \$422                                   | \$207,937           | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 2.1                              | 0.1                                | 0.006                                 | \$880                                   | \$66,927            | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 0.4                              | 0.0                                | 0.000                                 | \$4,910                                 | (\$8,421)           | \$6,257                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 3.6                              | 7.7                                | 0.001                                 | \$576                                   | \$18,972            | \$7,875                       |
| 18                   | Incentives for retrofitting sub-metering  | 1.0                              | 0.5                                | 0.001                                 | \$2,058                                 | (\$1,486)           | \$18,807                      |
| 19                   | Require sub-metering multifamily units  | 4.5                              | 0.9                                | 0.006                                 | \$419                                   | \$93,886            | \$12,138                      |
| 20                   | Rebate efficient clothes washers  | 9.2                              | 17.9                               | 0.003                                 | \$228                                   | \$71,268            | \$9,225                       |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 5.0                              | 0.7                                | 0.005                                 | \$361                                   | \$85,426            | \$6,147                       |



**FINAL Results of Conservation Measures Evaluation  
City of San Bruno  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 40.7                               | 0.006                                 | \$134                                   | \$132,872           | \$10,303                      |
| 23                   | Focused water audits for hotels/motels                   | 4.9                              | 5.8                                | 0.004                                 | \$396                                   | \$68,893            | \$10,313                      |
| 24                   | WAVE Program (US EPA) for hotels                         | 26.7                             | 2.1                                | 0.000                                 | \$73                                    | \$5,549             | \$127                         |
| 25                   | Hotel retrofit (w/financial assistance)                  | 5.8                              | 5.9                                | 0.002                                 | \$333                                   | \$38,235            | \$4,625                       |
| 26                   | Award program for water savings by businesses            | 2.5                              | 0.6                                | 0.004                                 | \$740                                   | \$48,252            | \$10,350                      |
| 27                   | Replace inefficient water using equipment                | 0.3                              | 0.1                                | 0.001                                 | \$5,711                                 | (\$41,123)          | \$35,511                      |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 10.0                             | 10.0                               | 0.002                                 | \$180                                   | \$36,071            | \$631                         |
| 29                   | Financial incentives for complying with water use budget |                                  |                                    |                                       |   |                     |                               |
| 30                   | Financial incentives for irrigation upgrades             | 0.7                              | 0.4                                | 0.001                                 | \$2,743                                 | (\$7,869)           | \$6,753                       |
| 31                   | Require dedicated irrigation meters for new accounts     | 3.9                              | 0.5                                | 0.003                                 | \$459                                   | \$45,194            | \$760                         |
| 32                   | Water Utility / City Department water reduction goals    | 3.5                              | 0.8                                | 0.010                                 | \$560                                   | \$153,945           | \$35,819                      |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
City of San Bruno  
July 14, 2004**

| <b>Description of Conservation Activity</b> | <b>Corresponding Measure Number</b> |
|---|-------------------------------------|
| Clothes Washer Rebate (CA BMP 6)            | 5                                   |
| Public Information Program (CA BMP 7)       | 6                                   |
| Conservation Pricing (CA BMP 11)            | None <sup>1</sup>                   |

<sup>1</sup>Measure not evaluated in model.

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of San Bruno  
July 14, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            |           |           |           | <b>X</b>       |
| Residential Retrofit  | 2                            |           |           |           | <b>X</b>       |
| Large Landscape Conservation Audits   | 3                            |           |           | <b>X</b>  |                |
| Water Budgets   | 4                            |           |           |           | <b>X</b>       |
| Clothes Washer Rebate   | 5                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Public Information Program  | 6                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Commercial Water Audits   | 7                            |           |           |           | <b>X</b>       |
| ULF Toilet and Urinal Rebates   | 8                            |           | <b>X</b>  | <b>X</b>  |                |
| Residential ULF Toilet Rebate   | 9                            |           | <b>X</b>  | <b>X</b>  |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | <b>X</b>       |
| Home Leak Detection and Repair  | 11                           |           |           |           | <b>X</b>       |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           | <b>X</b>  | <b>X</b>  |                |
| ET Controller Rebates   | 13                           |           |           |           | <b>X</b>       |

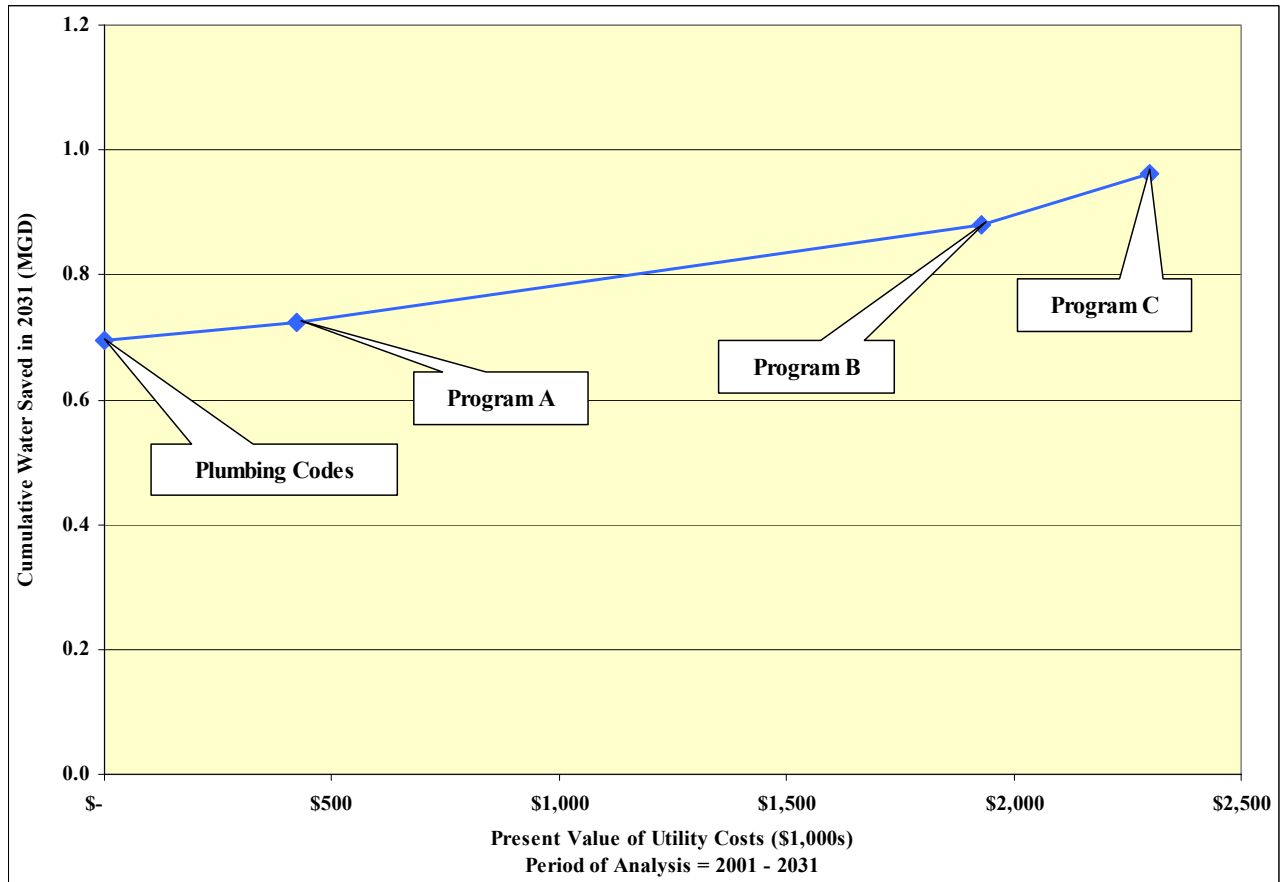
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of San Bruno  
July 14, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           | X         | X         |                |
| Homeowner irrigation classes  | 15                           |           |           | X         |                |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | X              |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | X              |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           | X         |                |
| Rebate efficient clothes washers  | 20                           |           |           | X         |                |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           | X         |                |
| Restaurant low flow spray rinse nozzles   | 22                           |           | X         | X         |                |
| Focused water audits for hotels/motels  | 23                           |           |           | X         |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | X              |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           | X         |                |
| Award program for water savings by businesses   | 26                           |           |           | X         |                |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of San Bruno  
July 14, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           | X         | X         |                |
| Financial incentives for complying with water use budget | 29                           |           |           |           | X              |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | X              |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           | X         |                |
| Water Utility / City Department water reduction goals    | 32                           |           |           | X         |                |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>2</b>  | <b>8</b>  | <b>18</b> | <b>14</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
City of San Bruno  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$422            | \$1,929          | \$2,297          |
| <b>Cumulative Water Saved (MGD)</b>      | 0.70                 | 0.72             | 0.88             | 0.96             |

**Appendix D25**  
**San Jose, City of**

**FINAL Results of Conservation Measures Evaluation  
City of San Jose (North San Jose)  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 2.7                              | 3.6                                | 0.005                                 | \$724                                   | \$72,713            | \$10,414                      |
| 2                    | Residential Retrofit  | 4.8                              | 12.7                               | 0.002                                 | \$438                                   | \$38,270            | \$10,384                      |
| 3                    | Large Landscape Conservation  | 1.7                              | 1.4                                | 0.012                                 | \$1,132                                 | \$103,085           | \$42,006                      |
| 4                    | Water Budgets   | 77.2                             | 77.2                               | 0.210                                 | \$26                                    | \$4,679,188         | \$60,359                      |
| 5                    | Clothes Washer Rebate   | 3.4                              | 3.0                                | 0.002                                 | \$615                                   | \$35,493            | \$15,651                      |
| 6                    | Public Information Program  | 1.4                              | 2.3                                | 0.002                                 | \$1,523                                 | \$15,133            | \$11,728                      |
| 7                    | Commercial Water Audits   | 9.4                              | 8.4                                | 0.058                                 | \$207                                   | \$1,138,759         | \$81,660                      |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 14.9                             | 8.3                                | 0.000                                 | \$141                                   | \$8,436             | \$682                         |
| 9                    | Residential ULF Toilet Rebate   | 1.2                              | 0.5                                | 0.008                                 | \$1,725                                 | \$29,451            | \$115,883                     |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 6.8                              | 0.5                                | 0.010                                 | \$293                                   | \$197,715           | \$18,745                      |
| 11                   | Home Leak Detection and Repair  | 0.6                              | 0.6                                | 0.001                                 | \$4,442                                 | (\$11,127)          | \$14,579                      |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 2.9                              | 2.1                                | 0.016                                 | \$672                                   | \$240,577           | \$71,062                      |
| 13                   | ET Controller Rebates   | 4.0                              | 2.8                                | 0.006                                 | \$458                                   | \$93,936            | \$9,892                       |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 1.9                              | 0.4                                | 0.005                                 | \$1,019                                 | \$58,612            | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 1.2                              | 0.2                                | 0.003                                 | \$1,668                                 | \$10,428            | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 0.5                              | 0.1                                | 0.000                                 | \$3,978                                 | (\$1,066)           | \$804                         |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              |                                  |                                    |                                       |   |                     |                               |
| 18                   | Incentives for retrofitting sub-metering  | 6.0                              | 1.9                                | 0.001                                 | \$326                                   | \$12,055            | \$1,377                       |
| 19                   | Require sub-metering multifamily units  | 11.1                             | 2.9                                | 0.005                                 | \$169                                   | \$98,175            | \$3,889                       |
| 20                   | Rebate efficient clothes washers  | 15.7                             | 30.6                               | 0.006                                 | \$133                                   | \$133,523           | \$9,625                       |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 65.9                             | 9.3                                | 0.027                                 | \$28                                    | \$559,365           | \$2,805                       |



