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*The Coastside County Water District is a water **retailer**.*

*Utility services provided by the Coastside County Water District: **Water***

*The Coastside County Water District is **not** a Bureau of Reclamation Contractor.*

*The Coastside County Water District is **not** a State Water Project Contractor.*



## Coastside County Water District

# 2005 URBAN WATER MANAGEMENT PLAN

### Executive Summary

This Urban Water Management Plan (UWMP) covers the period from 2005-2010, and is the fifth plan adopted by the Coastside County Water District's (District) Board of Directors (the four previous plans covered the periods from 1985-1990, 1990-1995, 1995-2000, and 2000-2005). Several changes have occurred since the District's first UWMP was adopted in 1985. A broader, more sophisticated representation of the District's water supply, demand management measures, and operational alternatives has been expanded and detailed in this report.

Sections III and IV of this report detail the process in which the public and other related agencies participated in the development of this UWMP. This section also provides a detailed description of the District's service area including location, size, population, climate, and demographic factors such as growth rates and water connection availability.

Section V of this UWMP begins with a comprehensive explanation of the water supply relationship between the District and the San Francisco Public Utilities Commission (SFPUC). The District has also included a discussion of the Bay Area Water Supply and Conservation Agency (BAWSCA). BAWSCA acts as a lead role in managing the District's water supply and conservation contracts with the SFPUC.

Section V also describes the District's current water supply including local sources and purchased water. In 2004, the District produced a total of 2,738 AF and sold 2,551 AF to its customers. Currently, the District purchases approximately 73% of its water supply from two water sources that are owned and operated by the SFPUC. The remaining 27% of supply is produced from local groundwater and surface water. Normal production capabilities are described in this section for each water supply source. This section further explains the District's water facilities including treatment plants, storage tanks, distribution system, and production capabilities.

Section VI analyzes the District's water use by customer class. In 2004, residential customers generated 52% of the District's water sales. The second major water user in the District's service area is the floriculture industry, with over 14% of water use going towards the production of flower crops. Section VII discusses wastewater treatment and the potential use of recycled water here on the coast. As of July 2005, two major recycled water feasibility studies have been completed that analyze the quantity, future customers, cost, and feasibility of using recycled water. Although the District does not currently produce or sell recycled water to its customers, it is discussed as a potential water supply source in this section.

Section VIII examines water supply reliability among normal and dry years. Historic data from both the SFPUC and the District are used to assess supply during drought years. Demand and

supply are compared along with a discussion of potential future water supply projects, which will upgrade the District's distribution and treatment system.

Section IX addresses the Interim Water Shortage Allocation Plan (IWSAP), which was adopted in 2000 and will expire in 2009. The IWSAP applies to SFPUC system wide water shortages up to 20% and the steps to reallocate water between all of the SFPUC's retailers. Section IX also discusses the District's own Water Shortage Contingency Plan, which was recently adopted in 2005. The Water Shortage Contingency Plan, which is included in the appendix, gives the District a comprehensive plan for responding to a water shortage due to drought or system emergency. The Contingency Plan contains a brief background of the District's experience in dealing with weather related droughts as well as covers four stages of a water shortage event. Each of the stages discusses a clear set of objectives, a public message, communication actions, internal operating actions, and supply and demand management actions.

Finally, Section X of the UWMP analyzes the District's Demand Management Measures also referred to by the California Urban Water Conservation Council (CUWCC) as Best Management Practices (BMPs). Since 1991, the District has been a voluntary member of the CUWCC and has since implemented water use efficiency programs in its service area. This section details each of the conservation measures and includes the current status of the program, benefit-cost ratio and the estimated water savings.

## Table of Contents

<b>Executive Summary</b> .....	<b>i</b>
<b>Table of Contents</b> .....	<b>iii</b>
<b>I. Purpose</b> .....	<b>1</b>
<b>II. Introduction</b> .....	<b>2</b>
<b>III. Public Participation and Interagency Coordination</b> .....	<b>3</b>
Proof of Public Hearing .....	3
Coordination and Preparation of the UWMP.....	3
<b>IV. Service Area Description</b> .....	<b>4</b>
Location and Size.....	4
Population Projections .....	4
Climate Characteristics .....	6
Demographic Factors.....	6
<b>V. Water Supply</b> .....	<b>7</b>
San Francisco Public Utilities Commission.....	7
Bay Area Water Conservation and Supply Agency .....	8
Water Supply Sources .....	8
Current and Planned Water Supply .....	11
Water Facilities.....	12
Treatment Plants.....	12
Storage and Distribution.....	12
Supply Yields .....	12
Exchange and Transfer Opportunities .....	12
Efforts to Minimize Imported Water and Maximize Local Resources .....	13
<b>VI. Water Use</b> .....	<b>14</b>
Water Demand by Customer Category.....	15
Residential .....	15
Industrial.....	16
Commercial .....	16
Institutional .....	16
Irrigation .....	16
System Losses.....	16
<b>VII. Wastewater and Recycled Water</b> .....	<b>18</b>
Collection and Treatment System Description.....	18
Current Recycled or Desalinated Water Use .....	19
Potential Uses of Recycled Water .....	19
Projected Use of Recycled Water .....	20
Description of Potential Financial Incentives .....	21
<b>VIII. Water Supply and Demand</b> .....	<b>22</b>
Water Supply Projects.....	22
Water Quality .....	24
Supply Reliability .....	24
Supply Verses Projected Demand .....	26
<b>IX. Water Shortage Contingency Plan</b> .....	<b>28</b>
Drought Penalties and Fees.....	30

Revenue Impacts and Expenditures .....	30
Seismic Vulnerability Study .....	31
<b>X. Demand Management Measures .....</b>	<b>32</b>
Residential Water Audits (BMP 1) .....	32
Residential Plumbing Retrofit (BMP 2) .....	33
System Water Audits (BMP 3) .....	34
Metering with Commodity Rates (BMP 4) .....	34
Large Landscape Conservation (BMP 5) .....	34
Residential Washing Machine Rebates (BMP 6) .....	35
Public Information Program (BMP 7) .....	35
School Education Program (BMP 8) .....	36
Industrial, Commercial, and Institutional Conservation (BMP 9 and 9a) .....	37
Low Flow Restaurant Spray Nozzles .....	37
Conservation Pricing (BMP 11) .....	38
Conservation Coordinator (BMP 12) .....	39
Water Waste Prohibition (BMP 13) .....	39
Residential ULFT Replacement (BMP 14) .....	39
Irrigation & Xeriscape Classes for Homeowners .....	40

## Table of Tables

Table 1: Coordination with Appropriate Agencies .....	3
Table 2: Population-Current and Projected .....	4
Table 3: Average ETo, Rainfall, and Temperature .....	6
Table 4: Groundwater Pumping Rights - AFY .....	10
Table 5: Amount of Groundwater Pumped - AFY .....	10
Table 6: Amount of Groundwater Projected to be Pumped - AFY .....	10
Table 7: Current and Planned Water Supplies - AFY .....	11
Table 8: Projected Water Accounts by Customer Category .....	14
Table 9: Projected Water Deliveries by Customer Category - AFY .....	15
Table 10: Wastewater Collection and Treatment - AFY .....	19
Table 11: Disposal of Wastewater - AFY .....	19
Table 12: Options Summary for SAM WWTP .....	20
Table 13: Potential Uses of Recycled Water - AFY .....	21
Table 14: Projected Supply for Three Multiple Dry Years - AFY .....	25
Table 15: Future SFPUC Deliveries for Single Dry Year and Multiple Dry Years - AFY .....	26
Table 16: Projected Normal Water Supply - AFY .....	26
Table 17: Projected Normal Water Demand - AFY .....	26
Table 18: Supply vs. Demand Comparison - AFY .....	26
Table 19: Available Water based on a SFPUC System Wide Reduction in Water Use .....	28
Table 20: Water Supply Shortages and Conditions .....	29
Table 21: Mandatory Water Waste Prohibitions .....	29
Table 22: Flow Restricting Device Charges .....	30
Table 23: Estimated Residential Water Survey Program Costs .....	33
Table 24: Low Flow Device Distribution Program Summary .....	33
Table 25: Yearly Percentage of Unaccounted for Water .....	34

Table 26: High Efficiency Clothes Washer Rebate Program Summary .....	35
Table 27: School Education Program Summary.....	37
Table 28: Pre-Rinse Spray Valve Savings Estimates.....	38
Table 29: Bi-Monthly Base Rates .....	39
Table 30: Residential ULFT Rebates.....	40

## **Table of Figures**

Figure 1: Population Projections through Year 2030.....	4
Figure 2: Water Supply and Transmission System.....	5
Figure 3: Sources of Water Supply, FY 2004/2005 .....	9
Figure 4: 2004 Water Sales by Category.....	14
Figure 5: Past, Current and Projected Residential Water Use .....	15

## **Appendices**

Appendix A - Board Meeting Minutes and Resolution Approving the UWMP.....	41
Appendix B - Location of SFPUC Capital Improvement Projects.....	42
Appendix C - Water Shortage Contingency Plan.....	43
Appendix D - CUWCC BMP Reports.....	68
Appendix E - CUWCC BMP Coverage Reports.....	91
Appendix F - Coastside County Water District Current Rate Schedule.....	109

## **I. Purpose**

This update to the Coastside County Water District's Urban Water Management Plan (UWMP) has been prepared in response to the State of California's Urban Water Management Planning Act, Water Code Sections 10610 through 10656. The Act requires "Every urban water supplier providing water for municipal purposes to more than 3,000 customer or supplying more than 3,000 acre-feet of water annually to prepare and adopt an urban water management plan" (Section 10617). The Act also requires that water suppliers provide updates to their UWMP every five years.

## II. Introduction

Since 1947, the District has a long history of providing clean and reliable water to its residential, business, and floriculture customers in the City of Half Moon Bay and the unincorporated areas of San Mateo County. Expanding local sources of water and finding new sources have met the growing needs for water in the community. In 1994, the District finalized a major pipeline project with the SFPUC, which allowed the District to purchase water from Crystal Springs Reservoir. This project allowed the District to no longer be constrained by variable local supplies. To continue to meet the water needs of the community, the District carefully manages and plans for a successful water system infrastructure. The District's Urban Water Management Plan (UWMP) acts as a comprehensive guide in planning for a safe and adequate water supply.

Due to recent legislation (SB 533, 2000) regarding new requirements for UWMPs, the District has made significant changes to this version of the UWMP. This UWMP incorporates required changes such as a comprehensive analysis of water conservation initiatives, a detailed look at water supply alternatives and system improvement strategies. Long range water supply planning is critical to the State of California and to the Coastside County Water District to assure reliability and sustainability of high quality water at a reasonable price.

This UWMP will be presented to the District's Board of Directors for review and adoption. Once adopted it will supersede the existing plan prepared in 2000 and will be made available to the public within 30 days after the Plan is adopted. It will be filed with the State of California's Office of Water Use Efficiency in the Department of Water Resources, other city and county offices, and the California State Library as required by law. This UWMP will be used by the District staff to guide water supply planning and water conservation efforts through the year 2010. As required by §10621 (a) of the Water Code, the District will update the Plan again in 2010.

### Acronyms and Abbreviations

BAWSCA-Bay Area Water Supply and Conservation Agency	mg- million gallons
CUWCC-California Urban Water Conservation Council	hcf unit- 100 cubic feet or 748 gallons
UWMP- Urban Water Management Plan	mgd- million gallons per day
DMM-Demand Management Measure (same as BMPs)	LCP- Local Coastal Program
CCWD/District-Coastside County Water District	LUP- Local Use Plan
SFPUC- San Francisco Public Utilities Commission	BMP-Best Management Practice
CII-Commercial, Industrial and Institutional	MOU- Memorandum of Understanding
mg- million gallons per year	SAM- Sewer Authority Mid-Coastside
AFY- acre feet per year	WWTP- Wastewater Treatment Plant

### III. Public Participation and Interagency Coordination

#### Proof of Public Hearing

The District has encouraged community participation in its urban water management planning efforts since the first UWMP was adopted in 1985. Section 10642 of the Urban Water Management Plan Act requires an urban water supplier to make the UWMP available for public review and hold a public hearing prior to adopting it. A Notice of Preparation for the Urban Water Management Plan was sent to all effected parties including cities, county, and all 26 BAWSCA member agencies on July 8, 2005.

The draft UWMP will be distributed on Wednesday November 10, 2005. A public hearing was held on Tuesday December 13, 2005 and written comments were received through Tuesday December 13, 2005. This UWMP was modified where appropriate and incorporates comments received from the public, interested organizations and other agencies.

This UWMP was adopted (by resolution) on December 13, 2005 by the Coastside County Water District Board of Directors and was submitted to the California Department of Water Resources and the California State Library within 30 days of adoption. A copy of the signed resolution adopting this UWMP can be found in Appendix A.

#### Coordination and Preparation of the UWMP

The District is a member of the Bay Area Water Supply and Conservation Agency (BAWSCA). BAWSCA members are all contract customers of the San Francisco Public Utilities Commission for the wholesale purchase of water. Land use planning and development approvals within in the District's boundaries are the responsibility of the City of Half Moon Bay and the County of San Mateo. The Sewer Authority Mid-Coastside (SAM) provides wastewater treatment and the Half Moon Bay Fire Protection District provides fire suppression services. The coordination with these agencies during the preparation of this UWMP is summarized below in Table 1.

**Table 1: Coordination with Appropriate Agencies**

Agency	Participated in developing the plan	Was contacted for assistance	Was sent a copy of the draft plan	Commented on the draft	Attended public hearing
<b>BAWSCA</b>	X	X	X	X	
<b>City of Half Moon Bay</b>			X		
<b>County of San Mateo</b>		X	X		
<b>Sewer Authority Mid-Coastside</b>		X	X	X	X
<b>Half Moon Bay Fire Protection District</b>			X		
<b>San Francisco Public Utilities Commission</b>	X		X		

## IV. Service Area Description

### Location and Size

The District is a special district providing water to customers within its boundaries, which include the City of Half Moon Bay and several unincorporated communities in San Mateo County, including El Granada, Miramar and Princeton by the Sea. District boundaries are depicted in Figure 2 on the following page.

The District is located approximately 30 miles south of San Francisco along the Pacific Ocean and resides at 69 feet above sea level. Most of the area served by the District is located along the coastal terrace between the Pacific Ocean and the precipitous Santa Cruz Mountains. The District boundaries extend approximately 9.5 miles north to south along the coast and 1.5 miles east to west, and include approximately 14 square miles of land.

The predominate land use within the District is small residential communities surrounded by agricultural or light ranching activities. Commercial development is limited to the populated areas along State Route 1 and Highway 92 and at Pillar Point Harbor. Floriculture is largest industry in the area.

### Population Projections

Growth and development within both the City and County planning areas are subject to growth management policies. Growth within the City of Half Moon Bay is limited to 1% per year by Measure D, a citizen initiative adopted in 1999. The projected population within the District's service area through year 2030 is shown in Table 2 and Figure 1 below.