**FINAL Results of Conservation Measures Evaluation  
City of San Jose (North San Jose)  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 41.1                               | 0.001                                 | \$134                                   | \$16,106            | \$1,249                       |
| 23                   | Focused water audits for hotels/motels                   | 3.9                              | 7.0                                | 0.001                                 | \$497                                   | \$23,339            | \$4,688                       |
| 24                   | WAVE Program (US EPA) for hotels                         | 21.3                             | 2.6                                | 0.000                                 | \$91                                    | \$1,991             | \$58                          |
| 25                   | Hotel retrofit (w/financial assistance)                  | 3.1                              | 4.7                                | 0.001                                 | \$621                                   | \$11,382            | \$3,125                       |
| 26                   | Award program for water savings by businesses            |                                  |                                    |                                       |   |                     |                               |
| 27                   | Replace inefficient water using equipment                | 10.4                             | 2.0                                | 0.009                                 | \$186                                   | \$176,598           | \$10,615                      |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 10.6                             | 10.6                               | 0.001                                 | \$176                                   | \$11,139            | \$330                         |
| 29                   | Financial incentives for complying with water use budget | 30.2                             | 10.7                               | 0.129                                 | \$65                                    | \$2,746,011         | \$57,940                      |
| 30                   | Financial incentives for irrigation upgrades             | 9.6                              | 5.3                                | 0.004                                 | \$194                                   | \$70,627            | \$2,592                       |
| 31                   | Require dedicated irrigation meters for new accounts     |                                  |                                    |                                       |   |                     |                               |
| 32                   | Water Utility / City Department water reduction goals    | 47.5                             | 10.6                               | 0.011                                 | \$41                                    | \$235,579           | \$2,906                       |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
City of San Jose (North San Jose)  
June 24, 2004**

| Description of Conservation Activity               | Corresponding Measure Number |
|--|------------------------------|
| Residential Water Surveys (CA BMP 1)               | 1                            |
| Residential Retrofit (CA BMP 2)                    | 2                            |
| Large Landscape Conservation Audits (CA BMP 5)     | 3                            |
| Clothes Washer Rebate (CA BMP 6)                   | 5                            |
| Public Information Program (CA BMP 7)              | 6                            |
| Commercial Water Audits (CA BMP 9)                 | 7                            |
| ULF Toilet and Urinal Rebates (CA BMP 9)           | 8                            |
| Residential ULF Toilet Rebates (CA BMP 14)         | 9                            |
| Rebates for 6/3 dual flush or 4 liter toilets      | 12                           |
| ET Controller Rebates                              | 13                           |
| Restaurant Low Flow Spray Rinse Nozzles (CA BMP 9) | 22                           |
| Replace inefficient water using equipment          | 27                           |
| Financial incentives for irrigation upgrades       | 30                           |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs**  
**City of San Jose (North San Jose)**  
**June 24, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Residential Retrofit  | 2                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Large Landscape Conservation Audits   | 3                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Water Budgets   | 4                            |           |           | <b>X</b>  |                |
| Clothes Washer Rebate   | 5                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Public Information Program  | 6                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Commercial Water Audits   | 7                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| ULF Toilet and Urinal Rebates   | 8                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Residential ULF Toilet Rebate   | 9                            |           |           | <b>X</b>  |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | <b>X</b>       |
| Home Leak Detection and Repair  | 11                           |           |           |           | <b>X</b>       |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| ET Controller Rebates   | 13                           | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |

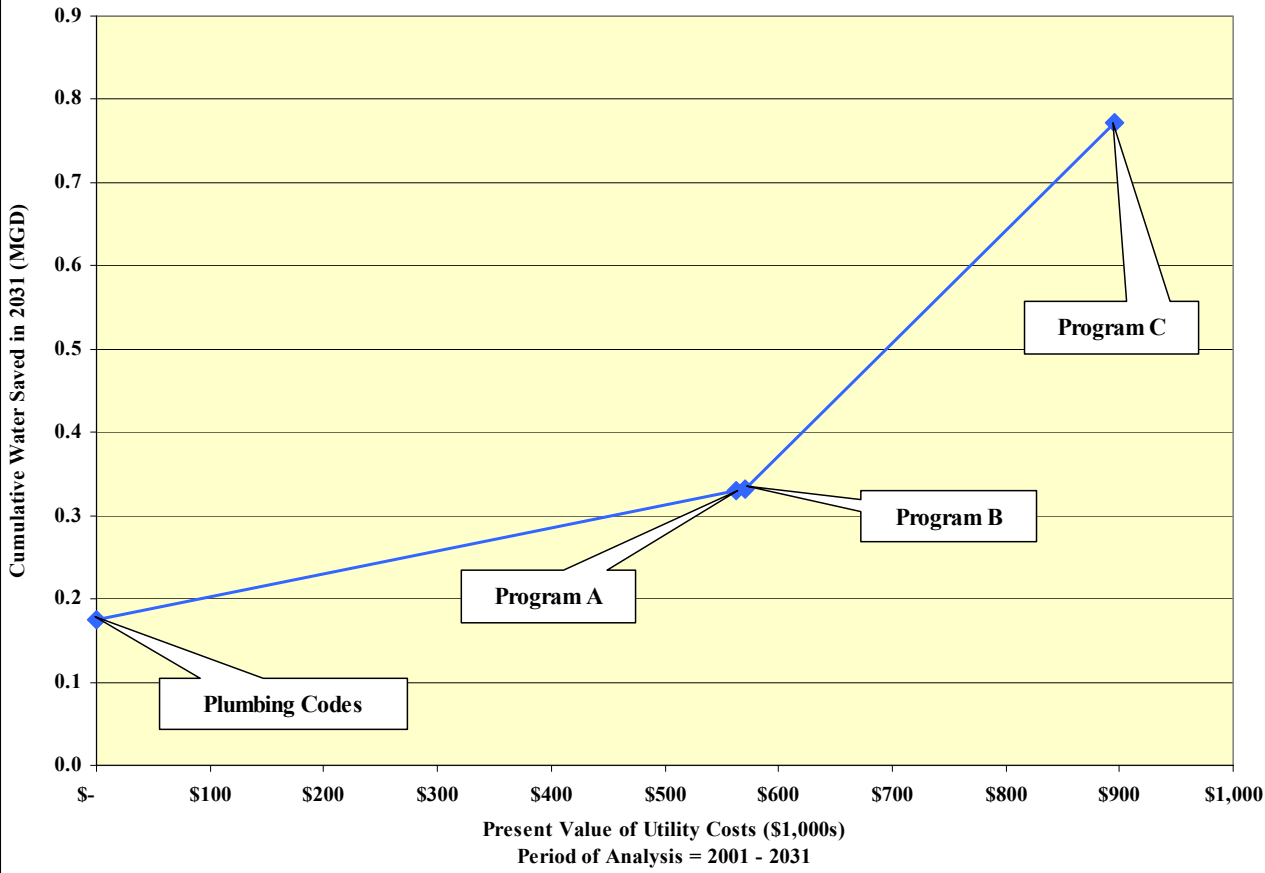
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of San Jose (North San Jose)  
June 24, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           |           |           | X              |
| Homeowner irrigation classes  | 15                           |           |           |           | X              |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | X              |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | X              |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           |           | X              |
| Rebate efficient clothes washers  | 20                           |           |           |           | X              |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           | X         |                |
| Restaurant low flow spray rinse nozzles   | 22                           | X         | X         | X         |                |
| Focused water audits for hotels/motels  | 23                           |           | X         | X         |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | X              |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           | X         |                |
| Award program for water savings by businesses   | 26                           |           |           |           | X              |
| Replace inefficient water using equipment   | 27                           | X         | X         | X         |                |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of San Jose (North San Jose)  
June 24, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           |           | <b>X</b>       |
| Financial incentives for complying with water use budget | 29                           |           |           | <b>X</b>  |                |
| Financial incentives for irrigation upgrades             | 30                           | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | <b>X</b>       |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>12</b> | <b>13</b> | <b>18</b> | <b>14</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
 City of San Jose (North San Jose)  
 August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$563            | \$571            | \$896            |
| <b>Cumulative Water Saved (MGD)</b>      | 0.18                 | 0.33             | 0.33             | 0.77             |