**Table 2: Population-Current and Projected**

	2005	2010	2015	2020	2025	2030
<b>Service Area Population</b>	19,705	21,103	22,183	23,262	24,119	24,973

**Figure 1: Population Projections through Year 2030**

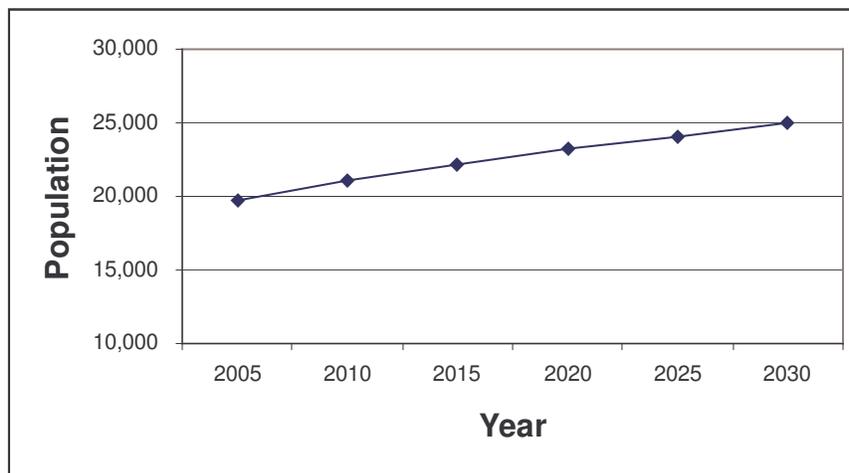
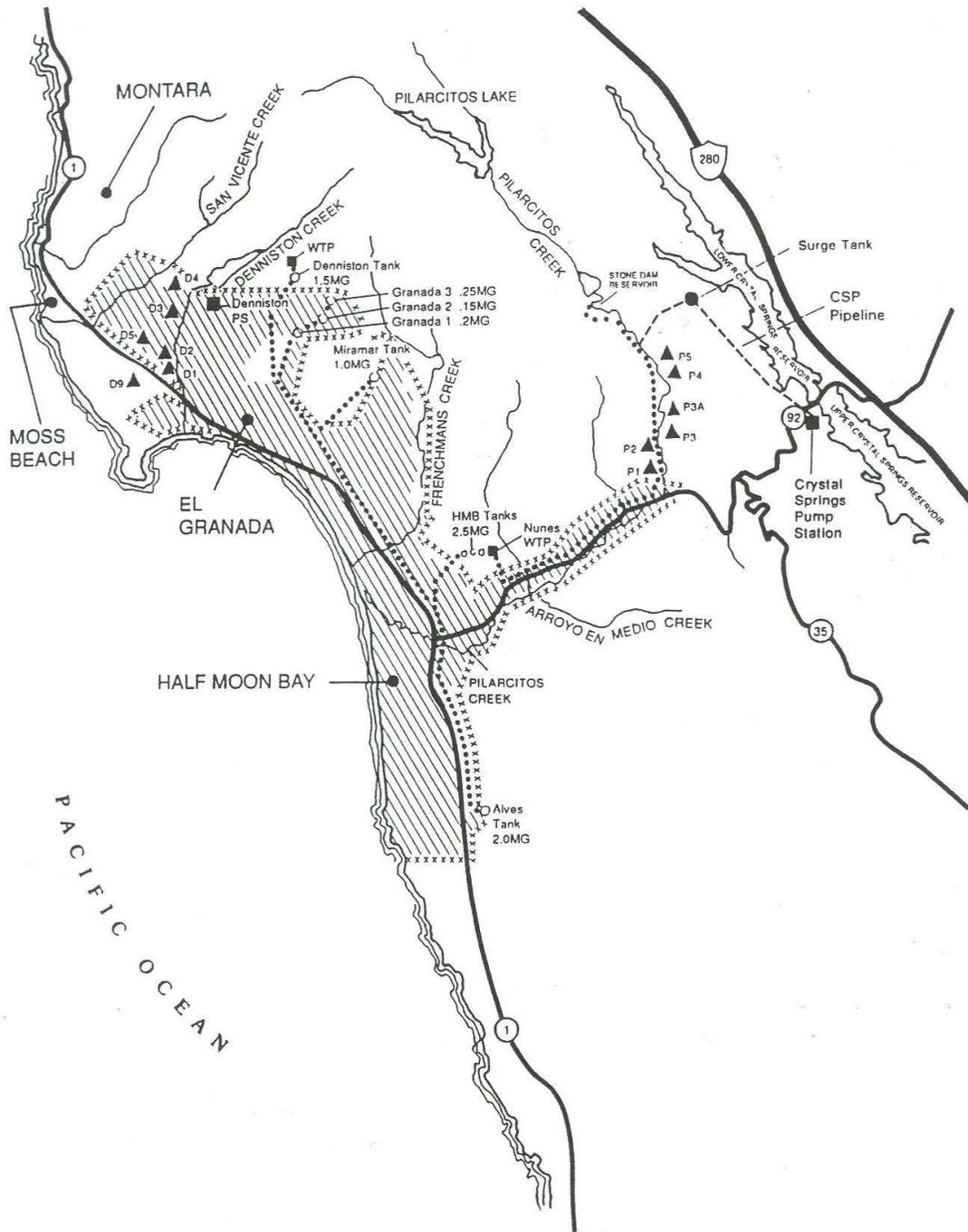


Figure 2: Water Supply and Transmission System



**DISTRICT INFORMATION**

Treated Water Storage	7.60 MG
Water Treatment Plants	
Nunes	4.5 mgd
Denniston	1.0 mgd
Transmission Pipeline	17 miles
Distribution Pipeline	83 miles

**LEGEND**

- xxx District Boundary
- ... Existing Transmission Lines
- - - CSP Transmission Pipeline
- ▲ Wells

January 15, 2007

## Climate Characteristics

The District enjoys a cool climate moderated throughout the year by on-shore breezes from the Pacific Ocean. Summer fog significantly reduces landscape irrigation requirements.

Temperatures are moderate with the summer highs in the mid 60's and winter lows in the mid 50's. Average rainfall in Half Moon Bay is 25.4 inches per year. Table 3 estimates the average temperature and rainfall as well as average monthly evapotranspiration (ETo) based on data from the California Irrigation Management Information System (CIMIS).

**Table 3: Average ETo, Rainfall, and Temperature**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
<b>Standard Average ETo</b>	1.36	1.93	3.26	4.7	4.87	5.32	5.03	4.84	3.6	2.96	1.64	1.3	<b>40.81</b>
<b>Average Rainfall (inches)</b>	5.5	4.8	3.9	1.6	0.6	0.2	0.0	0.1	0.3	1.3	3.4	3.7	<b>25.4</b>
<b>Average Temperature (F)</b>	49.2	52.5	53.6	55.7	58.0	60.7	62.0	62.5	63.2	60.9	54.7	50.1	<b>56.9</b>

## Demographic Factors

The District serves a highly desirable coastal area relatively close to major employment centers in San Mateo and San Francisco Counties. Land use planning within the District is undertaken by the City of Half Moon Bay and for the unincorporated areas, the County of San Mateo. Land use planning within the City is guided by the *Half Moon Bay Local Coastal Program and Land Use Plan (1993)*. Planning in the unincorporated areas of the District, including El Granada, Granada Highlands, Clipper Ridge, Princeton and part of Miramar, is guided by the *San Mateo County Local Coastal Program (August 1992)*.

Growth management provisions in the San Mateo County Local Coastal Program limit growth to 125 units/year in the County's planning area, only a portion of which is in the District service area. The actual rate of growth in recent years has been lower, approximately 75% of the growth management limit.<sup>1</sup> Changes to growth management policies may occur soon since both the City and County LCPs are currently under revision.

As part of growth management, the City and County LCP's limit the total number of water connections that can be sold in the District's service area. The District has two types of water connections: (1) priority connections, which are defined as commercial visitor serving. These include motels, hotels, agriculture, restaurants and low-income or senior housing projects and (2) non-priority connections, which include residential and non-commercial visitor serving.

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<sup>1</sup> Lisa Aozasa, Long Range Planner, San Mateo County, personal communication, August 3, 2005.

## **V. Water Supply**

### **San Francisco Public Utilities Commission**

The District receives water from the City and County of San Francisco's regional system, operated by the San Francisco Public Utilities Commission (SFPUC). This supply is predominantly from the Sierra Nevada, delivered through the Hetch Hetchy aqueducts, but also includes treated water produced by the SFPUC from its local watersheds and facilities in Alameda and San Mateo Counties.

The amount of imported water available to the SFPUC's retail and wholesale customers is constrained by hydrology, physical facilities, and the institutional parameters that allocate the water supply of the Tuolumne River. Due to these constraints, the SFPUC is very dependent on reservoir storage to firm-up its water supplies.

The SFPUC serves its retail and wholesale water demands with an integrated operation of local Bay Area water production and imported water from Hetch Hetchy. In practice, the local watershed facilities are operated to capture local runoff.

The business relationship between San Francisco and its wholesale customers is largely defined by the "Settlement Agreement and Master Water Sales Contract (Master Contract)" executed in 1984. The Master Contract primarily addresses the rate-making methodology used by the City in setting wholesale water rates for its wholesale customers in addition to addressing water supply and water shortages for the regional water system. The contract expires on June 30, 2009.

In terms of water supply, the Master Contract provides for 184 million gallons per day (mgd, expressed on an annual average basis) "Supply Assurance" to the SFPUC's wholesale customers subject to reduction in the event of drought, water shortage, earthquake, other acts of God, or rehabilitation and maintenance of the system. The Master Contract does not guarantee that San Francisco will meet peak daily or hourly customer demands when their annual usage exceeds the Supply Assurance. The SFPUC's wholesale customers have agreed to the allocation of the 184 mgd Supply Assurance among themselves, with each entity's share of the Supply Assurance set forth on a schedule adopted in 1993. The master contract entitles the District to a maximum of about 800 mg a year (2,456 AFY), except in drought years when mandatory water rationing is in effect. This Supply Assurance survives the termination of the Master Contract in 2009.

The SFPUC can meet the water demands of its retail and wholesale customers in wet and normal years. The Master Contract allows the SFPUC to reduce water deliveries during droughts, emergencies, and for scheduled maintenance activities. The Interim Water Shortage Allocation Plan (IWSAP) between the SFPUC and its wholesale customers adopted in 2000 provides that the SFPUC determines the available water supply in drought years for shortages of up to 20% on an average, system-wide basis. The IWSAP is discussed in further detail in Section IX.

### **SFPUC Water Supply Improvement Program (WSIP)**

In order to enhance the ability of the SFPUC water supply system to meet identified service goals for water quality, seismic reliability, delivery reliability, and water supply, the SFPUC is undertaking a Water System Improvement Program (WSIP). The WSIP will deliver capital improvements aimed at enhancing the SFPUC's ability to meet its water service mission of

providing high quality water to its customers in a reliable, affordable and environmentally sustainable manner.

The origins of the WSIP are rooted in the “Water Supply Master Plan” (April 2000). Planning efforts for the WSIP gained momentum in 2002 with the passage of San Francisco ballot measures Propositions A and E, which approved the financing for the water system improvements. Also in 2002, Governor Davis approved Assembly Bill No. 1823, the Wholesale Regional Water System Security and Reliability Act. The WSIP is expected to be completed in 2016. See Appendix B for the locations of the various capital improvement projects that comprise the WSIP

### **Programmatic Environmental Impact Report (PEIR)**

A Programmatic Environmental Impact Report (PEIR) is being prepared under the California Environmental Quality Act (CEQA) for the Water Supply Improvement Program. A PEIR is a special kind of Environmental Impact Report under CEQA that is prepared for an agency program or series of actions that can be characterized as one large project. PEIRs generally analyze broad environmental effects of the program with the acknowledgment that site-specific environmental review may be required at a later date.

Projects included in the WSIP will undergo individual project specific environmental review as required. Under CEQA, project specific environmental review would result in preparation of a Categorical Exemption, Negative Declaration or Environmental Impact Report. Each project will also be reviewed for compliance with the National Environmental Policy Act and local, state and federal permitting requirements as necessary.

### **Bay Area Water Conservation and Supply Agency**

The District is a member of the Bay Area Water Supply and Conservation Agency (BAWSCA) which was created on May 27, 2003 to represent the interests of the 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 provides the ability for the customers of the regional system to work with San Francisco on an equal basis to ensure the water system gets fixed, and to collectively and efficiently meet local responsibilities.

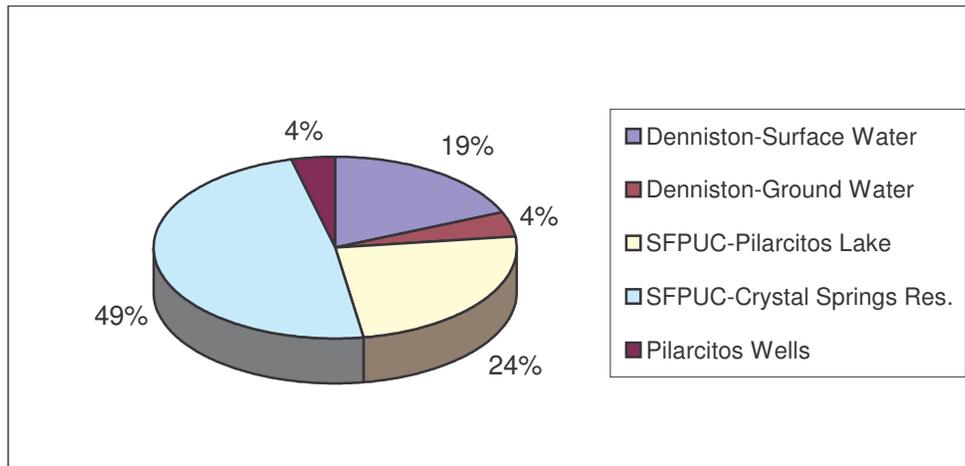
BAWSCA has the authority to coordinate water conservation, supply and recycling activities for its agencies; acquire water and make it available to other agencies on a wholesale basis; finance projects, including improvements to the regional water system; and build facilities jointly with other local public agencies or on its own to carry out the agency’s purposes.

### **Water Supply Sources**

The District obtains water from three sources: (1) purchased water from the San Francisco Public Utilities Commission, (2) infiltration well water from Pilarcitos Well Field, and (3) the

Denniston Project which provides local surface and groundwater. Figure 3 illustrates the percentage of water produced from the District's water sources based upon 2004 data. Water purchased from the SFPUC constituted 73% of the total annual water production while local water sources composed of 27%.

**Figure 3: Sources of Water Supply, FY 2004/2005**



## Surface Water

### San Francisco Public Utilities Commission

The District purchases water from two sources owned and operated by the SFPUC: (1) Pilarcitos Lake, and (2) Crystal Springs Reservoir. The District is currently entitled to purchase a minimum of about 800 mg (or 2,456 AFY) of water annually, except in drought years when mandatory water rationing is in effect. The transmission pipelines from each of these sources interconnect in upper Pilarcitos Canyon. Water can be purchased from only one of these sources at any one point in time due to the system hydraulics including a check valve in the pipeline from Pilarcitos Lake. Each source from the SFPUC is discussed below:

(1) Pilarcitos Lake: Water from Pilarcitos Lake is available throughout the year on an as-available basis. Water from this source is transported to the Nunes Water Treatment Plant (WTP) via gravity pipelines. The maximum rate of flow is 1,889 gpm (gallons per minute). Water is transported from this source by gravity, which eliminates the need for pumping and results in low operating costs and high reliability.

(2) Crystal Springs Reservoir: The District can pump raw water from Upper Crystal Springs Reservoir through an 18-inch diameter pipeline to the Nunes WTP. Water from this source is available throughout the year. Crystal Springs Reservoir is a part of SFPUC's Hetch Hetchy system. The advantage of having this source of supply is that the District is not exclusively dependent on local rainfall. The District is presently limited to about 4.5 mgd from Crystal Springs Reservoir as determined by a Coastal Development Permit and implemented through the capacity limit of the Nunes WTP. Water from this source is also more expensive than water from other sources due to pumping costs. It is also not totally dependable because of the lack of standby power at the Crystal Springs Pump Station.

## Denniston Surface Water

The diversions from Denniston Creek and San Vicente Creeks are under a State water rights permit and limit the District to no more than a total of 4 cfs (cubic feet per second) annually. The amount of surface water diversion is limited by the low flow in the creeks during the summer months, and when the production is low in drought years. The District's state water rights permit is currently under review for an extension.

## Pilarcitos Wells

The Pilarcitos infiltration wells are located in Pilarcitos Canyon upstream of Highway 92 and is owned and operated by the District. See Wells P1-P5 on Figure 2. Under the terms of the District's water rights license, pumping can occur between November 1 and March 31 of the succeeding year and is limited by the permit to 673 gpm and not more than 117 mgd (359 AFY). The yield from this source is extremely low in drought years since the wells extract water directly from Pilarcitos Creek.

## Groundwater

### Denniston Well Field

This source, located east of the Half Moon Bay Airport, is owned and operated by the District and identified as Wells D1-D9 on Figure 2. The production of the Denniston Well Field is not under the control of a water rights permit, but a Coastal Development Permit limits the annual production of the wells to 130 mgd. This is the District's only operational groundwater basin. Tables 4, 5, and 6 show the District's pumping right, amount of groundwater pumped, and projected amount of water to be pumped from the Denniston groundwater basin.

**Table 4: Groundwater Pumping Rights - AFY**

Basin Name	Pumping Right
Denniston Creek Groundwater Basin	399
Total	399

**Table 5: Amount of Groundwater Pumped - AFY**

Basin Name	2000	2001	2002	2003	2004
Denniston Creek Groundwater Basin	65.7	142.9	169.0	159.1	128.9
% of Total Water Supply	2.6%	4.7%	6.1%	5.4%	4.5%

**Table 6: Amount of Groundwater Projected to be Pumped - AFY**

Basin Name	2010	2015	2020	2025	2030
Denniston Creek Groundwater Basin	78.4	56.0	56.0	44.8	33.6
% of Total Water Supply	2.6%	1.8%	1.7%	1.3%	0.9%

## Current and Planned Water Supply

A summary of the District’s existing and planned water supply sources is given below in Table 7. When estimating future water supply for the SFPUC’s Capital Improvement Program, the District chose a 2030 purchase range of 2.24-3.017 mgd (2,510-3,380 AFY) from the SFPUC. This range includes a 0.183 mgd (205 AFY) of water conservation savings. Table 7 illustrates the District’s planned water supplies assuming significant loss in local water supplies due to unreliability from water quality, permitting, and drought situations.