**Appendix D26**  
**Santa Clara, City of**

**FINAL Results of Conservation Measures Evaluation  
City of Santa Clara  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.7                              | 1.8                                | 0.072                                 | \$916                                   | \$518,003           | \$178,615                     |
| 2                    | Residential Retrofit  | 2.5                              | 5.2                                | 0.028                                 | \$665                                   | \$317,330           | \$217,595                     |
| 3                    | Large Landscape Conservation  | 1.5                              | 1.3                                | 0.081                                 | \$996                                   | \$487,278           | \$257,081                     |
| 4                    | Water Budgets   |                                  |                                    |                                       |   |                     |                               |
| 5                    | Clothes Washer Rebate   | 1.9                              | 1.3                                | 0.018                                 | \$899                                   | \$155,086           | \$193,134                     |
| 6                    | Public Information Program  | 1.8                              | 2.3                                | 0.066                                 | \$910                                   | \$518,431           | \$178,078                     |
| 7                    | Commercial Water Audits   | 2.5                              | 2.5                                | 0.150                                 | \$616                                   | \$1,589,199         | \$653,040                     |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 12.0                             | 6.6                                | 0.012                                 | \$140                                   | \$204,574           | \$20,999                      |
| 9                    | Residential ULF Toilet Rebate   | 1.1                              | 0.5                                | 0.106                                 | \$1,443                                 | \$181,499           | \$1,079,255                   |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 8.0                              | 0.6                                | 0.125                                 | \$199                                   | \$1,980,919         | \$174,586                     |
| 11                   | Home Leak Detection and Repair  | 0.6                              | 0.6                                | 0.010                                 | \$3,491                                 | (\$167,593)         | \$221,205                     |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 1.5                              | 1.0                                | 0.134                                 | \$1,072                                 | \$750,170           | \$925,932                     |
| 13                   | ET Controller Rebates   | 1.9                              | 1.3                                | 0.051                                 | \$776                                   | \$394,711           | \$141,679                     |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 18.3                             | 1.1                                | 0.069                                 | \$79                                    | \$1,070,196         | \$16,500                      |
| 15                   | Homeowner irrigation classes  | 8.5                              | 0.5                                | 0.032                                 | \$170                                   | \$461,168           | \$16,500                      |
| 16                   | Promote water efficient plantings at new homes  | 2.2                              | 0.2                                | 0.006                                 | \$645                                   | \$56,432            | \$13,035                      |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 2.7                              | 6.0                                | 0.008                                 | \$602                                   | \$88,748            | \$55,125                      |
| 18                   | Incentives for retrofitting sub-metering  | 1.1                              | 0.3                                | 0.003                                 | \$1,408                                 | \$4,834             | \$26,217                      |
| 19                   | Require sub-metering multifamily units  | 1.9                              | 0.4                                | 0.045                                 | \$780                                   | \$346,202           | \$114,417                     |
| 20                   | Rebate efficient clothes washers  | 6.9                              | 10.4                               | 0.024                                 | \$242                                   | \$384,834           | \$69,275                      |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 8.1                              | 1.1                                | 0.035                                 | \$174                                   | \$482,055           | \$10,086                      |



**FINAL Results of Conservation Measures Evaluation  
City of Santa Clara  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 12.0                             | 33.8                               | 0.009                                 | \$134                                   | \$152,330           | \$15,143                      |
| 23                   | Focused water audits for hotels/motels                   | 14.4                             | 17.4                               | 0.038                                 | \$108                                   | \$619,713           | \$27,188                      |
| 24                   | WAVE Program (US EPA) for hotels                         | 78.1                             | 6.4                                | 0.003                                 | \$20                                    | \$43,836            | \$334                         |
| 25                   | Hotel retrofit (w/financial assistance)                  | 4.8                              | 4.9                                | 0.020                                 | \$324                                   | \$280,764           | \$43,675                      |
| 26                   | Award program for water savings by businesses            | 4.0                              | 0.9                                | 0.008                                 | \$366                                   | \$97,127            | \$10,350                      |
| 27                   | Replace inefficient water using equipment                | 2.0                              | 0.4                                | 0.038                                 | \$772                                   | \$330,612           | \$193,571                     |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 100.7                            | 100.7                              | 0.010                                 | \$15                                    | \$165,651           | \$516                         |
| 29                   | Financial incentives for complying with water use budget |                                  |                                    |                                       |   |                     |                               |
| 30                   | Financial incentives for irrigation upgrades             | 2.2                              | 1.2                                | 0.004                                 | \$656                                   | \$31,587            | \$2,155                       |
| 31                   | Require dedicated irrigation meters for new accounts     | 9.0                              | 1.0                                | 0.018                                 | \$158                                   | \$261,203           | \$864                         |
| 32                   | Water Utility / City Department water reduction goals    | 4.1                              | 0.9                                | 0.021                                 | \$374                                   | \$283,192           | \$51,610                      |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
City of Santa Clara  
June 16, 2004**

| Description of Conservation Activity                      | Corresponding Measure Number |
|---|------------------------------|
| Residential Water Surveys (CA BMP 1)                      | 1                            |
| Residential Retrofit (CA BMP 2)                           | 2                            |
| Large Landscape Conservation Audits (CA BMP 5)            | 3                            |
| Clothes Washer Rebate (CA BMP 6)                          | 5                            |
| Public Information Program (CA BMP 7)                     | 6                            |
| Commercial Water Audits (CA BMP 9)                        | 7                            |
| Residential ULF Toilet Rebates (CA BMP 14)                | 9                            |
| System Water Audits, Leak Detection and Repair (CA BMP 3) | None <sup>1</sup>            |
| Metering with Commodity Rates (CA BMP 4)                  | None <sup>1</sup>            |
| Conservation Coordinator (CA BMP 12)                      | None <sup>1</sup>            |
| Water Waste Prohibition (CA BMP 13)                       | None <sup>1</sup>            |

<sup>1</sup>Measure not evaluated in model.

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Santa Clara  
June 16, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            | X         | X         | X         |                |
| Residential Retrofit  | 2                            | X         | X         | X         |                |
| Large Landscape Conservation Audits   | 3                            | X         | X         | X         |                |
| Water Budgets   | 4                            |           |           |           | X              |
| Clothes Washer Rebate   | 5                            | X         | X         | X         |                |
| Public Information Program  | 6                            | X         | X         | X         |                |
| Commercial Water Audits   | 7                            | X         | X         | X         |                |
| ULF Toilet and Urinal Rebates   | 8                            |           | X         | X         |                |
| Residential ULF Toilet Rebate   | 9                            | X         | X         | X         |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | X              |
| Home Leak Detection and Repair  | 11                           |           |           |           | X              |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           | X         |                |
| ET Controller Rebates   | 13                           |           | X         | X         |                |

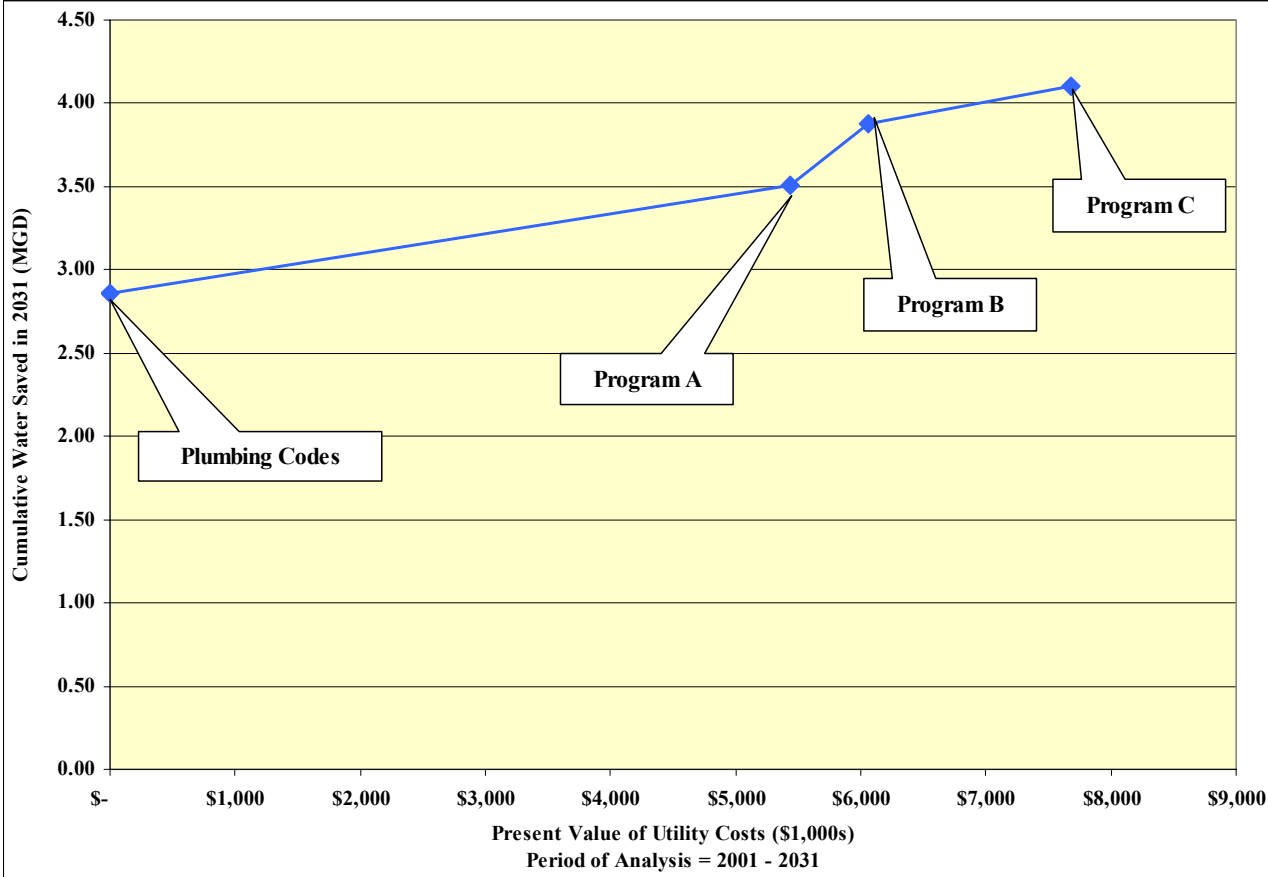
**FINAL Summary of SFPUC Measures Selected in Conservation Programs**  
**City of Santa Clara**  
**June 16, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           | X         | X         |                |
| Homeowner irrigation classes  | 15                           |           |           | X         |                |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | X              |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | X              |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | X              |
| Require sub-metering multifamily units  | 19                           |           |           |           | X              |
| Rebate efficient clothes washers  | 20                           |           |           |           | X              |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           | X         | X         |                |
| Restaurant low flow spray rinse nozzles   | 22                           |           | X         | X         |                |
| Focused water audits for hotels/motels  | 23                           |           | X         | X         |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | X              |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | X              |
| Award program for water savings by businesses   | 26                           |           |           | X         |                |
| Replace inefficient water using equipment   | 27                           |           |           |           | X              |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs**  
**City of Santa Clara**  
**June 16, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           |           | <b>X</b>       |
| Financial incentives for complying with water use budget | 29                           |           |           |           | <b>X</b>       |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | <b>X</b>       |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | <b>X</b>       |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>7</b>  | <b>13</b> | <b>16</b> | <b>16</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved**  
**City of Santa Clara**  
**August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$5,441          | \$6,064          | \$7,683          |
| <b>Cumulative Water Saved (MGD)</b>      | 2.86                 | 3.51             | 3.88             | 4.10             |