**Table 7: Current and Planned Water Supplies - AFY**

Water Supply Sources	2005	2010	2015	2020	2025	2030
<b>SFPUC (Pilarcitos Lake &amp; Crystal Springs Res.)</b>	2,117	2,980	3,081	3,182	3,272	3,350
<b>Groundwater</b>	129	78	56	56	44	33
<b>Surface Water</b>	647	67	56	56	44	44
<b>Recycled Water (projected use)</b>	0	0	0	0	0	0
<b>Desalination (projected use)</b>	0	0	0	0	0	0
<b>Conservation</b>	168	168	212	212	205	205
<b>Total</b>	3,061	3,293	3,405	3,506	3,565	3,632

The water demand projections used in this UWMP were developed as part of a series of technical studies performed in support of the Capital Improvement Program for the SFPUC Regional Water System. Studies include: SFPUC Wholesale Customer Water Demand Projections (URS 2004); SFPUC Wholesale Customer Water Conservation Potential (URS 2004); SFPUC Wholesale Customer Recycled Water Potential (RMC 2004); and SFPUC 2030 Purchase Estimates (URS 2004).

Water demand projections for the wholesalers were developed using an “End Use” model. Two main steps are involved in developing an End Use model: (1) Establishing base-year water demand at the end-use level (such as toilets, showers) and calibrating the model to initial conditions; and (2) Forecasting future water demand based on future demands of existing water service accounts and future growth in the number of water service accounts.

Establishing the base-year water demand at the end-use level is accomplished by breaking down total historical water use for each type of water service account (single family, multifamily, commercial, irrigation, etc.) to specific end uses (such as toilets, faucets, showers, and irrigation).

Forecasting future water demand is accomplished by determining the growth in the number of water service accounts in a wholesale customer service area. Once these rates of change were determined, they were input into the model and applied to those accounts and their end water uses. The DSS model also incorporates the effects of the plumbing and appliance codes on fixtures and appliances including toilets (1.6 gal/flush), showerheads (2.5 gal/minute), and washing machines (lower water use) on existing and future accounts.

## **Water Facilities**

### **Treatment Plants**

The District operates two water treatment plants. The Nunes Water Treatment Plant, located on Carter Hill northeast of Half Moon Bay, was opened in 1982 with a capacity of 2.5 mgd. The Nunes WTP has been expanded as part of the Crystal Springs Project and now has a capacity of 4.5 mgd. The Nunes WTP treats water from Pilarcitos Lake, Crystal Springs Reservoir, and the Pilarcitos Well Field. The Denniston Water Treatment Plant, in operation since 1974, is located above Denniston Creek and has the capacity of 1.0 mgd. It treats water from both surface and groundwater from the Denniston Project.

### **Storage and Distribution**

The District has ten treated water storage tanks with a total capacity of 7.65 mg. They are located on the hillsides at eight separate sites (See Half Moon Bay Tanks, Granada Tanks and Alves Tank on Figure 2). The District's other major facilities include a network of transmission and distribution pipelines. The major transmission pipelines are shown on Figure 2. The transmission pipeline from Pilarcitos Lake, which is the District's largest source of supply during peak demand periods in the summer and fall, has a capacity of 1,889 gpm. Treated water is distributed from the treatment plants to two major geographical zones via 8-, 10-, 12- and 16-inch transmission lines.

As pipeline ages and becomes more susceptible to leaks, the District implements an extensive pipeline replacement program. All old pipelines are replaced with new iron ductile pipe to reduce leaks and minimize loss within the distribution system.

### **Supply Yields**

In years of normal precipitation, the District estimates that all four sources of supply will have an average yield of 1,091 mg (3,348 AFY). This assumes that 800 mg (2,456 AFY) is purchased from SFPUC (Pilarcitos Lake and Crystal Springs Reservoir), and that 159 mg (540 AFY) is available from Denniston surface water, 60 mg (184 AFY) from Denniston groundwater and 55 mg (168 AFY) from the Pilarcitos well field.

The "drought yield," or safe yield, from all supply sources is estimated at 800 mg (2,456 AFY) annually. Drought yield is defined as the amount of water that can reasonably be expected to be available during periods of severe drought such as in 1976-77 and 1988-1992. The District's calculation of safe yield for SFPUC sources are based on the terms of the 1984 master contract with SFPUC less 20% mandatory rationing which has been imposed by the SFPUC during recent droughts.

### **Exchange and Transfer Opportunities**

Since completion of the Crystal Springs Project in 1994, the District has had a direct supply from the San Francisco Public Utilities Commission's large Hetch Hetchy system. This has ended the District's exclusive dependence on unreliable local supplies. No additional water exchanges with other agencies are anticipated.

## **Efforts to Minimize Imported Water and Maximize Local Resources**

The District has undertaken several management strategies to minimize imported water from SFPUC and maximize local resources. In June of 2003, the District, along with Todd Engineers and Kennedy-Jenks Consultants finalized a comprehensive study for developing lower Pilarcitos Creek groundwater basin. If a well field were fully developed in lower Pilarcitos Creek groundwater basin, the District could potentially increase its local water supply by a range of 396-795 AFY (depending on dry or wet season). The quality of water produced from five test wells in lower Pilarcitos Creek groundwater basin found water to be suitable for potable uses when blended (ratio of 3:1) at the Nunes Water Treatment Plant with water from existing sources of supply.

Local water supply is also being maximized through recent funds added in the budget for restoring and maintaining the upper Pilarcitos Creek well field. The wells in upper Pilarcitos Creek have an average normal yield of 184 AFY (depending on stream flow), however due to aging pump components, the District recently only pumps an average of 119 AFY. The water rights permit for Pilarcitos Creek allow the District to pump a maximum of 359 AFY. By restoring the wells and implementing an ongoing maintenance program, the District plans to significantly increase water supply from this source.

In April of 2005, the District filed for a 1-year permit with the San Mateo County Planning and Building Division and the Regional Water Quality Control Board to reinstate an annual maintenance and dredging program for Denniston Creek. The District was granted the permit and is waiting on approval from the Department of Fish and Game. Back in the 1990's, the District dredged Denniston Creek annually, however, it has been over three years since the last permit was approved.

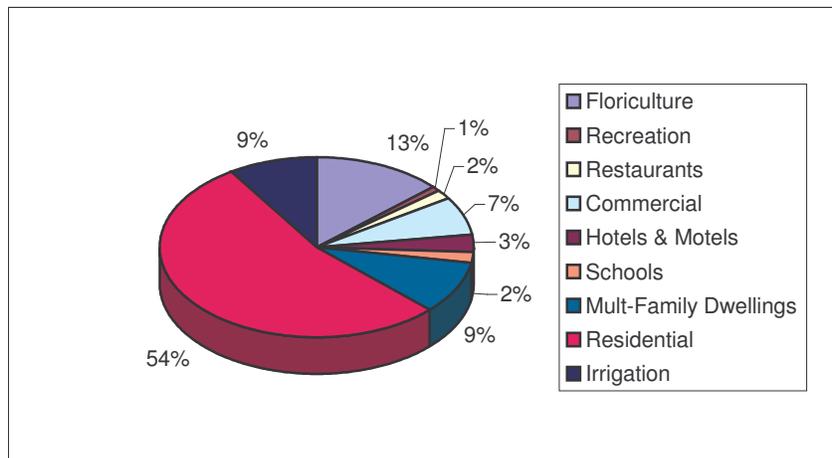
The District is proposing to reinstate an annual maintenance and dredging program around the water supply intake pipes at the Denniston Water Treatment Plant on Denniston Creek. Plans call for the removal of 400 cubic yards of sediment annually for five consecutive years, beginning in 2005. The two to three days of work would be carried out in September or October of each year in order to avoid the breeding seasons of special status animals that may be present in the creek corridor. Although dredging will not currently increase the quantity of water that is treated at the Denniston Water Treatment Plant, it will significantly increase the quality of water.

Finally, the District currently diverts no water from San Vicente Creek, which is under the same water rights permit as Denniston Creek. Utilization of this source of supply requires a pump station at the point of diversion, a pipeline from the pump station to the existing Denniston Pump Station, and expansion of the Denniston water treatment plant. It is estimated that 50-100 mgd (153 –307 AFY) could potentially be diverted from San Vicente Creek. This source of supply varies dramatically with rainfall and weather. Last year the District reapplied to the State Water Resources Control Board to extend the water rights permit for Denniston and San Vicente Creeks. At this time the permit is still pending renewal.

## VI. Water Use

The District's water use is strictly for retail purposes and does not supply water for saline water intrusion barriers, groundwater recharge, or conjunctive use. For tracking and billing purposes, the District breaks down water use into eleven specific customer categories. A summary of the District's customer categories and their annual water use for 2004 is illustrated in Figure 4 below.<sup>2</sup>

**Figure 4: 2004 Water Sales by Category**



### Past, Current, and Projected Water Use by Category

Water use in general is inherently variable. Usage is dependent on a number of factors such as weather, climate, season, day, hour, and between customer categories. Although some water use patterns are constant, the District also pays close attention to peak demands during the hour, day and month. Customer category patterns and peak usages are incorporated in the District's long term planning for future water supply and demand. Using data from the DSS End Use Model, the projected number of accounts for most customer categories is shown below in Table 8.

**Table 8: Projected Water Accounts by Customer Category**

	2000	2005	2010	2015	2020	2025	2030
Single Family	4,600	4,948	5,299	5,570	5,841	6,056	6,271
Multi Family	642	691	740	777	815	845	875
Commercial	269	280	294	307	317	327	338
Institutional	18	19	21	22	23	24	25
Irrigation	41	44	47	50	52	54	56
Floriculture	37	40	43	45	47	49	50
Business	58	60	63	66	68	71	73
Municipal	49	53	56	59	62	65	67
<b>TOTAL</b>	<b>5,714</b>	<b>6,135</b>	<b>6,563</b>	<b>6,896</b>	<b>7,225</b>	<b>7,491</b>	<b>7,755</b>

<sup>2</sup> The two customer categories of Marine Related and Beaches & Parks were both under 1% of the total annual water sales and therefore not significant enough to appear in the graph. On average, both Marine Related and Beaches & Parks constitute 0.5% of the total annual water sales.

Table 9 below shows the projected water deliveries for most customer categories. Projections are also based on the DSS End Use Model. Based on the results, over the next 25 years, the District estimates a 15% increase in demand to meet the future needs of customers.

**Table 9: Projected Water Deliveries by Customer Category - AFY**

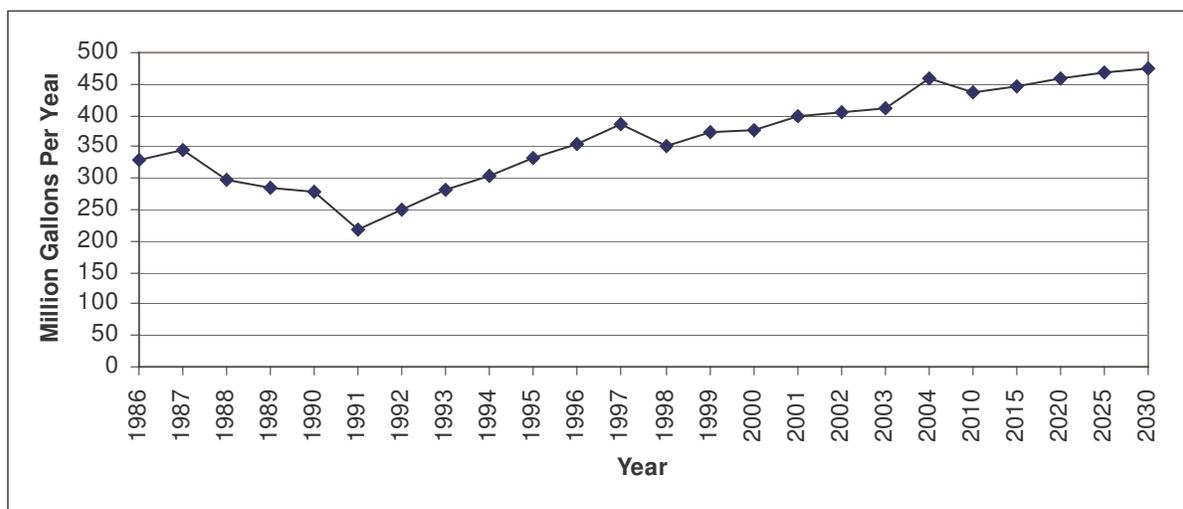
	2000	2005	2010	2015	2020	2025	2030
Single Family	1,223	1,289	1,344	1,373	1,407	1,432	1,460
Multi Family	221	232	242	247	252	257	261
Commercial	180	182	187	191	194	198	203
Institutional	52	56	60	63	66	68	71
Irrigation	223	240	258	271	284	294	305
Floriculture	412	443	475	499	523	543	562
Business	93	97	102	106	109	112	116
Municipal	273	293	314	330	346	359	372
<b>TOTAL</b>	<b>2,677</b>	<b>2,832</b>	<b>2,982</b>	<b>3,080</b>	<b>3,181</b>	<b>3,263</b>	<b>3,350</b>

### Water Demand by Customer Category

#### Residential

Currently, the District’s service area contains approximately 4,860 single-family units and 1,189 multi-family units.<sup>3</sup> The District’s single-family residential water use sector makes up approximately 54% of the total water demand per year while the multi-family residential sector constitutes 8.9%. The residential sector has been very responsive to critically dry periods that have occurred in the past. For example, water consumption dropped by 33% in 1977, the first year in which water rationing was instituted. Figure 5 below illustrates residential water use over the past 20 years and includes projected demands through 2030.

**Figure 5: Past, Current and Projected Residential Water Use**



<sup>3</sup> Based on DSS Model developed for the Capital Improvement Program for the SFPUC Regional Water System. February 2005.

## Industrial

The largest industry in the District's service area is agriculture, specializing in floriculture. Flower and nursery crops are the areas largest agricultural product and also the second largest water user class. The floriculture industry is the top employer of people here on the coast.<sup>4</sup> On average, the floriculture industry constitutes 16.5% (approximately 417 AFY) of the annual water use for the District.

## Commercial

The second largest industry on the coast is tourism followed by commercial fishing. The District's commercial sector is mainly comprised of small local businesses, restaurants and hotels and motels. On average, the commercial industry makes up 6.8% of the total annual water use. The District's service area has 55 restaurants and uses 1.5% of the total annual water demand. In addition, 3% of total water sales is contributed to the 19 hotels, motels, and bed and breakfast establishments. As an effort to target water conservation in the commercial sector, the District participated in the Pre-Rinse Spray Valve Installation Program. This program is offered through the SFPUC and BAWSCA and offered free water conserving kitchen spray valves to restaurants and food service providers.

## Institutional

The institutional sector consists of the eight major public and private schools with individual campuses in the District's service area. Schools constitute approximately 2% of the total annual water use.

## Irrigation

The District currently has 26 customers with 49 active dedicated irrigation meters. Irrigation water use generally makes up 7% of the total annual water use. Most dedicated meters are used for irrigating school athletic fields, a large cemetery, homeowner's associations, city parks, and small commercial sites. As part of the District's landscape water conservation program, all 26 customers with dedicated landscape irrigation meters receive bi-monthly water use budgets, which compare the customer's actual water use with an estimated budgeted water based on landscape size, historic evapotranspiration (ET<sub>o</sub>), precipitation, and climate.

## System Losses

More water must be produced than sold due to water lost between the treatment plants and the customers' water meters. The District terms this "lost" water as unmetered water. During 2004, the amount of unmetered water was very small, only 7.3% of water sales. On average, the District's unmetered water use is approximately 7.9% per year.

The amount of unmetered water losses cannot be totally eliminated because of unavoidable authorized uses. Authorized unmetered water losses include fire fighting and training, pipeline flushing, pump seal water use, and other minor miscellaneous uses. However, there are also unauthorized water losses that the District seeks to minimize. Unauthorized uses include pipeline leaks, water meter inaccuracy, tank overflows, stolen water from fire hydrants, and through unmetered connections to the system. The District has an on-going program to reduce the amount

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<sup>4</sup> Half Moon Bay Chamber of Commerce and Visitors Bureau. March 29, 2005

of unmetered water lost by managing pipeline leakage and water meter inaccuracy. Both programs are briefly outlined below:

(A) Pipeline Leakage: While there are no known pipelines that are currently losing a significant amount of water from leakage, there are numerous identified areas with old pipelines that often develop minor leaks resulting in small losses of water. The most significant leakage occurs from two sources: (1) old steel transmission pipelines, all of which are expected to be replaced within the next several years, and (2) old cast iron and old small diameter galvanized steel distribution system pipelines which are also proposed for replacement. Implementation of these pipeline replacement projects is dependent upon funding as part of the annual Capital Improvement Program. While all observed pipeline leaks are repaired by the District field staff, water from small leaks percolates downward into the soil and the leak remains undetected. In 2004, approximately 7,465 feet of pipeline was replaced to reduce leaks.

(B) Water Meter Inaccuracy: The term "meter inaccuracy" describes water that flows through a water meter but is undetected. These losses occur in old water meters that register a flow lower than actual as they become worn out at the end of their useful life, and in all meters when the flow rate through them is below the low registration capability of the meter. The District budgets \$15,000 a year for the meter replacement program and replaces between 100 and 250 old meters each year. The meter replacement program as currently budgeted will maintain the maximum meter age at 15 years, a duration which is considered acceptable from an accuracy standpoint for residential size meters. Larger sized commercial meters should be replaced more frequently such as every 5 years.

## VII. Wastewater and Recycled Water

The Sewer Authority Mid-Coastside (SAM) Wastewater Treatment Plant (WWTP) provides secondary wastewater treatment to the City of Half Moon Bay as well as two other coastal sanitary districts (Granada Sanitary District and Montara Sanitary District). The SAM regional system includes over 100 miles of sewers (gravity, force mains, and transmission pipelines), over 20 pump and lift stations, a treatment plant and an ocean outfall. SAM's original WWTP, which started operation in 1984, provided secondary treatment capacity for up to 2 mgd. In 1999 a major plant upgrade was completed and expanded the treatment capacity to 4 mgd, which increased the plant's ability to handle peak wet weather flows.

The WWTP is currently designed to accommodate average dry weather flows of 4 mgd and peak hour wet-weather flows of 15 mgd. The WWTP's current average dry weather discharge is 1.65 mgd. Treated wastewater is discharged to the Pacific Ocean through a 20-inch pipeline, which extends 1,900 feet offshore to a depth of 40 feet. The SAM WWTP operates under a Waste Discharge Requirements (WDR) and a National Pollutant Discharge Elimination System (NPDES) Permit issued by the Regional Water Quality Control Board.<sup>5</sup>

### Collection and Treatment System Description

Wastewater generated within the District's service area is collected and conveyed by pump stations and transmission lines. SAM WWTP processes consist of primary treatment and secondary treatment. Primary treatment includes screening, grit removal and primary sedimentation. Secondary treatment consists of conventional activated sludge treatment and secondary clarification prior to ocean discharge. The following is a short description of each of the treatment processes at the SAM WWTP.<sup>6</sup>

- (A) **Headworks:** The headworks provide preliminary treatment of the incoming raw sewage to the SAM plant. Sewage passes through two mechanically cleaned bar screens to remove debris. Debris removed from the screens is compacted, dried and taken to the landfill. Following the bar screens, the flow is pumped to the grit removal tanks. Wastewater is pumped with eight self-priming pumps and are equipped with variable speed drives to allow pumping over the range of 0.3 mgd in the early morning to 15.0 mgd during peak hour wet weather flow.
- (B) **Grit Removal:** The grit removal tanks use air bubbles to separate out non-organic materials such as sand and pebbles while allowing the organic material to pass on for treatment.
- (C) **Primary Sedimentation Basins:** After grit removal, the flow is moved to the three primary sedimentation basins where the organic materials (sludge) from the wastewater can settle to the bottom. Once the sludge has settled to the bottom, it is pumped to the anaerobic digesters for further treatment.
- (D) **Aeration Basins:** The clarified flow from the sedimentation basis is continually aerated with small bumbles to grow a culture of bacteria and microorganisms, which

<sup>5</sup> Preliminary SAM Water Reuse Feasibility Study. Carollo Engineers. July 2005

<sup>6</sup> Sewer Authority Mid-Coastside. Regional Wastewater Treatment Facility informational brochure.

assimilate the dissolved and suspended wastes. The culture, known as “mixed liquor” forms large particles that can be settled out from the flow.

- (E) Secondary Clarifiers: The flow is then moved to the secondary clarifiers where the particles from the mixed liquor settle to the bottom and is returned to the aeration basins to seed the incoming flow with the active culture. The clear water above flows to the chlorine contact tanks for further treatment.
- (F) Chlorine Contact Tanks: Here, the flow is disinfected with liquid sodium hypochlorite.
- (G) Effluent Pump Station: The pump station uses three vertical turbine pumps to convey the final effluent to the ocean via a deepwater outfall. Sodium bisulfite solution is added at the pump station to remove chlorine and prevent toxicity to fish and other marine life.
- (H) Ocean Outfall: Final effluent is dispersed to the ocean waters through the deepwater ocean outfall.

Table 10 indicates the past, current and projected amount of water collected and treated in the District’s service area. Table 11 projects the amount of wastewater that is disposed of through the ocean outfall. Projections are based SAM WWTP effluent data for 2004.

**Table 10: Wastewater Collection and Treatment - AFY**

	2000	2005	2010	2015	2020	2025	2030
Wastewater collected & treated	1,634	1,764	1,819	1,880	1,942	1,992	2,044

**Table 11: Disposal of Wastewater - AFY**

Method of Disposal	Treatment Level	2000	2005	2010	2015	2020	2025	2030
Ocean Outfall Effluent	Secondary	2,303	2,438	2,565	2,650	2,739	2,809	2,882

**Current Recycled or Desalinated Water Use**

At this time, the District does not produce or sell recycled or desalinated water to its customers.

**Potential Uses of Recycled Water**

In 2002, the District and Carollo Engineers completed a water reclamation feasibility study that analyzed the use of recycled water for two large turf irrigation customers in the District’s service area. The study looked at potential recycled water for an 80-acre cemetery and a homeowner’s association with two 18-hole golf courses. The feasibility study analyzed a variety of recycled water parameters such as water quality, treatment, retrofit processes, and cost. The study found that the SAM WWTP has adequate space at its existing facility to include recycled water treatment. The SAM plant would have to be upgraded to include coagulation and flocculation, filtration, disinfection, and storage and pumping of recycled water. In 2002, total improvements to the SAM WWTP were estimated at \$1.78 million. A total cost of the project was estimated at \$10.84 million (including transmission pipeline). Operation and maintenance costs are estimated

at \$315,000 a year. Based on the 2002 feasibility study, the SAM WWTP could produce 1.0 mgd (1,120 AFY) of recycled water.<sup>7</sup>

In July of 2005, the SAM WWTP released a preliminary draft of their water reuse feasibility study also produced by Carollo Engineers. This recent feasibility study analyzes two options for recycled water use and upgrades to the SAM WWTP. The study gives complete project descriptions for both options and site plan layout, it reviews alternative process improvements for various recycled water qualities, bench scale water quality testing, pilot testing for facilities optimization, and analyzes cost and funding assistance.

The SAM WWTP preliminary feasibility study highlights three potential recycled water uses. Groundwater recharge is a potential recycled water use, however it was not considered in detail due to the cost of using reverse osmosis to eliminate pathogens and salinity. These include:

- Turf irrigation (golf courses, cemeteries, parks)
- Agricultural irrigation (crops, nurseries, cut flowers, tree farms).
- Stream flow augmentation (Pilarcitos Creek).

### Projected Use of Recycled Water

Preliminary results for the 2005 study estimate that the SAM WWTP can produce 1.65 mgd (1,848 AFY) dry weather average of recycled water and 2 mgd (2,240 AFY) annual average of recycled water. Plant upgrades are expected to cost \$5-5.5 million with an annual \$300,000 - \$350,000 in operation and maintenance costs. A brief description of each option discussed in the feasibility study is listed below in Table 12<sup>8</sup>:

**Table 12: Options Summary for SAM WWTP**

Option	Name	Tertiary Flow (mgd)		Planned Type of Use
		Summer	Winter	
1	Seasonal Irrigation	1.65	0.0 (discharge to ocean)	<ul style="list-style-type: none"> <li>• Irrigation</li> <li>• Stream Flow Enhancement</li> </ul>
2	Seasonal Irrigation and year round stream flow augmentation	3.0	3.0 (storage then supplement creek)	<ul style="list-style-type: none"> <li>• Irrigation</li> <li>• Stream Flow Enhancement</li> </ul>

There are two large turf irrigation customers that could potentially benefit from using recycled water. The first is a homeowner’s association with two 18-hole golf courses in Half Moon Bay that are located approximately three miles south of the SAM WWTP. One course is intertwined within a housing subdivision and the other stands separately. Together, both golf courses irrigate an area of 210 acres. Currently, both golf courses receive irrigation water from four wells supplied by Pilarcitos Creek. Occasionally the golf courses purchase water from the District

<sup>7</sup> Water Reclamation Program: Preliminary Economic Feasibility Study. Coastside County Water District and Carollo Engineers. August 2003.

<sup>8</sup> Draft of SAM Water Reuse Preliminary Feasibility Study. Carollo Engineers. July 2005.

during prolonged hot and dry periods. No additional water supply would be produced for the District’s use if the golf courses used recycle water.

The second potential customer to use recycled water for turf irrigation is a cemetery located approximately 5 miles east and 1,100 feet in elevation above the SAM WWTP. The cemetery currently irrigates approximately 80 acres of land, and plans on eventually expanding throughout its 505-acre property. Water usage has averaged about .20 mgd over an 8-month irrigation period (approximately 150 AFY). The cemetery is the District’s second largest customer and directly receives raw SFPUC water to irrigate. The use of recycled water at the cemetery would eliminate high quality potable water that is used solely for turf irrigation. By using recycled water at the cemetery, the District would also be able to increase water availability during dry periods.<sup>9</sup>

**Table 13: Potential Uses of Recycled Water - AFY**

User type	Treatment Level	2005	2010	2015	2020	2025	2030
Golf Course Irrigation	Tertiary	0	430	430	430	430	430
Cemetery Irrigation	Tertiary	0	150	155	160	165	175
<b>Total</b>		0	580	585	590	595	605

### Description of Potential Financial Incentives

Since the District does not currently offer recycled water to its customers, there are no financial incentives used to encourage recycled water use. Several programs may be available for grants and loans related the construction and development of recycled water. Californians passed bond measures such as Proposition 13 and Proposition 50, which allocated bond money for water quality, supply, and safe drinking water projects, including recycled water projects. The District could also seek financial assistance through the Calfed Bay-Delta Authorization Act and the California Department of Water Resources’ Consolidated Water Use Efficiency Program.

Projects for which water recycling is utilized for the purpose of water supply (as opposed to pollution control) may be funded by either the State Revolving Fund for Construction of Wastewater Treatment Facilities (SRF) or the State Water Resources Control Board’s (SWRCB) Water Recycling Loan Program (WRLP). Water supply recycling projects are placed in the Priority Class C as water recycling projects that are cost effective when compared to the development of new sources of water. These projects must meet the requirements contained in the WRLP guidelines, as well as the requirements of the SRF policy. Water recycling in Half Moon Bay meets Water Recycling Project Category 1, new water supply, and is therefore eligible for up to \$15 million from the WRLP contingent upon fund availability. Through the SRF, the District could also obtain construction grants and loans for funding up to \$5 million (25 percent matching).<sup>10</sup>

<sup>9</sup> CCWD Water Reclamation Program: Preliminary Economic Feasibility Study. Carollo Engineers, August 2003.

<sup>10</sup> Draft of SAM Water Reuse Feasibility Study. Carollo Engineers. July 2005.

## VIII. Water Supply and Demand

### Water Supply Projects

The District believes that as the community's need for future water supply is identified, it will be able to satisfy the requirements of all applicable regulatory agencies. The City of Half Moon Bay is currently in the process of updating its Local Coastal Plan and the Land Use Plan. Currently, the City has not provided the District with an estimate of buildout demand. As with developing any new source of supply, there are a number of potential regulatory impediments. For instance, as most projects to increase water supply would be considered "development" as defined in the Coastal Act, we anticipate the necessity of obtaining coastal development permits. In addition, any supply project would have to be evaluated for potential environmental impacts under CEQA and mitigated accordingly.

In an effort to meet increasing population and demand, the following projects, or some combination thereof, can provide sufficient supplies to satisfy buildout demands:

- (A) Denniston Project. The District's water rights permit allows the diversion of 2.0 cubic feet per second (cfs) from Denniston Creek and 2.0 cfs from San Vicente Creek.

Currently water is diverted from Denniston Creek, and following treatment it is distributed to customers in the Princeton and El Granada areas. Water from the Denniston Project is currently not conveyed into Half Moon Bay because the transmission pipeline between the Denniston supply source and Half Moon Bay is too small. However, when the El Granada Transmission Pipeline Replacement Project is completed at the end of 2006, the District will then be able to convey Denniston water into Half Moon Bay (Note: an additional pump station and other improvements will be required). It is estimated that an additional 50-100 mgy (million gallons per year) will then be able to be diverted from Denniston Creek.

The District currently diverts no water from San Vicente Creek. Utilization of this source of supply requires a pump station at the point of diversion, a pipeline from the pump station to the existing Denniston Pump Station, and expansion of the Denniston water treatment plant. It is estimated that 50-100 mgy will be able to be diverted from San Vicente Creek if construction of the facilities are required.

In addition to the above-mentioned permit requirements, these projects will require licenses from the State Water Resources Control Board, as well as permits from the Department of Fish & Game.

- (B) Pilarcitos Well Field. The District's license for use of the Pilarcitos well field allows a maximum annual withdrawal of 117 mg (359 AFY). During the 1970's and early 1980's production from the wells during non-drought years was always above 60 mgy, often above 80 mgy, and sometimes over 100 mgy. Since 2001, production has dropped below 40 mgy even though rainfall has been above normal. It is estimated that production from this source could be increased by 30-40 mgy (92-122 AFY) by

implementing a program to construct new wells to replace poorly producing wells and replace old inefficient pumps.

- (C) Lower Pilarcitos Creek Groundwater Study. The District has constructed a series of test wells and completed a feasibility study for using the Lower Pilarcitos Creek groundwater basin as a source of water supply. The feasibility study report states that the estimated annual production from the completed project would range from 129 mgd (396 AFY) during drought years to 259 mgd (795 AFY) during normal precipitation years.
- (D) Water Conservation. Estimated annual savings are 0.183 mgd (205 AFY). A detailed look at water conservation programs is analyzed later in Section X.
- (E) Water Recycling. For both the golf course (two courses) and the cemetery, the estimated average savings during irrigation season are .77 mgd (567 AFY) and estimated peak savings during irrigation season are 1.09 mgd (803 AFY).

In addition to these supply projects, a number of infrastructure improvements may be required in order to meet buildout treatment and distribution capacity demands:

- (1) Crystal Springs Pump Station – it may be necessary to replace the existing pumps with larger pumps.
- (2) Nunes Water Treatment Plant – a plant enlargement may be necessary.
- (3) Main Street Pipeline Replacement – replace existing 10-inch diameter pipeline with 16-inch pipeline from Lewis Foster Drive to and under Pilarcitos Creek.
- (4) Bridgeport Drive Pipeline Replacement – replace or parallel 3,400 feet of existing 8-inch pipe in Clipper Ridge to increase the flow capacity from the Denniston Project southward.
- (5) Denniston Water Treatment Plant – expand the capacity of the plant and complete other modifications required to meet new water quality regulations. Construct an additional pump station to increase flow capacity southward.
- (6) Complete pipeline replacement projects in the current five-year Capital Improvement Program
  - Carter Hill East Pipeline Replacement Project
  - Avenue Cabrillo Pipeline Replacement Project
  - Highway 1 South Pipeline Replacement Project
- (7) El Granada Pump Stations and Tanks – Complete piping modification allowing tanks to be taken out of service for painting.
- (8) 2-inch Diameter Pipeline Replacement – replace all existing 2-inch pipelines to increase fire flows.

- (9) Cast Iron Pipeline Replacement – Replace all old cast iron pipelines in which breaks are occurring.
- (10) Hazen’s Tank Replacement – replace this small, old redwood storage tank.

### **Water Quality**

As the District finds a need to expand its water supply and capability in the future, finding new water sources that have satisfactory water quality will be important criteria for selection. All of the District’s water sources receive full treatment in accordance with Federal and State standards. The District’s water quality control program takes over 11,000 test samples throughout the year to ensure water quality process control.

Each year the District reports water quality test results to its customers through the Consumer Confidence Report, also known as the Annual Water Quality Report. The report includes results of treated water tests from both the Nunes Water Treatment Plant and the Denniston Water Treatment Plant and results from raw source water tests from the Denniston Wells, Pilarcitos Wells, Pilarcitos Lake, Crystal Springs Reservoir and Denniston Reservoir.

### **Supply Reliability**

The District receives water from the City and County of San Francisco’s regional system, operated by the San Francisco Public Utilities Commission (SFPUC). This supply is predominantly from the Sierra Nevada, delivered through the Hetch Hetchy aqueducts, but also includes treated water produced by the SFPUC from its local facilities in Alameda and San Mateo Counties.

In 1984 the District, along with 29 other Bay Area water suppliers signed a Settlement Agreement and Master Water Sales Contract (Master Contract) with San Francisco, supplemented by an individual Water Supply Contract. These contracts, which expire in June 2009, provide for a 184 million gallon a day (mgd, expressed on an annual average basis) Supply Assurance to the SFPUC’s wholesale customers collectively. The District’s individual Supply Assurance is 2.1 mgd (or approximately 2,456 AFY). Although the Master Contract and accompanying Water Supply Contract expire in 2009, the Supply Assurance (which quantified San Francisco’s obligation to supply water to its individual wholesale customers) survives their expiration and continues indefinitely, as noted previously in Section V: Water Supply.

The SFPUC can meet the demands of its retail and wholesale customers in years of average and above average precipitation. The Master Contract allows the SFPUC to reduce water deliveries during droughts, emergencies and for scheduled maintenance activities. In 2000, the SFPUC and all wholesale customers adopted an Interim Water Shortage Allocation Plan to address the allocation of water between San Francisco and wholesale customers in aggregate and among individual wholesale customers during water shortages of up to 20% of system-wide use. This plan, which also expires in June 2009, is described in more detail in Section IX: Water Shortage Contingency Plan.