**Appendix D27**  
**Skyline County Water District**

**FINAL Results of Conservation Measures Evaluation  
Skyline County Water District  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 1.4                              | 1.6                                | 0.001                                 | \$1,377                                 | \$8,374             | \$4,064                       |
| 2                    | Residential Retrofit  | 2.4                              | 6.5                                | 0.000                                 | \$868                                   | \$4,099             | \$2,954                       |
| 3                    | Large Landscape Conservation  | 1.5                              | 1.2                                | 0.000                                 | \$1,332                                 | \$1,412             | \$866                         |
| 4                    | Water Budgets   |                                  |                                    |                                       |   |                     |                               |
| 5                    | Clothes Washer Rebate   | 2.6                              | 2.3                                | 0.000                                 | \$809                                   | \$3,683             | \$2,448                       |
| 6                    | Public Information Program  | 1.7                              | 2.6                                | 0.002                                 | \$1,176                                 | \$18,231            | \$5,512                       |
| 7                    | Commercial Water Audits   | 2.5                              | 2.4                                | 0.000                                 | \$788                                   | \$5,340             | \$2,250                       |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 9.1                              | 5.1                                | 0.000                                 | \$230                                   | \$540               | \$75                          |
| 9                    | Residential ULF Toilet Rebate   | 1.3                              | 0.6                                | 0.003                                 | \$1,485                                 | \$16,177            | \$26,503                      |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 11.0                             | 0.8                                | 0.004                                 | \$181                                   | \$76,113            | \$4,288                       |
| 11                   | Home Leak Detection and Repair  | 0.6                              | 0.6                                | 0.000                                 | \$4,021                                 | (\$4,852)           | \$6,773                       |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 1.5                              | 1.1                                | 0.002                                 | \$1,342                                 | \$15,014            | \$16,932                      |
| 13                   | ET Controller Rebates   | 1.1                              | 0.7                                | 0.001                                 | \$1,707                                 | \$735               | \$3,104                       |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            |                                  |                                    |                                       |   |                     |                               |
| 15                   | Homeowner irrigation classes  | 1.5                              | 0.3                                | 0.001                                 | \$1,223                                 | \$6,014             | \$3,300                       |
| 16                   | Promote water efficient plantings at new homes  | 1.3                              | 0.1                                | 0.000                                 | \$1,416                                 | \$1,307             | \$1,126                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              |                                  |                                    |                                       |   |                     |                               |
| 18                   | Incentives for retrofitting sub-metering  |                                  |                                    |                                       |   |                     |                               |
| 19                   | Require sub-metering multifamily units  |                                  |                                    |                                       |   |                     |                               |
| 20                   | Rebate efficient clothes washers  |                                  |                                    |                                       |   |                     |                               |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) |                                  |                                    |                                       |   |                     |                               |



**FINAL Results of Conservation Measures Evaluation  
Skyline County Water District  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 41.1                               | 0.000                                 | \$134                                   | \$6,040             | \$468                         |
| 23                   | Focused water audits for hotels/motels                   | 3.1                              | 2.0                                | 0.000                                 | \$621                                   | \$3,415             | \$938                         |
| 24                   | WAVE Program (US EPA) for hotels                         | 17.0                             | 0.7                                | 0.000                                 | \$114                                   | \$315               | \$12                          |
| 25                   | Hotel retrofit (w/financial assistance)                  | 6.3                              | 3.5                                | 0.000                                 | \$310                                   | \$2,247             | \$250                         |
| 26                   | Award program for water savings by businesses            |                                  |                                    |                                       |   |                     |                               |
| 27                   | Replace inefficient water using equipment                | 0.1                              | 0.0                                | 0.000                                 | \$30,148                                | (\$917)             | \$575                         |
| 28                   | Require 0.5 gal/flush urinals in new buildings           |                                  |                                    |                                       |   |                     |                               |
| 29                   | Financial incentives for complying with water use budget |                                  |                                    |                                       |   |                     |                               |
| 30                   | Financial incentives for irrigation upgrades             |                                  |                                    |                                       |   |                     |                               |
| 31                   | Require dedicated irrigation meters for new accounts     |                                  |                                    |                                       |   |                     |                               |
| 32                   | Water Utility / City Department water reduction goals    |                                  |                                    |                                       |   |                     |                               |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day

**FINAL Summary of Current Conservation Programs  
Skyline County Water District  
June 18, 2004**

| <b>Description of Conservation Activity</b> | <b>Corresponding Measure Number</b> |
|---|-------------------------------------|
| Residential Retrofit (CA BMP 2)             | 2                                   |
| Clothes Washer Rebate (CA BMP 6)            | 5                                   |
| Residential ULF Toilet Rebates (CA BMP 14)  | 9                                   |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Skyline County Water District  
June 18, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            |           | X         | X         |                |
| Residential Retrofit  | 2                            | X         | X         | X         |                |
| Large Landscape Conservation Audits   | 3                            |           |           |           | X              |
| Water Budgets   | 4                            |           |           |           | X              |
| Clothes Washer Rebate   | 5                            | X         | X         | X         |                |
| Public Information Program  | 6                            |           |           | X         |                |
| Commercial Water Audits   | 7                            |           |           |           | X              |
| ULF Toilet and Urinal Rebates   | 8                            |           | X         | X         |                |
| Residential ULF Toilet Rebate   | 9                            | X         | X         | X         |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           | X         | X         |                |
| Home Leak Detection and Repair  | 11                           |           |           |           | X              |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           | X         |                |
| ET Controller Rebates   | 13                           |           |           |           | X              |

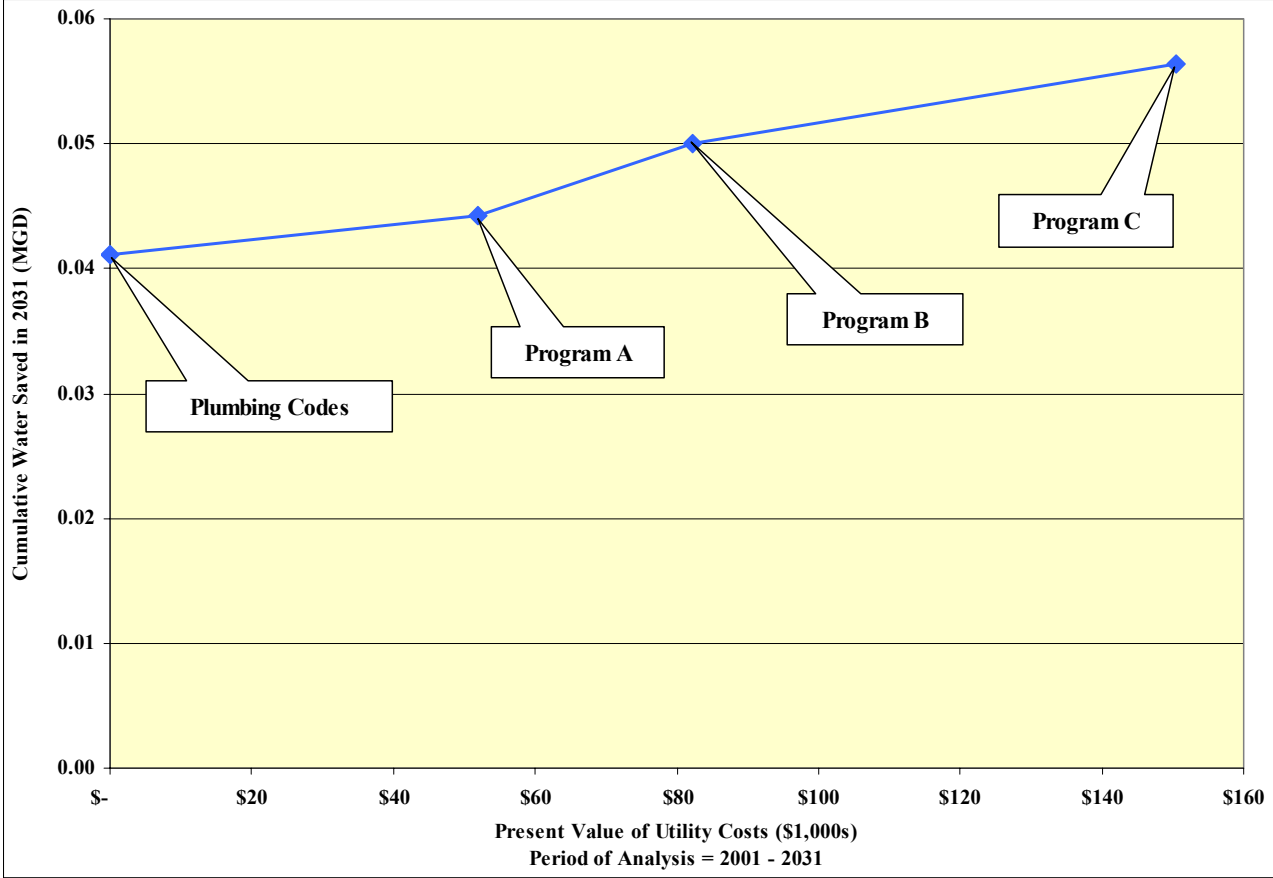
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Skyline County Water District  
June 18, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           |           |           | <b>X</b>       |
| Homeowner irrigation classes  | 15                           |           |           | <b>X</b>  |                |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | <b>X</b>       |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | <b>X</b>       |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | <b>X</b>       |
| Require sub-metering multifamily units  | 19                           |           |           |           | <b>X</b>       |
| Rebate efficient clothes washers  | 20                           |           |           |           | <b>X</b>       |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           |           | <b>X</b>       |
| Restaurant low flow spray rinse nozzles   | 22                           |           | <b>X</b>  | <b>X</b>  |                |
| Focused water audits for hotels/motels  | 23                           |           | <b>X</b>  | <b>X</b>  |                |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | <b>X</b>       |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | <b>X</b>       |
| Award program for water savings by businesses   | 26                           |           |           |           | <b>X</b>       |
| Replace inefficient water using equipment   | 27                           |           |           |           | <b>X</b>       |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Skyline County Water District  
June 18, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           |           | <b>X</b>       |
| Financial incentives for complying with water use budget | 29                           |           |           |           | <b>X</b>       |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | <b>X</b>       |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | <b>X</b>       |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>3</b>  | <b>8</b>  | <b>11</b> | <b>21</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
Skyline County Water District  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$52             | \$82             | \$150            |
| <b>Cumulative Water Saved (MGD)</b>      | 0.04                 | 0.04             | 0.05             | 0.06             |

## **Appendix D28**

### **Stanford University**

**Note:** Stanford University underwent a conservation evaluation in 2002 using the DSS model. For their analysis, specific conservation measures were evaluated that are better suited to Stanford University than those measures evaluated for the other wholesale customers. The following tables present the measures evaluated for Stanford University and the results of the cost-effectiveness analysis.

**Final Results of Conservation Measures Evaluation  
Stanford University**

| No. | Measure Name                                    | Reference Sheet     | Cell Address for Start of Summary | Present Value of Water Utility Benefits: | Present Value of Total Community Benefits: | Present Value of Water Utility Costs: | Present Value of Total Community Costs: | Water Utility Benefit Cost Ratio: | Total Community Benefit Cost Ratio: | Average Water Savings (mgd): | Cost of Savings per Unit Volume (\$/mg): | Net Utility Benefit |
|-----|---|---------------------|-----------------------------------|--|--|---------------------------------------|---|-----------------------------------|-------------------------------------|------------------------------|--|---------------------|
| 1   | Toilet Replacement                              | ToiletReplace       | d6                                | \$2,616,770                              | \$2,616,770                                | \$1,369,734                           | \$1,369,734                             | 1.91                              | 1.91                                | 0.084                        | \$1,437.10                               | \$1,247,036         |
| 2   | Shower Replacement                              | ShowerReplace       | d6                                | \$255,637                                | \$962,805                                  | \$46,123                              | \$46,123                                | 5.54                              | 20.87                               | 0.008                        | \$515.05                                 | \$209,514           |
| 3   | Urinal Replacement w/0.5 gpf                    | UrinalReplace       | d6                                | \$686,794                                | \$686,794                                  | \$264,261                             | \$264,261                               | 2.60                              | 2.60                                | 0.022                        | \$1,052.36                               | \$422,532           |
| 4   | Student Housing Washer Replacement              | SHWasherReplace     | d6                                | \$342,262                                | \$1,289,060                                | \$59,969                              | \$59,969                                | 5.71                              | 21.50                               | 0.011                        | \$496.43                                 | \$282,293           |
| 5   | Public Outreach Program                         | PublicOutreach      | d6                                | \$255,064                                | \$457,089                                  | \$933,983                             | \$933,983                               | 0.27                              | 0.49                                | 0.009                        | \$8,905.00                               | -\$678,919          |
| 6   | Steam Condensate Leak Repair                    | SteamLeaks          | d6                                | \$506,886                                | \$506,886                                  | \$3,943,994                           | \$3,943,994                             | 0.13                              | 0.13                                | 0.017                        | \$20,377.62                              | -\$3,437,108        |
| 7   | CEF Blowdown Reuse                              | CEFPlantReuse       | d6                                | \$1,415,701                              | \$1,415,701                                | \$676,234                             | \$676,234                               | 2.09                              | 2.09                                | 0.056                        | \$1,064.07                               | \$739,468           |
| 8   | Faculty/Staff Housing Water Audits              | FSWaterAudits       | d6                                | \$1,176,586                              | \$1,536,578                                | \$665,553                             | \$665,553                               | 1.77                              | 2.31                                | 0.050                        | \$1,174.31                               | \$511,033           |
| 9   | Landscape Water Management                      | LandscapeManagement | d6                                | \$238,911                                | \$238,911                                  | \$78,881                              | \$78,881                                | 3.03                              | 3.03                                | 0.010                        | \$674.71                                 | \$160,030           |
| 10  | Landscape Retrofit                              | LandscapeRetrofit   | d6                                | \$1,003,640                              | \$1,003,640                                | \$2,444,443                           | \$2,444,443                             | 0.41                              | 0.41                                | 0.042                        | \$5,126.81                               | -\$1,440,803        |
| 11  | New Water Efficient Landscape                   | NewLandscapeEff     | d6                                | \$448,001                                | \$448,001                                  | \$759,864                             | \$759,864                               | 0.59                              | 0.59                                | 0.019                        | \$3,456.12                               | -\$311,863          |
| 12  | New Landscape on Lake System                    | NewLandscapeonLake  | d6                                | \$2,668,757                              | \$2,668,757                                | \$232,437                             | \$232,437                               | 11.48                             | 11.48                               | 0.123                        | \$166.80                                 | \$2,436,320         |
| 13  | Selected Academic Areas on Lake                 | AcademiconLake      | d6                                | \$307,295                                | \$307,295                                  | \$23,915                              | \$23,915                                | 12.85                             | 12.85                               | 0.013                        | \$166.58                                 | \$283,380           |
| 14  | Football Practice Field Off Domestic System     | PracticeField       | d6                                | \$269,383                                | \$269,383                                  | \$9,708                               | \$9,708                                 | 27.75                             | 27.75                               | 0.011                        | \$79.10                                  | \$259,675           |
| 15  | Stadium Irrigation Off Domestic System          | StadiumIrrig        | d6                                | \$331,500                                | \$331,500                                  | \$145,617                             | \$145,617                               | 2.28                              | 2.28                                | 0.014                        | \$932.23                                 | \$185,883           |
| 16  | ET Controller                                   | ETController        | d6                                | \$2,793,003                              | \$2,793,003                                | \$491,875                             | \$1,371,166                             | 5.68                              | 2.04                                | 0.118                        | \$367.74                                 | \$2,301,127         |
| 17  | 5-Washing Machine Rebate According to New BMP 6 | 5WasherRebateSFMF   | d6                                | \$21,547                                 | \$123,750                                  | \$5,384                               | \$16,941                                | 4.00                              | 7.30                                | 0.001                        | \$688.08                                 | \$16,163            |



**Final Results of Conservation Measures Evaluation  
Stanford University**

| <b>No.</b> | <b>Measure Name</b>                    | <b>Reference Sheet</b> | <b>Cell Address for Start of Summary</b> | <b>Present Value of Water Utility Benefits:</b> | <b>Present Value of Total Community Benefits:</b> | <b>Present Value of Water Utility Costs:</b> | <b>Present Value of Total Community Costs:</b> | <b>Water Utility Benefit Cost Ratio:</b> | <b>Total Community Benefit Cost Ratio:</b> | <b>Average Water Savings (mgd):</b> | <b>Cost of Savings per Unit Volume (\$/mg):</b> | <b>Net Utility Benefit</b> |
|------------|--|------------------------|--|---|---|--|--|--|--|-------------------------------------|---|----------------------------|
| 18         | 12 - Dual Flush Toilet Rebate          | 12DualFlushToilets     | d6                                       | \$205,919                                       | \$205,919   | \$64,460                                     | \$90,244                                       | 3.19                                     | 2.28                                       | 0.007                               | \$824.73  | \$141,460                  |
| 19         | 22 - Low Flow Restaurant Spray Nozzles | 22RestrntFlowNzzls     | d6                                       | \$256,713                                       | \$966,857   | \$12,124                                     | \$12,124                                       | 21.17                                    | 79.75                                      | 0.008                               | \$131.72  | \$244,589                  |

## FINAL Comparison of Stanford Master Plan and SFPUC Conservation Measures

| No. | Measure                                     | Brief Description  | Corresponding SFPUC Measure |
|-----|---|--|-----------------------------|
| 1.  | Ultra Low Flush Toilet Replacement          | Replace 90 percent of inefficient toilets with 1.6 gallon/flush models in all campus facilities.   | 9                           |
| 2.  | Showerhead Retrofit                         | Replace 90 percent of inefficient showerheads with low flow models in all campus facilities.   | 2                           |
| 3.  | Urinal Replacement                          | Continue with current urinal replacement plans but hold-off on the remaining until 0.5 gal/flush units or valves are on the market and use these to attain a 90 percent replacement rate.                                  | 28                          |
| 4.  | High-Efficiency Washer Replacement          | Replace existing washing machines in student housing with efficient (such as front loading) models. Retain pay-per-use machine types.  | 5                           |
| 5.  | Public Outreach Programs                    | Implement a multi-faceted public education program directed at departments, students, and employees stressing the need to conserve water. Highlight programs and rebates available.  | 6                           |
| 6.  | CEF Blow Down Water Reuse                   | Prepare preliminary engineering and pilot testing of cooling tower and boiler blow down water for irrigation. Determine best way to integrate this source with the lake system and use to irrigate new and existing areas. | --                          |
| 7.  | Faculty/Staff Housing Water Audits          | Offer indoor/outdoor water audits to not less than 30 percent of the faculty-staff housing on a repeating five-year cycle. Focus on reduction of irrigation, toilet and washer use.  | 1                           |
| 8.  | Landscape Water Management                  | Provide water budgets and tracking of performance on a monthly basis for large irrigated sites. Conduct large turf audits periodically.  | 4                           |
| 9.  | New Water Efficient Landscape               | Amend and require use of Stanford's Landscape Design Guidelines and FDS to ensure predominant use of water efficient plant types is used. Develop and adhere to water budgets. Conduct water efficiency reviews of plans.  | 21                          |
| 10. | New Landscape on Lake Water                 | Put all new landscapes on the lake water system.   | --                          |
| 11. | ET Controllers on new Faculty/Staff Housing | Install evapotranspiration (ET) Controllers on all irrigated landscaped areas associated with new Faculty/Staff Housing units  | 13                          |
| 12. | Selected Academic Areas on Lake Water       | Switch irrigation of five specifically identified landscapes from the domestic to lake system.   | --                          |
| 13. | Football Practice Field on Lake             | Extend the lake system to irrigate the football practice field.  | --                          |