BAWSCA and its member agencies look for opportunities to work with other water agencies, including the SFPUC and SCVWD, and leverage available resources in implementing water use

efficiency projects. For example, in 2005, the SFPUC and BAWSCA entered into a Memorandum of Understanding (MOU) regarding the administration of a Spray Valve Installation Program. Through this MOU, SFPUC and BAWSCA will work cooperatively to offer and coordinate installation of water conserving spray valves to food service providers in BAWSCA member service areas. Recently the Bay Area Efficient Clothes Washer Rebate Program, a single rebate program offered by all major water agencies in the greater Bay Area including BAWSCA and the SFPUC, was recipient of \$1.5M in Proposition 50 grant funds for implementation as early as FY 2006/2007.

BAWSCA and its member agencies will continue to look to partner with other agencies to develop regional water conservation efforts that look beyond local issues of supply and cost-effectiveness to examine costs, benefits and other related issues on a system-wide level. The goal is to maximize the efficient use of water regionally by capitalizing on variations in local conditions and economies of scale.

Table 14 describes the District’s projected water supply for three multiple dry years. The SFPUC projection is based on the 2005 purchase request of 2,117 AF. Dry year projections from SFPUC are determined from system wide losses of 10% and 20%. The District’s projections for local water supply sources are based on historic losses in local sources due to drought. The most significant loss to local water supply caused by drought occurred from 1974-1976 and 1988-1990.

**Table 14: Projected Supply for Three Multiple Dry Years - AFY**

Water Source	Average / Normal Water Year	Single Dry Water Year	Multiple Dry Water Years		
			Year 1	Year 2	Year 3
<b>SFPUC</b>	2,117	1,770	1,770	1,535	1,535
<b>Surface Water</b>	540	410	388	280	351
<b>Groundwater</b>	336	255	312	315	288
<b>Total</b>	2,993 <sup>11</sup>	2,435 <sup>12</sup>	2,470 <sup>13</sup>	2,130 <sup>14</sup>	2,174 <sup>15</sup>

As noted earlier in this UWMP, SFPUC has assessed its water supply reliability capabilities during dry years. The assessment of capabilities of the Hetch Hetchy system to provide water during single and multiple dry years was based on an analysis of historic hydrological data from 1920 through 2002. The results of the analysis are shown below in Table 15.

<sup>11</sup> Assumes normal yields from local water supply sources and a 2005 purchase request of 2117 AFY from SFPUC.

<sup>12</sup> Assumes 24% reduction in both surface water and groundwater. Also includes 10% system wide shortage from SFPUC.

<sup>13</sup> Assumes 28% reduction in surface water and 7% reduction in groundwater sources. Includes 10% system wide shortage from SFPUC.

<sup>14</sup> Assumes 48% reduction in surface water and 6% reduction in groundwater sources. Includes 20% system wide shortage from SFPUC.

<sup>15</sup> Assumes 35% reduction in surface water and 14% reduction in groundwater sources. Includes a 20% system wide shortage from SFPUC.

**Table 15: Future SFPUC Deliveries for Single Dry Year and Multiple Dry Years - AFY**

Year	Purchase Request	Single Dry Year (10%)	Multiple Dry Water Years		
			Year 1 (10%)	Year 2 (20%)	Year 3 (20%)
2010	2,980	2,980	2,980	2,129	2,129
2015	3,081	3,081	3,081	2,151	2,151
2020	3,182	3,182	3,182	2,218	2,218
2025	3,272	3,272	3,272	2,297	2,297
2030	3,350	2,364	2,364	2,061	2,364

**Supply Verses Projected Demand**

Tables 16, 17, and 18 represent the District’s best estimate for future water supply production and future water demand. These estimates are based on an expected reduction from local supply sources due to permitting, water quality, and/or drought issues. The District estimates that if local water supply sources are reduced due the above factors, then the District will need to compensate by finding new sources of supply (i.e. recycled water and or implementing more stringent conservation measures) and gradually increasing the amount of water purchased from the SFPUC.

**Table 16: Projected Normal Water Supply - AFY**

	2010	2015	2020	2025	2030
<b>Supply</b>	3,293	3,405	3,506	3,565	3,632
% of year 2005	100.0%	108.0%	111.7%	115.0%	116.9%

**Table 17: Projected Normal Water Demand - AFY**

	2010	2015	2020	2025	2030
<b>Demand</b>	3,249	3,361	3,473	3,473	3,585
% of year 2005	93.1%	90.0%	87.1%	87.1%	84.4%

**Table 18: Supply vs. Demand Comparison - AFY**

	2006	2007	2008	2009	2010
<b>Supply totals</b>	3,061	3,061	3,061	3,061	3,293
<b>Demand totals</b>	3,025	3,025	3,025	3,025	3,249
<b>Difference</b>	36	36	36	36	44
Difference as % of Supply	1.2%	1.2%	1.2%	1.2%	1.3%
Difference as % of Demand	1.2%	1.2%	1.2%	1.2%	1.4%

**Table 18: Supply vs. Demand Comparison – AFY (continued)**

	2011	2012	2013	2014	2015
<b>Supply totals</b>	3,293	3,293	3,293	3,293	3,405
<b>Demand totals</b>	3,249	3,249	3,249	3,249	3,361
<b>Difference</b>	44	44	44	44	44
Difference as % of Supply	1.3%	1.3%	1.3%	1.3%	1.3%
Difference as % of Demand	1.4%	1.4%	1.4%	1.4%	1.3%

	2016	2017	2018	2019	2020
<b>Supply totals</b>	3,405	3,405	3,405	3,405	3,506
<b>Demand totals</b>	3,361	3,361	3,361	3,361	3,473
<b>Difference</b>	44	44	44	44	33
Difference as % of Supply	1.3%	1.3%	1.3%	1.3%	0.9%
Difference as % of Demand	1.3%	1.3%	1.3%	1.3%	1.0%

	2021	2022	2023	2024	2025
<b>Supply totals</b>	3,506	3,506	3,506	3,506	3,565
<b>Demand totals</b>	3,473	3,473	3,473	3,473	3,473
<b>Difference</b>	33	33	33	33	92
Difference as % of Supply	0.9%	0.9%	0.9%	0.9%	2.6%
Difference as % of Demand	1.0%	1.0%	1.0%	1.0%	2.6%

	2026	2027	2028	2029	2030
<b>Supply totals</b>	3,565	3,565	3,565	3,565	3,632
<b>Demand totals</b>	3,473	3,473	3,473	3,473	3,585
<b>Difference</b>	92	92	92	92	47
Difference as % of Supply	2.6%	2.6%	2.6%	2.6%	1.3%
Difference as % of Demand	2.6%	2.6%	2.6%	2.6%	1.3%

## IX. Water Shortage Contingency Plan

The SFPUC can meet the demands of its retail and wholesale customers in years of average and above-average precipitation. The Master Contract allows the SFPUC to reduce water deliveries to wholesale customers during periods of water shortage. Under the Master Contract, reductions to wholesale customers are to be based on each agency's proportional purchases of water from the SFPUC during the year immediately preceding the onset of shortage, unless this formula is supplemented by a water conservation plan agreed to by all parties.

The Master Contract's default formula discouraged SFPUC's wholesale customers from reducing purchases from SFPUC during periods of normal water supply through demand management programs or development of alternative supplies. To overcome this problem, SFPUC and its wholesale customers adopted an Interim Water Shortage Allocation Plan (IWSAP) in 2000. This IWSAP applies to water shortages up to 20% on a system-wide basis and will remain in effect through June 2009.

The IWSAP has two components. The Tier One component of the IWSAP allocates water between San Francisco and the wholesale customer agencies collectively. The IWSAP distributes water between two customer classes based on the level of shortage as shown in Table 19 below:

**Table 19: Available Water based on a SFPUC System Wide Reduction in Water Use**

Level of System Wide Reduction in Water Use Required	Share of Available Water	
	SFPUC Share	Suburban Purchasers Share
5% or less	35.5%	64.5%
6% through 10%	36.0%	64.0%
11% through 15%	37.0%	63.0%
16% through 20%	37.5%	62.5%

The Tier Two component of the IWSAP allocates the collective wholesale customer share between each of the 26 wholesale customers. This allocation is based on a formula that takes three factors into account, the first two of which are fixed: (1) each agency's Supply Assurance from SFPUC, with certain exceptions, and (2) each agency's purchases from SFPUC during the three years preceding adoption of the Plan. The third factor is the agency's rolling average of purchases of water from SFPUC during the three years immediately preceding the onset of shortage.

The IWSAP allows for voluntary transfers of shortage allocations between SFPUC and any wholesale customer and between wholesale customer agencies. Also, water "banked" by a wholesale customer, through reductions in usage greater than required, may also be transferred. The IWSAP will expire in June 2009 unless extended by San Francisco and the wholesale customers.

The District has also developed its own Water Shortage Contingency Plan (Plan), which was updated in June of 2005. The Plan is readily available to use in any water emergency or water shortage situation. The Plan contains a brief background of the District’s experience in dealing with weather related droughts as well as covers four stages of a water shortage event. The stages range from mild warnings of a water shortage to emergency situations and are as follows: Advisory, Voluntary, Mandatory, and Emergency Curtailment. Table 20 illustrates the four water supply stages and their water reduction goals. Each of the stages discussed in the Plan set clear objectives, recommend a public message, communication actions, internal operating actions, and supply and demand management actions. A complete copy of the District’s Water Shortage Contingency Plan is included in Appendix C.

Mechanisms for determining actual reduction in water use during a water shortage period can be tracked by the current utility billing system. The District can generate custom reports that can track water usage by specific users and customer categories to determine if actual reductions in water consumption have occurred.

**Table 20: Water Supply Shortages and Conditions**

Stage	Water Supply Conditions	% Shortage
Advisory	Low snow pack and precipitation, lack of carryover storage from previous years, reservoir storage and stream inflows are below normal demands.	5-12
Voluntary	Conditions identified in Advisory Stage have not improved; demand levels indicate need for more systematic response.	13-19
Mandatory	Reservoir and stream inflows are still significantly below normal demand. Water rationing is instituted from SFPUC. Reduction goals established in Voluntary Stage have not been met.	20-38
Emergency Curtailment	Critical water shortage situation exists. No improvement in water supply conditions from previous stages.	39 or greater

Table 21 refers to the District’s Ordinance No. 1997-01 that establishes rules and regulations prohibiting wasteful water use during normal water supply situations and providing enforcement thereof. A complete copy of the ordinance is included with the Water Shortage Contingency Plan. If customers are found to be violating any of the measures, the District first responds by sending a notification letter warning the customer of their violation. If the violation continues, a second notification letter is sent with a possible fine. Finally, if the violation continues, a flow restrictor is placed on the customer’s meter until the violation ceases.

**Table 21: Mandatory Water Waste Prohibitions**

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Uncorrected leaks from defective plumbing, sprinklers or irrigation system	Mandatory
Use of water that results in flooding or runoff in gutters or streets	Mandatory
Watering landscape in a manner that allows excess water to run to waste	Mandatory

**Table 21: Mandatory Water Waste Prohibitions (continued)**

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Use of water in non-recirculating decorative fountains	Mandatory
Commercial car washes that do not use recycled water through an on-site filter system	Mandatory
Use of water for washing cars, buses, boards, trailers, or other vehicles through a hand-held hose, unless the hose is equipped with a shut off spray valve	Mandatory

**Drought Penalties and Fees**

During prior water shortage periods, the District implemented excess use fees to residential customers who consumed more water than the average allocation. The fees were determined based on an allocation formula that considered, among other things, the number of residents per residential housing unit. Due to the current computer billing system, the District cannot charge an excess use fee based on an allocation formula. Instead, in the future when a water shortage emergency is declared, the District will implement a drought rate structure that increases the unit price of water to encourage water rationing and conservation. Once the drought situation is over, the District can reinstate the normal rate structure.

In lieu of or in addition to the remedies provided by state law, the District may require installation of a flow-restricting device on the service line of any customer violating District regulations or water use restrictions imposed during a declared water shortage emergency. The violator will be responsible for the cost of installing and removing such devices as shown below in Table 22:

**Table 22: Flow Restricting Device Charges**

Meter Size	Installation Charge	Removal Charge
5/8" to 1"	\$50	\$50
1 1/2" to 2"	\$60	\$60
3" and larger	Actual cost but in no event less than \$80 <sup>16</sup>	Actual cost but in no event less than \$80 <sup>16</sup>

**Revenue Impacts and Expenditures**

Successful water rationing programs lead to reduced water sales and revenues. However, the District expenditures do not decline in proportion to reduced sales because such a large part of the expenditures are related to fixed capital costs or on-going maintenance and operation programs. Consequently, water rates typically increase during years of water shortages when rationing programs are implemented. The administration of a water-rationing program will also

<sup>16</sup> Actual cost shall include all materials, labor, equipment, and overhead charges.

have a definite, but relatively small, impact on the District's general and administrative costs, which must be considered whenever the District's budget is adopted during a period of water shortage.

Revenue from an increased rate structure due to a drought situation will be received if the board declares the need for increased water conservation and water rationing. These additional revenues can be applied toward the increased costs associated with operation of the water system during of a water shortage emergency.

### **Seismic Vulnerability Study**

In 2002, the District finished a Seismic Vulnerability Assessment Study produced by G&E Engineering Inc. Since then, the District has been able to upgrade a number of water system components to increase reliability during a potential catastrophic interruption. All pipeline replacement projects are now designed and implemented with extra thick ductile iron pipeline and restrained joints to help prevent pipeline damage if liquefaction occurs.

Pipeline that leads into the District's storage tanks have also been retrofitted with new seismic resistant pipe. As a precautionary strategy, the District is working on a stockpile of appropriate pipeline sections and mechanical fittings in the event that a major pipeline break occurs in the SFPUC (Crystal Springs or Pilarcitos Lake) or District owned water supply system.

## X. Demand Management Measures

In 1991, the Coastside County Water District signed the *Memorandum of Understanding (MOU) Regarding Urban Water Conservation* developed by the California Urban Water Conservation Council (CUWCC). As a signatory to the voluntary MOU, the District agreed to implement the CUWCC's Best Management Practices (BMPs) for water conservation. The District administers programs which meet or exceed the current BMPs and that promote water use efficiency in the community.

It is the goal of the District to continue to look for regional program opportunities, innovative technologies, and cost effective programs that best utilize its water conservation budget. For FY 2005-2006, the District has a water conservation budget of \$46,500, up 14% from the FY 2004-2005 budget. The District currently implements 12 of the 14 BMPs recommended by the CUWCC and offers additional programs to increase water use efficiency efforts. Copies of the District's BMP reports and are included in Appendix D and well as the BMP Coverage Reports, which can be found in Appendix E of this UWMP.

To help control the amount of water purchased from the SFPUC, the District participated in a study conducted as part of the SFPUC proposed capital improvement program: Wholesale Customer Water Conservation Potential.<sup>17</sup> The study analyzed each wholesale customer's potential water conservation savings based on 75 potential conservation measures. The 75 measures were screened and combined down to 32 measures that met specific criteria. Some of the 32 measures are already implemented by the District through the BMPs, however, some of go beyond the BMP requirements. The potential conservation measures were then grouped into logical programs designated as Program A, B, and C. These Programs were used in estimating future water purchases from the SFPUC. The District chose Program B, with a conservation savings of 0.183 mgd (205 AFY). Program B includes some conservation measures that are already being implemented such as the replacement of toilets, showerheads, washing machines, and other water using fixtures. But Program B also includes conservation measures that go beyond the BMPs requirements.

The following is list of measures being implemented by the District that meet current BMPs. Other programs listed are voluntary conservation efforts that the District implements but are not requirements under the CUWCC's BMPs. These additional measures are cost effective and/or increase public outreach and education. Under most program summaries, there is a "Cost Effectiveness" and "Estimate of Conservation Savings" projection. These estimates were developed from the DSS End Use Model that is apart of the series of technical studies performed in support of the Capital Improvement Program for the SFPUC Regional Water System.

### **Residential Water Audits (BMP 1)**

**Description of Measure:** This program provides site surveys to single-family homes, as well as multi-family dwellings. The residential water survey includes an interior evaluation, which replaces inefficient showerheads, aerators, and flappers. The exterior evaluation provides an irrigation evaluation, measurement of landscape, and a watering schedule.

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<sup>17</sup> Wholesale Customer Water Conservation Potential Technical Report, URS Corporation, Maddaus Water Management, Jordan Jones and Goulding. December 2004.

**Implementation Status:** This District does not currently offer this program due to the following factors: high cost of implementation through an outside consultant, lack of staff and budget to implement the program in-house, and the benefit cost ratio. The District plans to file an exemption with the CUWCC for this BMP due to the estimated costs as show in Table 23.