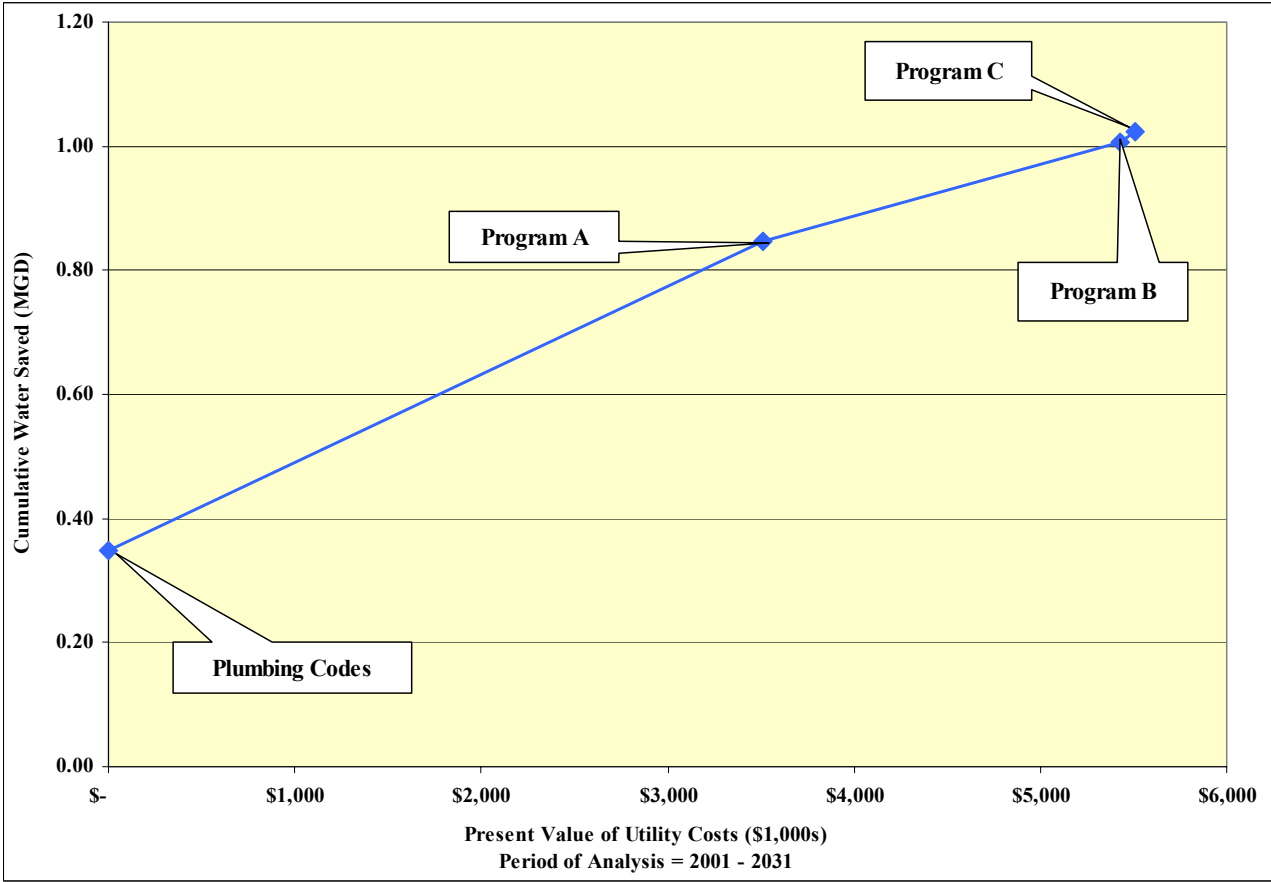
**FINAL Summary of Options Package Programs  
Stanford University**

| Description of Conservation Activity            | Corresponding Measure Number | Program A | Program B | Program C |
|---|------------------------------|-----------|-----------|-----------|
| Toilet Replacement                              | 9                            | X         | X         | X         |
| Shower Replacement                              | 2                            | X         | X         | X         |
| Urinal Replacement w/0.5 gpf                    | 28                           | X         | X         | X         |
| Public Outreach Program                         | 6                            | X         | X         | X         |
| Student Housing Washer Replacement              | 5                            |           | X         | X         |
| CEF Blowdown Reuse                              | None                         |           | X         | X         |
| Faculty/Staff Housing Water Audits              | 1                            | X         | X         | X         |
| Landscape Water Management                      | 4                            | X         | X         | X         |
| New Water Efficient Landscape                   | None                         |           | X         | X         |
| New Landscape on Lake System                    | 21                           | X         | X         | X         |
| ET Controller                                   | 13                           |           | X         | X         |
| Selected Academic Areas on Lake                 | None                         | X         | X         | X         |
| Football Practice Field Off Domestic System     | None                         | X         | X         | X         |
| 5-Washing Machine Rebate According to New BMP 6 | 5                            |           |           | X         |

**FINAL Summary of Options Package Programs  
Stanford University**

| <b>Description of Conservation Activity</b> | <b>Corresponding Measure Number</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|---|-------------------------------------|------------------|------------------|------------------|
| 12 - Rebates for 6/3-Dual Flush Toilets     | 12                                  |                  |                  | <b>X</b>         |
| 22 - Low Flow Restaurant Spray Nozzles      | 22                                  | <b>X</b>         |                  | <b>X</b>         |
| <b>TOTAL NUMBER OF PROGRAMS</b>             |                                     | <b>10</b>        | <b>13</b>        | <b>16</b>        |

## FINAL Present Value of Utility Costs Versus Water Saved Stanford University



|  | Plumbing Code | Program A | Program B | Program C |
|--|---------------|-----------|-----------|-----------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0           | \$3,515   | \$5,431   | \$5,509   |
| <b>Cumulative Water Saved (MGD)</b>      | 0.35          | 0.85      | 1.01      | 1.02      |

**Appendix D29**  
**Sunnyvale, City of**

**FINAL Results of Conservation Measures Evaluation  
City of Sunnyvale  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 2.1                              | 2.6                                | 0.079                                 | \$922                                   | \$948,001           | \$210,107                     |
| 2                    | Residential Retrofit  | 3.3                              | 8.7                                | 0.027                                 | \$646                                   | \$439,658           | \$200,860                     |
| 3                    | Large Landscape Conservation  | 2.5                              | 2.1                                | 0.046                                 | \$775                                   | \$599,161           | \$114,502                     |
| 4                    | Water Budgets   | 27.9                             | 27.9                               | 0.251                                 | \$72                                    | \$5,471,962         | \$204,067                     |
| 5                    | Clothes Washer Rebate   | 2.3                              | 2.0                                | 0.023                                 | \$914                                   | \$309,762           | \$254,664                     |
| 6                    | Public Information Program  | 1.9                              | 2.8                                | 0.072                                 | \$1,112                                 | \$774,244           | \$252,999                     |
| 7                    | Commercial Water Audits   | 2.6                              | 2.6                                | 0.139                                 | \$754                                   | \$1,898,074         | \$718,198                     |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 13.4                             | 7.5                                | 0.011                                 | \$157                                   | \$246,026           | \$22,305                      |
| 9                    | Residential ULF Toilet Rebate   | 1.4                              | 0.6                                | 0.166                                 | \$1,468                                 | \$1,006,263         | \$1,698,923                   |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 9.1                              | 0.7                                | 0.187                                 | \$223                                   | \$3,813,329         | \$274,844                     |
| 11                   | Home Leak Detection and Repair  | 0.7                              | 0.7                                | 0.013                                 | \$3,796                                 | (\$185,431)         | \$315,519                     |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 1.7                              | 1.2                                | 0.161                                 | \$1,182                                 | \$1,456,624         | \$1,248,518                   |
| 13                   | ET Controller Rebates   | 2.3                              | 1.6                                | 0.061                                 | \$786                                   | \$721,719           | \$175,082                     |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 13.0                             | 1.0                                | 0.152                                 | \$144                                   | \$2,956,849         | \$66,000                      |
| 15                   | Homeowner irrigation classes  | 6.4                              | 0.5                                | 0.076                                 | \$288                                   | \$1,336,928         | \$66,000                      |
| 16                   | Promote water efficient plantings at new homes  | 1.1                              | 0.1                                | 0.002                                 | \$1,648                                 | \$2,710             | \$7,411                       |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 3.6                              | 7.7                                | 0.005                                 | \$571                                   | \$76,880            | \$31,500                      |
| 18                   | Incentives for retrofitting sub-metering  | 3.9                              | 1.2                                | 0.012                                 | \$508                                   | \$190,984           | \$38,782                      |
| 19                   | Require sub-metering multifamily units  | 6.2                              | 1.7                                | 0.024                                 | \$293                                   | \$419,771           | \$20,665                      |
| 20                   | Rebate efficient clothes washers  | 9.1                              | 17.6                               | 0.045                                 | \$231                                   | \$948,131           | \$124,800                     |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 14.7                             | 2.0                                | 0.038                                 | \$122                                   | \$724,067           | \$11,800                      |

**FINAL Results of Conservation Measures Evaluation  
City of Sunnyvale  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | “30-year” Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 41.1                               | 0.024                                 | \$134                                   | \$505,315           | \$39,184                      |
| 23                   | Focused water audits for hotels/motels                   | 16.0                             | 18.9                               | 0.039                                 | \$122                                   | \$812,931           | \$31,875                      |
| 24                   | WAVE Program (US EPA) for hotels                         | 86.7                             | 6.9                                | 0.003                                 | \$22                                    | \$57,152            | \$391                         |
| 25                   | Hotel retrofit (w/financial assistance)                  | 6.1                              | 6.2                                | 0.021                                 | \$319                                   | \$386,670           | \$44,500                      |
| 26                   | Award program for water savings by businesses            | 4.7                              | 1.3                                | 0.007                                 | \$393                                   | \$120,272           | \$10,350                      |
| 27                   | Replace inefficient water using equipment                | 0.3                              | 0.1                                | 0.004                                 | \$6,966                                 | (\$232,680)         | \$183,539                     |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 44.5                             | 44.5                               | 0.028                                 | \$42                                    | \$566,166           | \$3,519                       |
| 29                   | Financial incentives for complying with water use budget | 10.9                             | 3.9                                | 0.144                                 | \$178                                   | \$2,861,360         | \$169,657                     |
| 30                   | Financial incentives for irrigation upgrades             | 1.8                              | 1.0                                | 0.004                                 | \$990                                   | \$40,153            | \$12,712                      |
| 31                   | Require dedicated irrigation meters for new accounts     |                                  |                                    |                                       |   |                     |                               |
| 32                   | Water Utility / City Department water reduction goals    | 17.5                             | 3.9                                | 0.035                                 | \$111                                   | \$716,740           | \$25,210                      |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day



**FINAL Summary of Current Conservation Programs  
City of Sunnyvale  
July 6, 2004**

| Description of Conservation Activity                      | Corresponding Measure Number |
|---|------------------------------|
| Residential Water Surveys (CA BMP 1)                      | 1                            |
| Residential Retrofit (CA BMP 2)                           | 2                            |
| Large Landscape Conservation Audits (CA BMP 5)            | 3                            |
| Clothes Washer Rebate (CA BMP 6)                          | 5                            |
| Public Information Program (CA BMP 7)                     | 6                            |
| Commercial Water Audits (CA BMP 9)                        | 7                            |
| ULF Toilet and Urinal Rebates (CA BMP 9)                  | 8                            |
| Residential ULF Toilet Rebates (CA BMP 14)                | 9                            |
| Conservation Pricing (CA BMP 11)                          | None <sup>1</sup>            |
| System Water Audits, Leak Detection and Repair (CA BMP 3) | None <sup>1</sup>            |
| Metering with Commodity Rates (CA BMP 4)                  | None <sup>1</sup>            |
| Conservation Coordinator (CA BMP 12)                      | None <sup>1</sup>            |
| Water Waste Prohibition (CA BMP 13)                       | None <sup>1</sup>            |

<sup>1</sup>Measure not evaluated in model.

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Sunnyvale  
August 31, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Residential Retrofit  | 2                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Large Landscape Conservation Audits   | 3                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Water Budgets   | 4                            |           |           | <b>X</b>  |                |
| Clothes Washer Rebate   | 5                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Public Information Program  | 6                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Commercial Water Audits   | 7                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| ULF Toilet and Urinal Rebates   | 8                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Residential ULF Toilet Rebate   | 9                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | <b>X</b>       |
| Home Leak Detection and Repair  | 11                           |           |           |           | <b>X</b>       |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           | <b>X</b>  |                |
| ET Controller Rebates   | 13                           |           |           |           | <b>X</b>       |

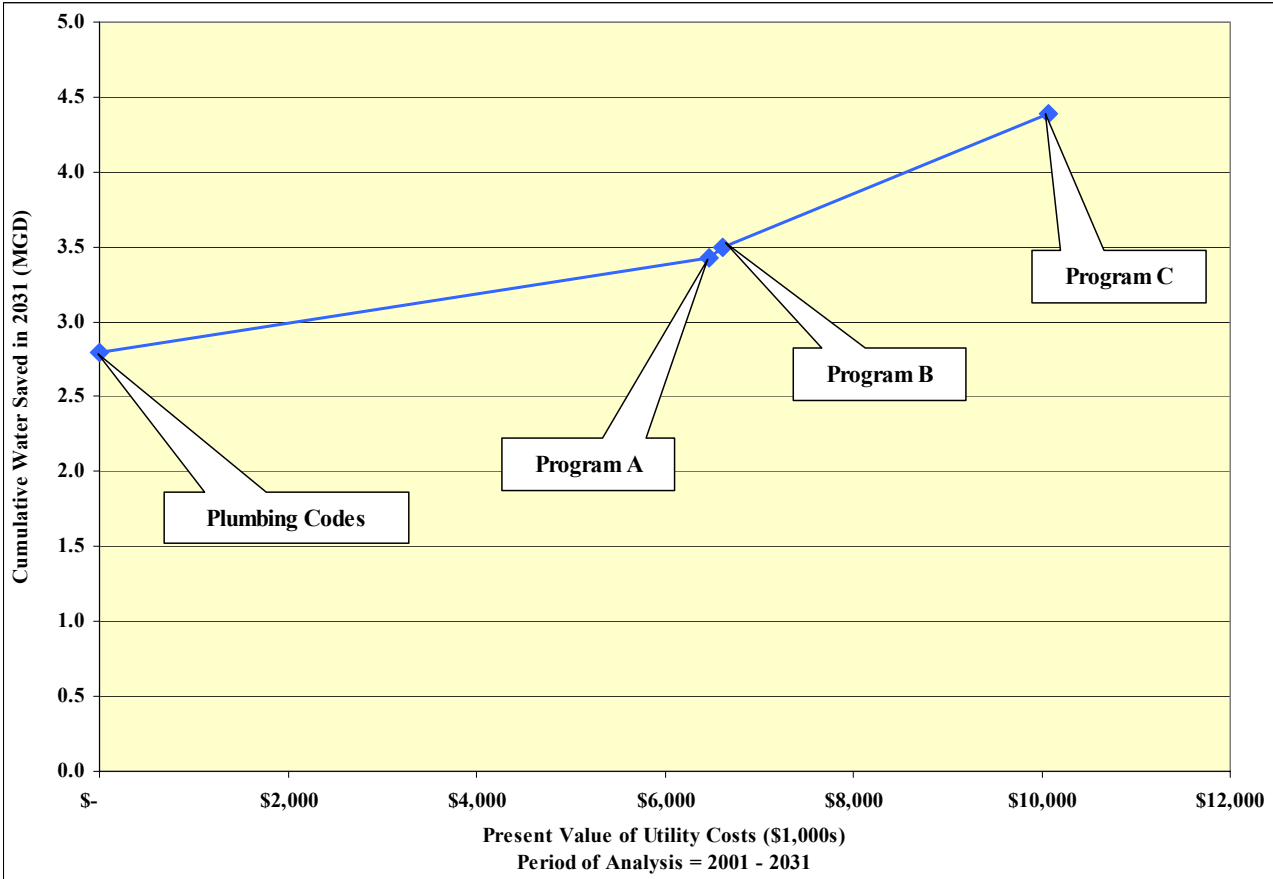
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Sunnyvale  
August 31, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           |           |           | <b>X</b>       |
| Homeowner irrigation classes  | 15                           |           |           | <b>X</b>  |                |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | <b>X</b>       |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | <b>X</b>       |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | <b>X</b>       |
| Require sub-metering multifamily units  | 19                           |           |           |           | <b>X</b>       |
| Rebate efficient clothes washers  | 20                           |           | <b>X</b>  | <b>X</b>  |                |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           |           | <b>X</b>       |
| Restaurant low flow spray rinse nozzles   | 22                           |           | <b>X</b>  | <b>X</b>  |                |
| Focused water audits for hotels/motels  | 23                           |           |           |           | <b>X</b>       |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | <b>X</b>       |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | <b>X</b>       |
| Award program for water savings by businesses   | 26                           |           |           |           | <b>X</b>       |
| Replace inefficient water using equipment   | 27                           |           |           |           | <b>X</b>       |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
City of Sunnyvale  
August 31, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           |           | <b>X</b>       |
| Financial incentives for complying with water use budget | 29                           |           |           |           | <b>X</b>       |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | <b>X</b>       |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | <b>X</b>       |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>8</b>  | <b>10</b> | <b>13</b> | <b>19</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
City of Sunnyvale  
August 31, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$6,470          | \$6,615          | \$10,071         |
| <b>Cumulative Water Saved (MGD)</b>      | 2.8                  | 3.4              | 3.5              | 4.4              |

**Appendix D30**  
**Westborough Water District**

**FINAL Results of Conservation Measures Evaluation  
Westborough Water District  
August 4, 2004**

| Conservation Measure |   | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|---|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 1                    | Residential Water Surveys   | 0.8                              | 1.1                                | 0.003                                 | \$2,581                                 | (\$21,209)          | \$25,169                      |
| 2                    | Residential Retrofit  | 2.4                              | 6.4                                | 0.003                                 | \$867                                   | \$45,460            | \$33,303                      |
| 3                    | Large Landscape Conservation  | 1.5                              | 1.2                                | 0.000                                 | \$1,323                                 | \$1,997             | \$1,201                       |
| 4                    | Water Budgets   | 18.3                             | 18.3                               | 0.013                                 | \$110                                   | \$287,748           | \$18,063                      |
| 5                    | Clothes Washer Rebate   | 2.4                              | 2.1                                | 0.002                                 | \$884                                   | \$23,531            | \$18,230                      |
| 6                    | Public Information Program  | 1.1                              | 1.9                                | 0.005                                 | \$1,960                                 | \$7,623             | \$33,471                      |
| 7                    | Commercial Water Audits   | 2.0                              | 1.9                                | 0.003                                 | \$971                                   | \$27,791            | \$17,076                      |
| 8                    | Commercial ULF Toilet and Urinal Rebates  | 8.4                              | 4.7                                | 0.000                                 | \$249                                   | \$3,754             | \$569                         |
| 9                    | Residential ULF Toilet Rebate   | 0.7                              | 0.3                                | 0.010                                 | \$3,021                                 | (\$119,950)         | \$222,461                     |
| 10                   | Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 4.2                              | 0.3                                | 0.022                                 | \$451                                   | \$351,993           | \$35,988                      |
| 11                   | Home Leak Detection and Repair  | 0.5                              | 0.5                                | 0.001                                 | \$5,110                                 | (\$36,423)          | \$41,826                      |
| 12                   | Rebates for 6/3 dual flush or 4 liter toilets   | 1.9                              | 1.4                                | 0.016                                 | \$1,047                                 | \$173,872           | \$113,184                     |
| 13                   | ET Controller Rebates   | 0.5                              | 0.4                                | 0.001                                 | \$3,583                                 | (\$28,626)          | \$19,773                      |
| 14                   | Xeriscape education and staff training at retail garden/irrigation supply houses            | 2.2                              | 0.1                                | 0.001                                 | \$850                                   | \$14,287            | \$3,300                       |
| 15                   | Homeowner irrigation classes  | 1.0                              | 0.1                                | 0.001                                 | \$1,818                                 | \$41                | \$3,300                       |
| 16                   | Promote water efficient plantings at new homes  | 0.2                              | 0.0                                | 0.000                                 | \$11,889                                | (\$280)             | \$120                         |
| 17                   | Offer incentives for replacement of clothes washers in coin-operated laundries              | 3.5                              | 7.6                                | 0.001                                 | \$579                                   | \$18,877            | \$7,875                       |
| 18                   | Incentives for retrofitting sub-metering  | 13.0                             | 2.7                                | 0.001                                 | \$151                                   | \$19,331            | \$940                         |
| 19                   | Require sub-metering multifamily units  | 11.9                             | 3.6                                | 0.000                                 | \$157                                   | \$490               | \$16                          |
| 20                   | Rebate efficient clothes washers  | 5.8                              | 11.4                               | 0.000                                 | \$358                                   | \$9,136             | \$2,000                       |
| 21                   | Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 18.8                             | 2.7                                | 0.000                                 | \$98                                    | \$1,426             | \$29                          |