**Cost Effectiveness:** The measure has a benefit cost ratio of 0.78.

**Estimate of Conservation Savings:** It is estimated that this program will save 0.01 mgd (11 AFY) and has a cost of savings per unit of volume (\$/mg) of \$2,284.

**Table 23: Estimated Residential Water Survey Program Costs**

	2005	2010	2015	2020	2025	2030
Market Penetration	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Program Administration Costs	\$9,105	\$9,751	\$10,250	\$10,749	\$11,145	\$11,540

### Residential Plumbing Retrofit (BMP 2)

**Description of Measure:** The residential plumbing retrofit program provides owners of pre-1992 homes with water efficient showerheads and kitchen and bathroom faucet aerators. Means of distribution are through District outreach events, web site requests, newsletter advertising, and direct distribution through the District office. Total devices distributed for FY 2004-2005 are depicted below in Table 24. This measure began in October of 2004, and since then, the District has replaced 672 showers, 478 kitchen aerators, and 565 bathroom aerators. According to the CUWCC Cost and Savings Study, an estimate of 2,007 gal/yr is saved from replacing old showerheads and 547 gal/yr from replacing old faucet aerators with new efficient ones.<sup>18</sup> Therefore, based on the distribution totals, the District is estimated to have saved a total of 1,919,561 gallons per year or 5.8 AFY.

**Implementation Status:** Implementation of this program originally started in 1980 when the District experienced dry weather years and a decreased water supply. In October of 2004, the District began a direct low-flow showerhead and aerator distribution program to increase public outreach and satisfy BMP 2 requirements. This measure is currently active.

**Program Goals:** The District plans to run this program through approximately 2008 with an annual budget of \$5,000 a year. At the end of 2008, the District will re-evaluate cost effectiveness and market saturation.

**Table 24: Low Flow Device Distribution Program Summary**

Low-Flow Device	2004
Showerheads (2.5 gpm)	672
Kitchen Aerators (2.2 gpm)	478
Bathroom Aerators (1.5 gpm)	565

<sup>18</sup> BMP Cost and Savings Study: Guide to Data and Methods for Cost-Effectiveness Analysis of Urban Water Conservation Best Management Practices. California Urban Water Conservation Council, December 2003.

### **System Water Audits (BMP 3)**

**Description of Measure:** The District tracks the difference between water produced and water sold to its customers. The difference, expressed as a percentage of total water produced, is referred to as unaccounted for water. The generally accepted industry standard for unaccounted for water is from 7%-15%.<sup>19</sup> The percentage of unaccounted for water over the last five years is shown below in Table 25.

**Table 25: Yearly Percentage of Unaccounted for Water**

	2000	2001	2002	2003	2004
Unmetered Water, % of Sales	1.8%	11.6%	5.6%	8.7%	7.3%

The District has an aggressive program to replace old leak-prone water mains. Areas where leaks and main breaks occur at higher frequency are put on a list and prioritized for replacement. The District has replaced over 8,500 feet of water pipeline since last year.

**Implementation Status:** The District has been monitoring unaccounted for water since 1975. The average unaccounted for water is 10.6% of sales over the past 30 years. Since 2000, unaccounted for water has averaged 7%. This measure is currently active.

**Program Goals:** The District strives to have its unaccounted for water well under 9% each year.

### **Metering with Commodity Rates (BMP 4)**

**Description of Measure:** This measure requires metering of water consumption and billing by volume.

**Implementation Status:** The District has been fully metered since 1947 and requires all new development to be fully metered. The District has a budget of \$15,000 a year for its on-going meter replacement program to assure meter accuracy. This measure is currently active.

### **Large Landscape Conservation (BMP 5)**

**Description of Measure:** This measure provides free water use budgets for the District's 24 dedicated landscape meter customers. Each billing cycle (6 times a year), water budgets are prepared based on the customer's consumption and provide a comparison of actual water use versus an estimated water budget that is based on weather, ETo, rainfall, and landscape size. In addition the water use budgets, the District offers free landscape irrigation surveys to all the large landscape customers.

**Implementation Status:** This measure has been providing dedicated landscape meter customers with landscape water budgets since 2002. The District began to offer free landscape water surveys in 2004 and is currently marketing the program to its customers. This measure is currently active.

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<sup>19</sup> Water Resources Planning Manual of Water Supply Practices M50. American Water Works Association, First Addition, 2001, pp 33-34.

**Program Goals:** This measure’s goal is to continuously send bi-monthly water budgets to the dedicated landscape meter customers. The landscape survey component of this measure has a program goal of surveying at least 5 acres of irrigated landscape per year for 10 years.

**Cost Effectiveness:** The water budget program has a benefit cost ratio of 27.28. The landscape water survey program has a community benefit cost ratio of 0.26.

**Estimate of Conservation Savings:** The water budget and landscape survey program are estimated to save a total of 0.04 mgd (44 AFY) and has a cost of savings per unit volume (\$/mg) of \$2,672.

**Residential Washing Machine Rebates (BMP 6)**

**Description of Measure:** Based upon criteria from Energy Star® and the Consortium for Energy Efficiency, Inc., the District participates in a regional program that offers a two-tiered rebate on high-efficiency clothes washers. Currently the District offers \$100 or \$150 rebate (depending on model and efficiency of the washer) to all single-family residences. Since the start of this program, the District has rebated a total of 370 washers (a total of 41 so far for FY 05-06). A breakdown of the rebates issued per year is shown below in Table 26. The CUWCC BMP Cost & Savings Study estimates that the average water savings for high efficiency clothes washer is approximately 5,100 gal/yr. Therefore, with the total of 370 rebates issued to date, this equates to an approximate savings of 1,887,000 gal/yr or 5.8 AFY.

**Implementation Status:** Implementation of this program began in 2001 and is currently active.

**Program Goals:** In January of 2007, the California clothes washer standards tighten, requiring a 9.5 water factor for commercial and residential clothes washers. At that point, the rebate program will be re-evaluated for cost-effectiveness and market saturation.

**Cost Effectiveness:** This measure has a benefit cost ratio of 1.86.

**Estimate of Conservation Savings:** It is estimated that through this program, the District will save 0.003 mgd (3 AFY) and has a cost of savings per unit of volume (\$/mg) of \$800.

**Table 26: High Efficiency Clothes Washer Rebate Program Summary**

Year	2001	2002	2003	2004	Total
Washer Rebates	53	72	107	97	329

**Public Information Program (BMP 7)**

**Description of Measure:** Through various mediums such as outreach events, workshops, website, bill inserts, direct mailings, newsletter promotions, and other marketing techniques, the District strives to inform residents and businesses about the importance of using water efficiently.

The District offers free gardening literature from *Sunset Magazine* (“Water Wise Gardening for California” and “How to Water Your Garden”) and from *Bay Nature Magazine* (“Gardening for Wildlife with Native Plants” and “Soil Matters: From Backyard to Backcountry”). In 2004, the District set up a nursery program in coordination with four large nurseries in Half Moon Bay. Display racks are customized for each nursery to promote educational materials such as gardening literature, recommended water efficient coastal plants, and flyers on the District’s rebate programs. The District also stocks a variety of English and Spanish workbooks for children of different ages. The workbooks discuss ways of using water more efficiency through writing and game activities.

All utility bills include a water usage comparison to the previous year’s usage. Each bi-monthly bill contains a graph that shows the water usage compared to the past year’s water usage.

**Implementation Status:** The District started tracking this measure since 1991 when it signed the CUWCC’s MOU and agreed to implement conservation programs. However, the District has been publicly promoting water conservation since the late 1970’s. This measure is currently active.

**Program Goals:** The District will continually market water use efficiency measures through various marketing strategies to increase awareness and water conservation practices.

**Cost Effectiveness:** This measure has a benefit cost ratio of 1.62.

**Estimate of Conservation Savings:** It is estimated that this program saves the District and customers 0.01 mgd (12 AFY) and has a cost of savings per unit volume (\$/mg) of \$1,544.

### **School Education Program (BMP 8)**

**Description of Measure:** From 2001-2004, the District participated in the “Our Water” school education program, which was offered as a regional program through BAWSCA. The Our Water curriculum for 4<sup>th</sup> graders is presented in 50-minute sessions conducted once a week for nine weeks. Each school or class is assigned an arts instructor in visual arts, dance, or poetry. Pre- and post-tests were given to students to measure the effectiveness of the program in enhancing water conservation awareness. Currently the District, along with BAWSCA, is reviewing a new school education program called *WaterWise*<sup>TM</sup> that offers comprehensive teacher training packages and a take home kit for each student containing a water efficient showerhead, faucet aerators, toilet dye tablets, and literature for both the students and parents. The *WaterWise*<sup>TM</sup> 5<sup>th</sup> grade school education program is expected to start this fiscal year.

By previously participating in the Our Water program, the District has been able to educate over 360 students within the school district service area. A summary of the school education program is listed in Table 27 below.

In general, public education and outreach programs are difficult to calculate measurable water savings. However, the District anticipates that by using *WaterWise*<sup>TM</sup> in the upcoming year, savings data can be calculated from the take home student kits.

**Implementation Status:** The school education program began in 2001 and is currently active.

**Program Goals:** The goal of this program is to continually offer a comprehensive water awareness education program to elementary schools in the District’s service area.

**Table 27: School Education Program Summary**

Year	2002	2003	2004
Number of Schools	4	4	4
Number of Classroom Lessons (50 minutes each)	36	36	36
Number of Students Reached (approx.)	120	120	120

**Industrial, Commercial, and Institutional Conservation (BMP 9 and 9a)**

**Description of Measure:** The Industrial, Commercial, and Institutional (CII) conservation program currently offers rebates for replacing old toilets and urinals with Ultra Low Flush models. The District offers \$150 rebate or 75% of the total cost (which ever is less), for replacing old inefficient toilets with ULFTs. Since 2002, the District has only rebated two commercial customers for a total of five rebates).

**Implementation Status:** The CII toilet retrofit program has been offered since 1992 and is currently active.

**Program Goals:** The goal of this program is to continually offer toilet rebates to CII customers. The CII sector has remained relatively difficult to participate in conservation programs. The District will continue this program for the next five years and beginning in FY 05/06, will start to actively market to CII customers.

**Cost Effectiveness:** The CII low flush toilet and urinal rebate program has a benefit cost ratio of 2.47.

**Estimate of Conservation Savings:** It is estimated that this program saves the District 0.0008 mgd (0.89 AFY) and has a cost of savings per unit of volume (\$/mg) of \$205.

**Low Flow Restaurant Spray Nozzles**

**Description of Measure:** This measure installs free high-efficiency spray nozzles in restaurants and food service kitchens in the Industrial, Commercial, and Institutional sectors. In 2005, the SFPUC and BAWSCA entered into a Memorandum of Understanding (MOU) regarding the administration of a Spray Valve Installation Program. Through this MOU, SFPUC and BAWSCA work cooperatively to offer and coordinate installation of water and energy conserving spray nozzles to food service providers in the BAWSCA service area.

In September of 2005, the District completed its participation in the pre-rinse spray valve program. Of the District’s 56 restaurants and food service providers, 34 restaurants (60 %) participated in the program to replace a total of 50 high-efficiency spray valves. Savings related

to replacing the spray nozzles vary depending on usage. Table 28 estimates the energy and water savings based on the usage per day of pre-rinse spray valves.<sup>20</sup>

**Table 28: Pre-Rinse Spray Valve Savings Estimates**

Usage (per day)	Water savings per day	Wastewater savings per day	Cost savings therms per day	ANNUAL DOLLAR SAVINGS
2 hours	100 gallons	100 gallons	.07 therms	<b>\$300-\$400</b>
4 hours	200 gallons	200 gallons	1.3 therms	<b>\$700-900</b>
6 hours	300 gallons	300 gallons	2.0 therms	<b>\$1,000-\$1,300</b>

**Implementation Status:** This program began in August of 2005.

**Program Goals:** Since the District has installed spray valves in 60% of restaurants and food service providers the District will continue to market the program through December of 2005 or until funds are depleted. This program targets BMP 9 as part of Industrial, Commercial, and Institutional Conservation.

**Cost Effectiveness:** This measure has a benefit cost ratio of 32.63.

**Estimate of Conservation Savings:** By installing low flow pre-rinse spray valves, the District estimates a savings of 0.004 mgd (4 AFY) and has a cost of savings per unit of volume (\$/mg) of \$133.

### Conservation Pricing (BMP 11)

**Description of Measure:** This measure promotes uniform or increasing block rates structures. The District has had an increasing block rate structure for residential customers since the 1980's. Table 29 below shows the District's current bi-monthly base rate for different meter sizes. A copy of the current rate schedule is included in Appendix F of this UWMP. Non-residential customers have a current flat rate of \$3.92 per CCF used.

**Implementation Status:** The District currently implements an increasing block rate structure for residential customers and a flat rate charge for its non-residential customers. In September of 2005, the District wrapped up a comprehensive rate study by Camp, Dresser, & McKee (CDM) to analyze the value of the current base rates and commodity rates. CDM found that the District's tiered commodity rates and base rates were on target and that there was no need for rate realignment.

**Program Goals:** The District will continue to use the increasing block rate structure for its residential customers to encourage water conservation. In a water shortage period, the District will also implement a more severe increasing block rate structure to quickly promote water rationing and conservation.

<sup>20</sup> CUWCC Rinse & Save Program savings estimates. <http://www.cuwcc.org/sprayvalves.lasso>. August 25, 2005.

**Table 29: Bi-Monthly Base Rates**

<b>Meter Size</b>	<b>Bi-Monthly Charge</b>
5/8"	\$17.60
3/4"	\$26.47
1"	\$44.11
1 1/2"	\$85.19
2"	\$141.19
3"	\$308.86
4"	\$1,059.06

**Conservation Coordinator (BMP 12)**

**Description of Measure:** This measure designates a staff coordinator of agency conservation programs.

**Implementation Status:** At the time the previous UWMP was written, the District had a part time employee assigned to implement conservation programs. In July of 2004, the District hired it first full-time Water Conservation Coordinator to manage and implement all water conservation programs and outreach.

**Program Goals:** The goal of this measure is to increase program participation and public outreach by having a full-time staff person devoted to water conservation.

**Water Waste Prohibition (BMP 13)**

**Description of Measure:** Adoption of Ordinance No. 1997-01 establishes rules and regulations prohibiting wasteful water use during normal water supply situations and providing for enforcement. A complete copy of the Ordinance is located in the District’s Water Shortage Contingency Plan in Appendix C.

**Implementation Status:** The District’s Board of Directors adopted Ordinance No. 1997-01 on December 9, 1997.

**Program Goals:** The goal of this measure is to reduce and prohibit unreasonable water use.

**Residential ULFT Replacement (BMP 14)**

**Description of Measure:** The District offers a \$150 rebate or 75% of the total cost (which ever is less) for the replacement of 3.5, 5, or 7 gallons per flush (gpf) toilets with Ultra Low Flush Toilets (ULFT). Since the start of the program in 1992, the District has given 1,091 rebates to residential and multi-family customers.

The amount of water conserved by the installation of ULFTs in residential settings can be made assuming an average of four flushes per day and an average savings of 3.9 gallons per flush, that translates to an annual water savings of 5,694 gallons per toilet per year. Therefore, the 1,091

residential rebates to date equates to an approximate savings of 6,212,154 gal/year or 19 AFY. Table 30 summarizes the toilet rebates distributed since 2000.<sup>21</sup>

**Table 30: Residential ULFT Rebates**

Year	2000	2001	2002	2003	2004
Residential ULFT Rebates	62	66	58	33	49

**Implementation Status:** The ULFT Rebate Program has been active since 1992.

**Program Goals:** The goal of this measure is to replace inefficient toilets with ULFTs. Since the program has been active for the last 13 years, the District will begin to phase out the ULFT rebate program and begin a High Efficiency Toilet (HET) rebate program by 2007.

**Cost Effectiveness:** This measure has a benefit cost ratio of 0.30.

**Estimate of Conservation Savings:** It is estimated that this measure will save 0.03 mgd (33 AFY) and has a cost of savings per unit of volume (\$/mg) of \$1,310.58.

### **Irrigation & Xeriscape Classes for Homeowners**

**Description of Measure:** This program offers gardening, irrigation and xeriscape classes to residential homeowners once a year in honor of Water Awareness Month and Earth Day.

**Implementation Status:** This program first started in May of 2005 with a series of landscape and irrigation workshops hosted by the District for residential homeowners.

**Program Goals:** The goals of the workshops/classes are to expand residential homeowner's knowledge on efficient irrigation and water-wise gardening practices. The District's goal is to offer the workshops at least annually and to continuously build public interest in water use efficiency.

**Cost Effectiveness:** This measure has a benefit cost ratio of 0.22.

**Estimate of Conservation Savings:** By offering gardening and irrigation workshops to residential homeowners, the District is estimated to save 0.22 mgd (43 AFY) and has a cost of savings per unit of volume of \$2,086.

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<sup>21</sup> BMP Cost and Savings Study: Guide to Data and Methods for Cost-Effectiveness Analysis of Urban Water Conservation Best Management Practices. California Urban Water Conservation Council, December 2003.