**FINAL Results of Conservation Measures Evaluation  
Westborough Water District  
August 4, 2004**

| Conservation Measure |  | Water Utility Benefit-Cost Ratio | Total Community Benefit-Cost Ratio | "30-year" Average Water Savings (MGD) | Cost of Savings per Unit Volume (\$/MG) | Net Utility Benefit | First Five Years Utility Cost |
|----------------------|--|----------------------------------|------------------------------------|---------------------------------------|---|---------------------|-------------------------------|
| 22                   | Restaurant low flow spray rinse nozzles                  | 15.1                             | 41.1                               | 0.001                                 | \$134                                   | \$22,145            | \$1,717                       |
| 23                   | Focused water audits for hotels/motels                   |                                  |                                    |                                       |   |                     |                               |
| 24                   | WAVE Program (US EPA) for hotels                         |                                  |                                    |                                       |   |                     |                               |
| 25                   | Hotel retrofit (w/financial assistance)                  |                                  |                                    |                                       |   |                     |                               |
| 26                   | Award program for water savings by businesses            |                                  |                                    |                                       |   |                     |                               |
| 27                   | Replace inefficient water using equipment                | 1.4                              | 0.3                                | 0.000                                 | \$1,356                                 | \$3,244             | \$4,364                       |
| 28                   | Require 0.5 gal/flush urinals in new buildings           | 11.2                             | 11.2                               | 0.000                                 | \$169                                   | \$123               | \$4                           |
| 29                   | Financial incentives for complying with water use budget | 7.2                              | 2.5                                | 0.010                                 | \$272                                   | \$191,175           | \$18,106                      |
| 30                   | Financial incentives for irrigation upgrades             | 2.4                              | 1.4                                | 0.000                                 | \$754                                   |                     | \$31                          |
| 31                   | Require dedicated irrigation meters for new accounts     |                                  |                                    |                                       |   |                     |                               |
| 32                   | Water Utility / City Department water reduction goals    |                                  |                                    |                                       |   |                     |                               |

**Notes:**

Numbers in parentheses indicate a negative value

MG – Million Gallons

MGD – Million Gallons per Day



**FINAL Summary of Current Conservation Programs  
Westborough Water District  
June 10, 2004**

| Description of Conservation Activity                      | Corresponding Measure Number |
|---|------------------------------|
| Residential Water Surveys (CA BMP 1)                      | 1                            |
| Clothes Washer Rebate (CA BMP 6)                          | 5                            |
| Residential ULF Toilet Rebates (CA BMP 14)                | 9                            |
| Conservation Pricing (CA BMP 11)                          | None <sup>1</sup>            |
| System Water Audits, Leak Detection and Repair (CA BMP 3) | None <sup>1</sup>            |
| Metering with Commodity Rates (CA BMP 4)                  | None <sup>1</sup>            |
| Conservation Coordinator (CA BMP 12)                      | None <sup>1</sup>            |
| Water Waste Prohibition (CA BMP 13)                       | None <sup>1</sup>            |

<sup>1</sup>Measure not evaluated in model.

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Westborough Water District  
June 10, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Residential Water Surveys   | 1                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Residential Retrofit  | 2                            |           |           | <b>X</b>  |                |
| Large Landscape Conservation Audits   | 3                            |           |           |           | <b>X</b>       |
| Water Budgets   | 4                            |           |           | <b>X</b>  |                |
| Clothes Washer Rebate   | 5                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Public Information Program  | 6                            |           | <b>X</b>  | <b>X</b>  |                |
| Commercial Water Audits   | 7                            |           |           |           | <b>X</b>       |
| ULF Toilet and Urinal Rebates   | 8                            |           |           |           | <b>X</b>       |
| Residential ULF Toilet Rebate   | 9                            | <b>X</b>  | <b>X</b>  | <b>X</b>  |                |
| Require 1.6 gal per flush toilets to be installed at the time of sale of existing buildings | 10                           |           |           |           | <b>X</b>       |
| Home Leak Detection and Repair  | 11                           |           |           |           | <b>X</b>       |
| Rebates for 6/3 dual flush or 4 liter toilets   | 12                           |           |           |           | <b>X</b>       |
| ET Controller Rebates   | 13                           |           |           |           | <b>X</b>       |

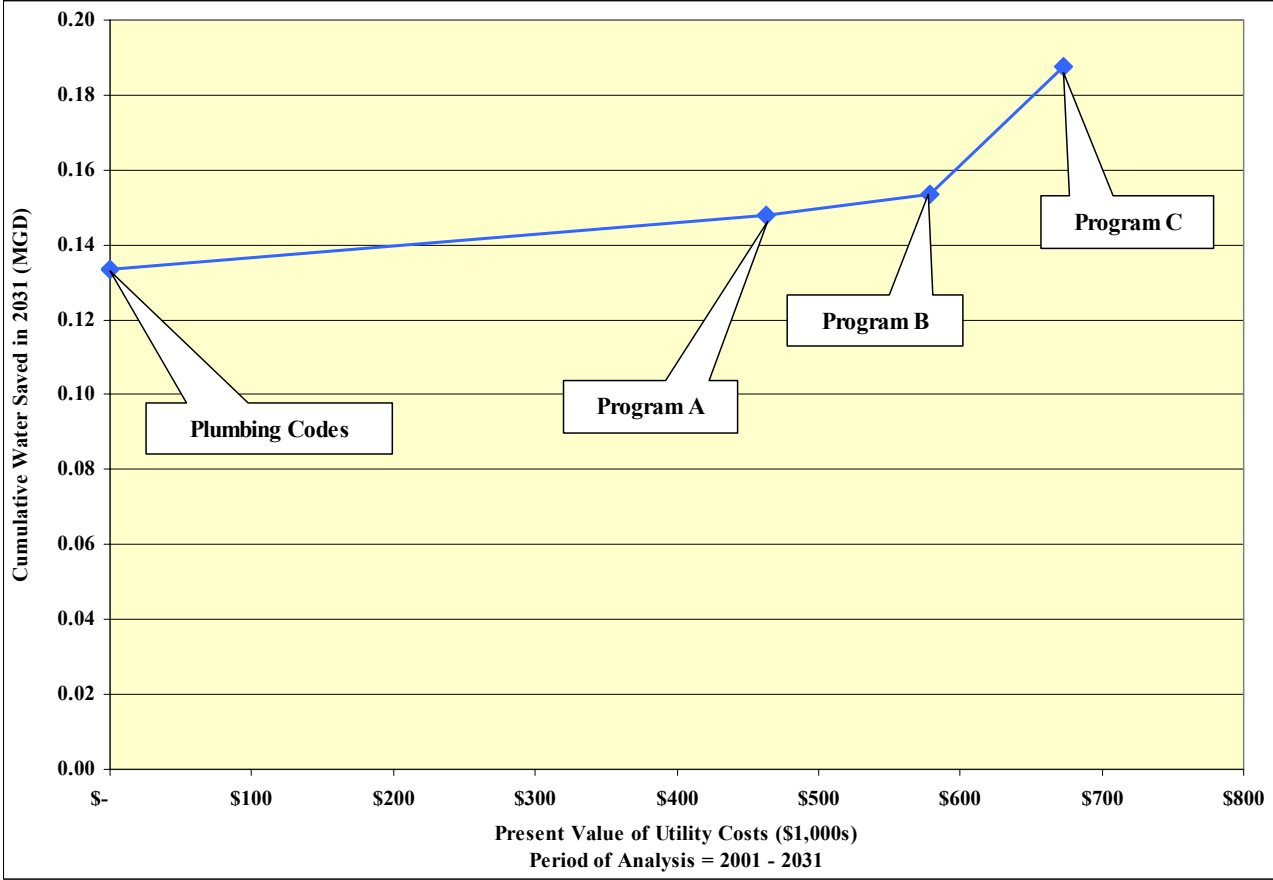
**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Westborough Water District  
June 10, 2004**

| Description of Conservation Activity  | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|---|------------------------------|-----------|-----------|-----------|----------------|
| Xeriscape education and staff training at retail garden/irrigation supply houses            | 14                           |           |           | <b>X</b>  |                |
| Homeowner irrigation classes  | 15                           |           |           |           | <b>X</b>       |
| Promote water efficient plantings at new homes  | 16                           |           |           |           | <b>X</b>       |
| Offer incentives for replacement of clothes washers in coin-operated laundries              | 17                           |           |           |           | <b>X</b>       |
| Incentives for retrofitting sub-metering  | 18                           |           |           |           | <b>X</b>       |
| Require sub-metering multifamily units  | 19                           |           |           |           | <b>X</b>       |
| Rebate efficient clothes washers  | 20                           |           |           |           | <b>X</b>       |
| Enforce landscape requirements for new landscaping systems (turf limitations / regulations) | 21                           |           |           | <b>X</b>  |                |
| Restaurant low flow spray rinse nozzles   | 22                           |           |           |           | <b>X</b>       |
| Focused water audits for hotels/motels  | 23                           |           |           |           | <b>X</b>       |
| WAVE Program (US EPA) for hotels  | 24                           |           |           |           | <b>X</b>       |
| Hotel retrofit (w/financial assistance)   | 25                           |           |           |           | <b>X</b>       |
| Award program for water savings by businesses   | 26                           |           |           |           | <b>X</b>       |
| Replace inefficient water using equipment   | 27                           |           |           | <b>X</b>  |                |

**FINAL Summary of SFPUC Measures Selected in Conservation Programs  
Westborough Water District  
June 10, 2004**

| Description of Conservation Activity                     | Corresponding Measure Number | Program A | Program B | Program C | Not Attractive |
|--|------------------------------|-----------|-----------|-----------|----------------|
| Require 0.5 gal/flush urinals in new buildings           | 28                           |           |           |           | <b>X</b>       |
| Financial incentives for complying with water use budget | 29                           |           |           | <b>X</b>  |                |
| Financial incentives for irrigation upgrades             | 30                           |           |           |           | <b>X</b>       |
| Require dedicated irrigation meters for new accounts     | 31                           |           |           |           | <b>X</b>       |
| Water Utility / City Department water reduction goals    | 32                           |           |           |           | <b>X</b>       |
| <b>TOTAL NUMBER OF MEASURES</b>                          |                              | <b>3</b>  | <b>4</b>  | <b>10</b> | <b>22</b>      |

**FINAL Present Value of Utility Costs Versus Water Saved  
Westborough Water District  
August 4, 2004**



|  | <b>Plumbing Code</b> | <b>Program A</b> | <b>Program B</b> | <b>Program C</b> |
|--|----------------------|------------------|------------------|------------------|
| <b>Present Value of Costs (\$1,000s)</b> | \$0                  | \$463            | \$579            | \$673            |
| <b>Cumulative Water Saved (MGD)</b>      | 0.13                 | 0.15             | 0.15             | 0.19             |