Appendix A

CCWD Resolution Adopting Urban Water Management Plan

RESOLUTION NO. 2005-16

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE COASTSIDE COUNTY WATER DISTRICT ADOPTING THE "COASTSIDE COUNTY WATER DISTRICT 2005 URBAN WATER MANAGEMENT PLAN"**

**WHEREAS**, the Urban Water Management Planning Act (California Water Code Sections 10610, et seq.) requires the Coastsides County Water District to prepare and adopt an Urban Water Management Plan ("Plan"); and

**WHEREAS**, the Urban Water Management Planning Act further requires that CCWD update its Plan at least once every five years on or before December 31 in years ending in five and zero; and

**WHEREAS**, the District has made the Plan available for public inspection and has held a public hearing regarding the Plan as required by California Water Code Section 10642.

**NOW THEREFORE, BE IT RESOLVED** that the Board of Directors of the Coastsides County Water District hereby approves and adopts the 2005 Urban Water Management Plan as presented to the Board and attached to this Resolution.

**BE IT FURTHER RESOLVED** that the General Manager is authorized and directed to file a copy of the adopted Plan with the Department of Water Resources within 30 days of its adoption as required by Water Code Section 10644.

PASSED AND ADOPTED this 13<sup>th</sup> day of December, 2005, by the following vote:

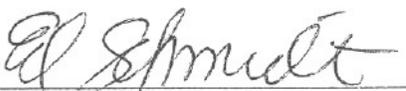
AYES: Directors Larimer, Coverdell, Muller, and Mickelsen

NOES:

ABSENT: Director Ascher

  
President, Board of Directors  
Coastsides County Water District

ATTEST:

  
Secretary of the Board

# Appendix B

## Location of SFPUC Capital Improvement Projects



Appendix C

# Coastside County Water District

## Water Shortage & Drought Contingency Plan



June 2005

**WATER SHORTAGE CONTINGENCY PLAN  
TABLE OF CONTENTS**

**Section 1: Introduction, Background and Previous Drought Policies**

- Introduction
- Objective of Water Shortage & Drought Contingency Plan
- Brief District Background
- Past Drought Experience
- Residential Minimum Allocation and Penalties
- Installation of Flow-Restricting Devices
- Mandatory Prohibitions Against Water Waste
- Impacts on Revenues and Expenditures

**Section 2: Phased Curtailment Plan**

**Advisory Stage**

- Objectives
- Triggers
- Public Message

**Advisory Stage Actions**

- Communication Actions
- Internal Operating Actions

**Voluntary Stage**

- Objectives
- Triggers
- Public Message

**Voluntary Stage Actions**

- Communication Actions
- Internal Operating Actions
- Supply and Demand Management Actions

**Mandatory Stage**

- Objectives
- Triggers
- Public Message

**Mandatory Stage Actions**

- Communication Actions
- Internal Operating Actions
- Supply and Demand Management Actions

**Emergency Curtailment Stage**

**Emergency Curtailment Stage Actions**

- Communication Actions
- Internal Operating Actions
- Supply and Demand Management Actions

Attachment A-Contact List

Attachment B-Possible Voluntary Customer Curtailment Actions

Attachment C-Ordinance No. 1997-01

## **Section 1: Introduction, Background and Previous Drought Policies**

### **Introduction**

This plan provides guidelines for Coastside County Water District (District) to manage water supply and demand in the event of a supply disruption. This plan address both progressive situations, such as those that are weather related, and more drastic and immediate situations such as facility emergencies (e.g., a pipeline break).

This document updates the brief drought plan mentioned in the 2000 Urban Water Management Plan.

### **Objective of Water Shortage & Drought Contingency Plan**

The objective of the Water Shortage and Drought Contingency Plan is to establish action and procedures for managing water supply and demand during water shortages. The overall intent of this plan is to develop strategies to minimize non-essential uses of water and to conserve remaining supplies for the greatest public benefit, with particular regard to domestic use, sanitation, and fire protection. Implementation of the plan will help the District maintain essential public health and safety and minimize adverse impacts on economic activity, environmental resources and the region's lifestyle during periods of water shortage.

### **Brief District Background**

The District has approximately 6,060 water service connections that provide water to roughly 17,000 people in the City of Half Moon Bay and the unincorporated communities of El Granada, Miramar and Princeton by the Sea. On average, 52% of the District's water sales are to the residential sector. The second major water use sector is floriculture, with an average of 14% of annual water sales.

The District currently has three water supply sources. A brief description of each source is provided below.

San Francisco Public Utilities Commission (SFPUC)- The District purchases roughly 73% of its total water supply from the SFPUC. On average, 24% of the District's annual water supply comes from Pilarcitos Lake and 49% comes from Crystal Springs Reservoir.

Pilarcitos Wells- The District produces 4% of its water supply from a well field located in Pilarcitos Canyon. The District can pump from November 1<sup>st</sup> through May 31<sup>st</sup> of each year. However, during drought conditions, supply from this source is extremely low since the wells are dependent upon infiltration from the Pilarcitos Creek stream flow.

Denniston Project- The Denniston Project has two water supply sources: Denniston Wells and Denniston Surface Water (stream diversions). On average, the District obtains 19% of its total water supply from Denniston surface water and 4% of its supply from Denniston groundwater. During drought years the production from Denniston Creek is extremely low because of the small watershed area. In addition, the production from the Denniston well field decreases substantially during drought periods because of the lowering of the water table in the Denniston groundwater basin.

### **Past Drought Experience**

The District has experienced various stages of water shortage in the past. District customers have been very responsive to water rationing programs that have been implemented during critically dry periods in the past three decades. Mandatory water rationing was in effect for all of 1977, 1978, 1988, 1990, 1991, and 1992 as well as four months in 1989 and 1993.

The residential sector has been particularly responsive to drought measures imposed by both the District and SFPUC. In 1977 residential consumption dropped by 33%, the first year in which water rationing was instituted. The following years have also seen significant reductions in water use: 1989, 24%; 1990, 40%; 1991, 32%, and 22% in 1993.

### **Residential Minimum Allocation and Penalties**

During past water shortage emergency periods, residential accounts were allocated an average number of billing units per cycle per person. According to the District's Ordinance No. 26 (1990), permanent residents were allocated 7 units per billing cycle (approximately 87 gallons per day per person). In Ordinance No. 28 (1991), the District allocated 8 units per billing cycle per person (100 gallons per day per person). With improved conservation measures including replacement of old inefficient fixtures and appliances with new high efficiency models and more efficient landscaping, the District currently recommends 6 units per person in a given billing cycle. This equates to 75 gallons of water per day per person.

During prior water shortage periods, the District implemented excess use fees to residential customers who consumed more water than the average allocation. The fees were determined based on an allocation formula that considered, among other things, the number of residents per residential housing unit. Due to the current computer billing system, the District cannot charge an excess use fee based on an allocation formula. Instead, in the future when a water shortage emergency is declared, the District will implement a drought rate structure that increases the unit price of water to encourage water rationing and conservation. Once the drought situation is over, the District can reinstate the normal rate structure.

### **Installation of Flow-Restricting Devices**

In lieu of or in addition to the remedies provided by state law, the District may require installation of a flow-restricting device on the service line of any customer violating District regulations or water use restrictions imposed during a declared water shortage emergency. The violator will be responsible for the cost of installing and removing such devices, as follows:

<u>Meter Size</u>	<u>Installation Charge</u>	<u>Removal Charge</u>
5/8" to 1"	\$50	\$50
1-1/2" to 2"	\$60	\$60
3" and larger	actual cost but in no event less than \$80 <sup>1</sup>	actual cost but in no event less than \$80 <sup>1</sup>

### **Mandatory Prohibitions Against Water Waste**

In December of 1997, the District adopted Ordinance No. 1997-01 that establishes rules and regulations prohibiting wasteful water use during a normal water supply situation and providing

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<sup>1</sup> Actual cost shall include all materials, labor, equipment and overhead charges.

enforcement thereof. The following summarizes the uses of water that are declared to be unreasonable and are prohibited by Ordinance 1997-001:

- Uncorrected leaks from defective plumbing, sprinklers or irrigation systems
- Use of water that results in flooding or runoff in gutters or streets
- Outdoor washing without the use of a positive shutoff nozzle.
- Watering landscape in a manner that allows excess water to run to waste
- Water used in non-recirculating decorative fountains
- Commercial car washes that do not use recycled water through an on-site filter system

See Attachment C for the complete Wasteful Water Ordinance and possible enforcement actions.

These regulations against water waste are in effect in the District's service area. During a drought emergency, the number of reports of water waste received from the general public increases. The District acts upon these cases first through attempts to educate the customer by a letter or leaving a door tag pointing out the violation. If the violation continues, the District can initiate appropriate enforcement, such as imposition of rate penalties for excessive water use, installation of flow-restricting devices and, ultimately, discontinued service.

### **Impacts on Revenues and Expenditures**

Successful water rationing programs lead to reduced water sales and revenues. However, the District expenditures do not decline in proportion to reduced sales because such a large part of the expenditures are related to fixed capital costs or on-going maintenance and operations. Consequently, water rates typically increase during years of water shortages when rationing programs are implemented. The administration of a water-rationing program will also have a definite, but relatively small, impact on the District's general and administrative costs, which must be considered whenever the District's budget is adopted during a period of water shortage. Revenue from an increased rate structure due to a drought situation will be received if the board declares the need for increased water conservation and water rationing. These additional revenues can be applied toward the increased costs associated with operation of the water system during of a water shortage emergency.

## Section 2: Phased Curtailment Plan

This plan provides four stages of response based on increasing severity, as progressively more serious conditions warrant. This type of response would be appropriate to a summer drought or other long-range disruption. The four stages include a variety of communications, internal operations, and supply and demand management strategies as appropriate, and are characterized as follows:

**Advisory Stage** – The public is informed as early as meaningful data are available that a possible shortage may occur.

**Voluntary Stage** – If supply conditions worsen, the plan moves to the Voluntary Stage, which relies heavily on voluntary cooperation and support of customers to meet target consumption goals. During this stage, specific voluntary actions are suggested for both residential and commercial customers.

**Mandatory Stage** – If the Voluntary Stage does not result in the reduction needed, this stage would be accompanied by an enforcement plan, and could also include increased rate charges for excess water use and/or fines for repeated violations.

**Emergency Curtailment** – This addresses the most severe need for demand reduction and could include a combination of additional mandatory measures and rate surcharges. This could be used as the last stage of a progressive situation, such as a drought of increasing severity, or to address an immediate crisis, such as a facility failure.

Proposed implementation of this Water Shortage and Drought Contingency Plan should be based on the following recommendations from District staff:

- Total supply availability; including groundwater, purchased water, and modified instream flow releases
- The rate of decline in total Crystal Springs Reservoir storage compared with the normal operating rule curve
- Short and long term weather forecasts by the NOAA National Weather Service
- The trends and forecasts of the system's daily water demands
- The estimated margin of safety provided by the demand reduction compared with the level of risk assumed if no action is taken
- The value of lost water sales revenue compared with the increased margin of reliability
- Consultation with SFPUC, BAWSCA, City and County officials, state resources agencies, and other effected agencies

- The length of time between stage changes (abrupt starts and stops are to be avoided), and the required time lags to shift administrative gears and institute program (printing, purchasing, etc.)
- Current events
- Customer response

## **Advisory Stage**

### **Objectives**

To prepare the District, City of Half Moon Bay, County of San Mateo, relevant agencies and water users for potential water shortage thereby allowing all parties adequate planning and coordination time

To undertake supply management actions that forestall or minimize the need later for more stringent demand or supply management actions

Achieve a 5-12% reduction in water demand

### **Triggers**

Two of the primary conditions that would trigger an Advisory are as follows:

Crystal Springs Reservoir storage is not projected to be at standard operating capacity as of June 1, due to exceptionally low snow pack, precipitation and/or lack of carryover storage from previous year.

Total Crystal Springs Reservoir storage and predicted inflows from Denniston and Pilarcitos Creek are significantly below historical “normals” for the current time of year, and supply modeling indicated that expected demands may not be met if this trend continues or worsens.

The Advisory is withdrawn when projected reservoir storage trends follow the normal water supply conditions.

### **Public Message**

“Potential exists for lower than normal supply; conditions may return to normal or, later on, we may need to reduce consumption. We’ll keep you informed. “

## **Advisory Stage Actions**

### **Communication Actions**

Brief elected officials

General Manager directs specific staff members to meet as often as appropriate to evaluate conditions, determine actions and make assignments. Suggested staff persons to be involved are the District Superintendent of Operations, Engineer, and Water Conservation Coordinator

Intensify ongoing media education effort about the water system, particularly relationship of weather patterns to supply and demand; provide up to date data and implications for water use, if known

Establish a “hotline” for frequently updated recordings that provide latest information and supply and demand data

Consult with other major customer groups (e.g., floriculture companies, parks departments, landscape industry) forming a committee if needed, to assist the District to define message and provide feedback on District actions

Initiate status report on entities with special interests, e.g., large water users especially landscape and nursery industry, parks, and other major water using customers

Prepare and distribute public information materials explaining the Water Shortage and Drought Contingency Plan stages and range of actions; prepare “Questions and Answers” for all customer groups, including those who may be planning new landscape projects

Intensify coordination with other regional water suppliers (SFPUC) and regional agencies like the Bay Area Water Supply and Conservation Agency (BAWSCA) to learn what conditions they are projecting for their systems

Intensify communication and coordination with the City, County, state and federal resources agencies about water supply conditions and projections

Evaluate ability, resources, plans to move into Voluntary Stage; as appropriate, begin preparatory measures

### **Internal Operating Actions**

Intensify data collection actions (stream flows, snow pack conditions) and monitoring weather forecasts

Intensify supply side management techniques to optimize existing sources

Assess current water main flushing and reservoir cleaning activities to determine whether they should be accelerated to be completed prior to the peak season or reduced to conserve supply

Assess water quality in creeks, reservoirs and distribution system to target for corrections areas that may be predicted to experience severe degradation with reduced consumption

Initiate planning and preparation for Voluntary State actions, including an assessment of potential staffing impacts, training needs, and communication strategies including use of web-based information

## **Voluntary Stage**

### **Objectives**

To maintain or reduce demand to meet target consumption levels by customer voluntary actions

To forestall or minimize need later for more stringent demand or supply management actions

To minimize the disruption to customers' lives and businesses while meeting target consumption goals

To maintain the highest water quality standards throughout the shortage

Achieve a 13-19% reduction in water demand

### **Triggers**

The "Voluntary Stage" is implemented when one or both of the following factors applies:

Supply conditions identified in the Advisory Stage have not improved

Demand levels indicate the need for a more systematic response to manage the situation

### **Public Message**

"We are relying on support and cooperation of all water users to stretch the available water supply. Demand needs to be reduced by \_\_\_\_%. Customers are responsible for determining how they will meet that goal. Water waste is not allowed. If everyone cooperates, we may avoid imposing more stringent restrictions such as implementing a drought rate structure. In addition to meeting essential water needs of customers, meeting the needs of fish habitat and other environmental concerns is a priority."

## **Voluntary Stage Actions**

The District staff will meet frequently to re-evaluate the situation based on current and projected supply conditions and the season, and determine the appropriate actions and strategies. Staff will determine target consumption goals to be achieved on a voluntary basis, which may be revised as necessary.

### **Communication Actions**

Establish systematic communications with elected officials; General Manager communicates the nature and scope of voluntary measures and strategy to the Board of Directors, Mayor, City Council, and resource agencies

District staff evaluates whether targeted consumption levels and supply conditions warrant a rate surcharge to reinforce voluntary actions and/or recover revenue losses; the General Manager makes recommendations to the Board of Directors

Prepare appropriate legislation regarding emergency surcharges, if required

Consult with customer groups throughout the shortage to help develop public information messages and materials and to obtain feedback on District actions

Initiate major public information, media and advertising campaign:

In weekly Half Moon Bay Review newspaper, publish and promote consumption graph that displays the goal and previous week's consumption

Promote consumption goals for typical households, and a percentage reduction goal for commercial customers (Attachment B contains a list of recommended actions for customers to take to reduce consumption)

Develop and implement a marketing plan, including paid advertising, to keep customers informed about supply and demand conditions. Marketing plan should cover desired customer actions, recommendations to reduce customer demand sufficiently, and reminds customers that if goals are not achieved, restrictions may be necessary

Identify what potential next steps will be to reduce demand including timing, what type of restrictions and/or surcharges will be imposed

Establish routine timing for press releases that provides current status and outlook, present information in standardized format that becomes familiar to media and public

Include water quality information in public information so that if flushing is necessary, the public understands that it is essential for water quality maintenance

Publicize the water supply conditions on website, which is updated regularly

Meet with landscape and floriculture representatives to inform them of the current and projected conditions, develop consumption goals

In collaboration with Health Department officials, develop informational materials for customers on gray water use

Establish and promote "hotlines" for customers to obtain additional conservation information

Contact largest customers to request percentage reduction. Contact City and other public agencies to inform them of conditions and request their cooperation

Prepare list of commercial car wash facilities that recycle water

Print generic postcard to acknowledge receipt of customer correspondence regarding the shortage and to inform customer that specific response is being prepared

Initiate remaining planning and preparation for Mandatory Stage

### **Internal Operating Actions**

Continue actions listed in the Advisory Stage

Eliminate all operating system water uses determined not to be essential to maintain water quality

Implement staffing reassignments as needed, and plan staffing changes, which may be needed for the Mandatory Stage, including staff to enforce mandatory restrictions

**Supply and Demand Management Actions**

Issue a request that non-recirculating fountains be turned off

Request that Half Moon Bay Fire Protection District limit training exercises that use water

Request that the City eliminate washing fleet vehicles unless recycling car washes are used

Request that hosing sidewalks, driveways, parking lots, etc be limited to situations that require it for public health and safety

Have District field personnel “tag” observed obvious water waste such as hoses without shutoff nozzles, gutter flooding, etc with notice that informs customer about the supply conditions and need to conserve

## **Mandatory Stage**

### **Objectives**

To achieve targeted consumption reduction goals by restricting defined water uses

To ensure that adequate water supply will be available during the duration of the situation to protect public health and safety and to balance the need for stream flows for fish habitat

To minimize the disruption to customers' lives and businesses while meeting target consumption goals

To maintain the highest water quality standards throughout the shortage

To promote equality amongst customers by establishing clear restrictions that effect all customers

Achieve a 20-38% reduction in water demand

### **Triggers**

The General Manager and Board of Directors would approve progression to this stage, as recommended by the District staff, if goals established in the Voluntary Stage have not been met, and additional action is needed. The specific restrictions imposed during the mandatory stage would be determined based on the season of the year, targeted demand levels, and other considerations previously mentioned. Variations of the specific restrictions may be applied based on water supply conditions. For example, lawn-watering restrictions may simply consist of time of day restrictions; or, if conditions warrant, lawn watering could be restricted to certain times of day and allowed only once a week.

### **Public Message**

“It is necessary to impose mandatory restrictions to reduce demand because the voluntary approach has not resulted in the necessary savings. We are continuing to rely on the support and cooperation of the public to comply with these restrictions but need the certainty and predictability of restricting certain water uses in order to ensure that throughout the duration of this shortage an adequate supply of water is maintained for public health and safety.”

## **Mandatory Stage Actions**

### **Communication Actions**

The District staff recommends nature, scope and timing of restrictions to the General Manager. The Superintendent of Operations determines that water supply and demand management strategies will not result in unacceptable water quality degradation

The General Manager recommends to the Board of Directors moving to Mandatory Stage and other appropriate actions

The Board of Directors adopts legislation on mandatory restriction and, if needed and not already in place, emergency surcharges

The public is informed about the nature and scope of mandatory restrictions through paid advertising and other means including direct mail and the District's website. The enforcement mechanisms, rate surcharges, target consumption goals, projections for how long restriction will be in place, and the reasons for imposing restrictions will also be identified, as will the possible consequence if goals are not met

Any exemption from restrictions will be clearly identified

In communicating mandatory restrictions to the public, a clear distinction will be made between lawn/turf watering and watering gardens and ornamental plantings

A "Customer Hotline" will be set up to report violations of restrictions

Customers who irrigate with private wells will be urged to install signs to let the public know that private well water is being used

Communication actions from the Advisory and Voluntary stages will be continued and enhanced

Plans will be made to move into the fourth stage--Emergency Curtailment--and to begin preparatory measures as appropriate

### **Internal Operating Actions**

Continue appropriate actions from previous stages

Finalize and implement procedures for exemptions from restrictions and/or emergency surcharges

Increase water quality monitoring actions for local supply sources and storage tanks

### **Supply and Demand Management Actions**

Overall supply conditions will be considered by the District staff in evaluating which restrictions to impose. If supply conditions continue to deteriorate, before moving to the Emergency Curtailment Stage, and if irrigation is still occurring, lawn watering will be banned. Newly installed lawns may be exempted from this ban if the procedures listed below are followed:

## **POSSIBLE RESTRICTIONS**

### **Watering Restrictions**

The following are several possible approaches to watering restrictions. The nature of the restrictions used will depend on the situation, and may change as severity of the situation changes:

Prohibit all watering during the warmest hours of the day, for example between 10:00 a.m. and 7:00 p.m.

Limit all watering to a specific number of days per week or per month. This choice will depend on target consumption goals, the time of year and the extent to which watering is occurring, and how much demands have already decreased

Ban lawn watering with other watering prohibited during the warmest hours of the day, for example, between 10:00 a.m. and 7:00 p.m.

## **OTHER RESTRICTIONS**

### **Other Restrictions**

Prohibit use of any ornamental fountain using drinking water for operation

Prohibit car washing except at commercial car wash facilities that recycle water

Prohibit washing of sidewalks, streets, decks or driveways except as necessary for public health and safety

Limit pressure-washing of buildings to situations that require it as part of scheduled building rehabilitation project (e.g. painting)

Prohibit water waste including unattended hoses without shut-off nozzles, obvious leaks and water running to waste such as gutter flooding and sprinklers/irrigation whose spray pattern unnecessarily and significantly hits paved areas

### **Exemptions for Water Use Restrictions**

Lawn watering ban exemption- Newly installed lawns may be exempted from a ban if the procedures listed below are followed. Those wishing to use this exemption would need to contact the District as directed in advance of the exemption being granted, providing their name, address, phone number, size of lawn and type of watering system. This information would allow the District to spot check for compliance. The procedures relating to the exemption and the requirements of the exemption would be clearly outlined at the time of the ban. The following procedures are subject to change:

Each applicant would be mailed a packet stating the requirements

Once the requirements are met, an authorized packet would be mailed to the customer including a sign to be posted indicating that District requirements are being complied with

New lawns must be properly installed, meaning that two inches of organic soil amendment, such as composted yard waste, is cultivated in the top six inches of existing soil, at a minimum

New lawns must be watered according to guidelines to be provided in the packet mentioned above

For purposes of this exemption, “new lawn” refers to a lawn newly installed during the current year only. Overseeded or otherwise renovated lawns would not be exempt

In the event that the shortage continues to worsen and the Emergency Curtailment Stage is invoked, this exemption would be revoked. It would also be revoked on a case-by-case basis if the rules stated above are not followed, or in the case of a water system emergency. Monitoring and enforcement are at the discretion of the utility. The existence of an exemption to a watering ban would be announced early in the response process, for example when the Advisory Stage is invoked.

### **Other Exemptions**

For purposes of dust control, water may be applied to construction areas or other areas needing to comply with air quality requirements. If reclaimed water is available, consider requiring or promoting that to be used for dust control, if feasible

Ballfields and playfields may be watered at the minimum rate necessary for dust control and safety purposes

The District will exempt customers with special medical needs such as home dialysis from any emergency surcharge provided individual customers notify the District of such a need

## **Emergency Curtailment Stage**

At this stage, the District recognizes that a critical water situation exists. Without additional curtailment actions, a shortage of water for public health and safety will be imminent. No prior emergency in the Coastside County Water District water system's history fits this description. This stage is implemented when a 39% or greater reduction in water demand is necessary.

This stage is characterized by two basic approaches. First, increasingly stringent water use restrictions are established and enforced. Secondly, significant rate surcharges are used to encourage customer compliance. While a rate surcharge may be implemented in either the Voluntary or Mandatory stages, a surcharge is a key component to the success of this stage and previous surcharges may be increased if appropriate.

## **Emergency Curtailment Stage Actions**

### **Communication Actions**

Continue all previous, applicable actions

Define the problem to the public as an emergency and institute formal procedures to declare a city emergency

Inform customers of the rate surcharge and how it will affect them. Provide information on an appeal process

Coordinate with police and fire departments requesting their assistance in enforcing prohibition of water waste

Inform customers that taste and odor water quality problems may occur with system-wide reduced water consumption

Inform customers about possible pressure reductions and problems this may entail

Define and communicate exemptions for medical facilities and other public health situations

### **Internal Operating Actions**

Continue and enhance "Water Watcher" patrols

Continue actions listed in prior stages

Curtail fire line testing unless it can be shown to be essential to protect the immediate public health and safety

Further enhance water quality monitoring actions

### **Supply and Demand Management Actions**

Re-evaluate District's tiered rate structure for residential customers and add steep surcharge for consumption in excess of the targeted reduction amount for each block. The remaining sectors

such as commercial, industrial, floriculture and irrigation would be asked to reduce water use by a set percentage of their consumption during the same period in the previous year. Emergency surcharges would be established to provide an additional incentive to reduce water use.

All lawn and turf irrigation would be prohibited

Require that all fire-fighting agencies discontinue the use of water in training exercises until emergency is over

Require local parks departments to close down pools

## **Attachment A**

### **CONTACT LIST**

#### **Coastside County Water District Water Shortage and Drought Contingency Plan**

A working list of contacts for easy reference in case of a drought or emergency should be developed and regularly updated by the District staff in consultation with other agencies. In addition to the communication elements contained in the Water Shortage and Drought Contingency Plan, the following will be contacted directly in the event of a drought emergency to inform them and ask for their support and cooperation in reducing demand.

#### **Water Suppliers and Regional Agencies**

San Francisco Public Utilities Commission- (415) 554-3155  
Bay Area Water Supply and Conservation Agency- (650) 349-3000

#### **Customers**

List of large irrigators, including those using alternate sources  
List of large commercial and industrial customers

#### **City of Half Moon Bay Contacts**

City Manager- (650) 726-8270  
Dept of Public Works- (650) 726-8260  
Dept. of Parks and Recreation- (650) 726-8297  
Half Moon Bay Fire Protection District- (650) 726-5213  
\*List of City owned, non-recirculating and recirculating fountains

#### **County of San Mateo Contacts**

Dept. of Public Works- (650) 363-4100  
Dept. of Environmental Health- (650) 363-4305  
San Mateo County Harbor District- (650) 726-4723

Sewer Authority Mid-Coastside - (650) 726-0124

Montara Water and Sanitary District - (650) 728-3358

#### **Business Groups**

Half Moon Bay Coastside Chamber of Commerce- (650) 726-8380  
Springbrook Software- (503) 973-7750  
MCTV- (650) 726-1750  
Half Moon Bay Review- (650) 726-4424

## **Attachment B**

### **POSSIBLE VOLUNTARY CUSTOMER CURTAILMENT ACTIONS**

#### **Residential Indoors**

- Flush the toilet less often. Each flush uses 1.6 to 7 gallons of water depending on the age of the toilet.
- If you have an old toilet (pre-1992), replace your old toilet with a standard 1.6 gallons per flush model.
- Use dish and clothes washing machines only when full. Top loading washers use 15-40 gallons per load. Front loading washing machines use approximately 30% less water than residential top loading models.
- Keep drinking water cold in the refrigerator rather than running the faucet until the water's cold.
- Take shorter showers, for every minute of reduced showering time, 2.5 to 5 gallons is saved.
- Don't let the faucet run while shaving, brushing teeth; when washing vegetables, use a pan or a bowl of water instead of letting water run.
- Catch water while waiting for hot water for use on plants.

#### **Residential Outdoor Use**

- Wash cars less often. Instead of using the hose consider a commercial car wash that recycles water.
- Always use a shut-off nozzle on hoses.
- Eliminate outdoor water play, i.e. running through the sprinklers, plastic water slides, wading/swimming pools that require frequent re-filling.
- Eliminate all hosing of sidewalks, driveways, and decks.

#### **Landscape Measures-Commercial and Residential**

- Water lawns and gardens only early in the morning to reduce evaporation.
- Consider letting established lawns go dormant until the shortage is over. Homes that normally water lawns will save 25% to 50% by not watering lawns.
- Don't water your landscape when it rains.

- Water established plants only when necessary. Most California native and water-efficient plants don't need to be watered once they are established. Use a soil probe to check the root zone for dryness.
- Use mulch in planting beds to help retain moisture.
- Create "wells" around trees to minimize runoff when they are watered.
- If there is an automatic irrigation system, have it audited to ensure that it is using water efficiently. Learn how to change the program that controls the system in order to cut back on irrigation time. Equip it with a rain sensor that will override the system during rainfall.

### **Commercial**

- Set goals for reduced water use and inform employees. Give employees ideas for curtailing water use and ask them for theirs.
- Repair all leaks and dripping faucets. Urge employees to report leaks.
- Reduce or eliminate routine vehicle cleaning during shortage. Use a local commercial car wash facility that recycles water.
- Ensure that all hoses are fitted with shut-off nozzles.
- Eliminate all hosing of walkways, parking lots, loading docks. Pressure washers use substantially less water.
- Postpone routine building washing until after shortage.
- Post signs informing customers of the nature of the water shortage and ask for cooperation in reducing water use.
- Turn off all non-recirculating fountains. On windy days, where there is significant water loss, turn off all fountains.
- Restaurants: provide water only on request.
- Accelerate the update of restrooms by replacing old toilets with 1.6 gallon per flush models and old urinals with 1.0 gallon per flush models.

**Attachment C**

**ORDINANCE NO. 1997-01: PROHIBITS WASTEFUL WATER USE**

COASTSIDE COUNTY WATER DISTRICT

AN ORDINANCE ESTABLISHING RULES AND REGULATIONS  
PROHIBITING WASTEFUL WATER USE DURING NORMAL WATER SUPPLY  
SITUATIONS AND PROVIDING FOR ENFORCEMENT THEREOF

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

WHEREAS, the Act requires all urban water suppliers to prepare and adopt an urban water management plan ("Plan") which is to describe and evaluate reasonable and practical, efficient uses of water and water conservation activities; and

WHEREAS, Water Code Section 10631 requires that the Plan must describe the water supplier's water demand management measures, specifically including water waste prohibitions; and

WHEREAS, the District adopted the Urban Water Management Plan for 1995-2000, after public notice and opportunity for hearing, on March 12, 1996.

WHEREAS, the District's Plan contemplates that the Board of Directors will, by ordinance, adopt prohibitions on the waste of water by customers; and

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

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF DIRECTORS OF THE COASTSIDE COUNTY WATER DISTRICT AS FOLLOWS:

Section 1. Findings and Declarations

It is hereby declared by the Board of Directors that, in order to conserve the District's water supply for the greatest public benefit and to reduce the quantity of water unnecessarily used by the District's customers, wasteful use of water should be minimized and, if possible, eliminated.

Section 2. Definitions

- A. "District" means Coastsides County Water District.
- B. "General Manager" means the General Manager of the District.
- C. "Person" means any person, firm, partnership, association, corporation, company, organization or governmental entity.

D. "Customer" means any person, whether within or without the geographical boundaries of the District, who uses water supplied by the District.

E. "Water" means water supplied by the District, other than reclaimed wastewater.

### Section 3. Water Use Prohibitions

The following uses of water are declared to be unreasonable and are hereby prohibited:

A. Use of water when the Customer has been given written notice by the District to repair broken or defective plumbing, sprinkler, watering or irrigation systems, and has failed to effect such repairs for 10 days after delivery of the notice.

B. Use of water which results in flooding or runoff in gutters or streets.

C. Use of water for washing cars, buses, boats, trailers or other vehicles through a hand-held hose, unless the hose is equipped with a nozzle with a positive shutoff valve or other similar device to control the flow of water.

D. Use of water for construction purposes, such as dust control and consolidation of backfill, unless reclaimed wastewater is not reasonably available.

E. Use of water in landscape irrigation which results in runoff into street or pooling due to super-saturation of the ground.

F. Use of water in non-recirculating decorative fountains.

G. Use of water by a commercial carwash constructed and first placed into operation after the date of this Ordinance, unless such water is recycled through an on-site filter system.

### Section 4. Enforcement

A. If the District believes that water has been or is being used in violation of the above restrictions, the General Manager shall send a written notice to the Customer specifying the nature of the waste and the time of occurrence, to the extent known by the District, and directing the Customer to cease such use and/or to take remedial action. If the Customer continues such use or fails to take the remedial action within the time specified, the District may install a flow-restricting device on the Customer's service line.

B. In the event that a further violation is observed by District personnel, after installation of a flow-restricting device, the District may discontinue service.

C. The Customer shall be responsible for paying the District's costs incurred in installing and removing a flow-restricting device and/or terminating and restoring service.

Section 5. Effective Date

This Ordinance shall become effective 30 days after it has been published as required by Section 7.

Section 6. Severability

If any provision of this Ordinance is held to be invalid, or unenforceable in particular circumstances, such invalidity shall not affect the remainder of the Ordinance which shall continue to be of full force and effect and the Board declares this Ordinance to be severable for that purpose.

Section 7. Publication

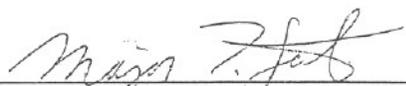
The Secretary is hereby directed to arrange for this Ordinance to be published in a newspaper of general circulation in the District.

Adopted this 9th day of December 1997, by the following vote of the Board:

AYES: Directors Coverdell, Gates, Goodrich, Kash, Pera

NOES: None

ABSENT: None

  
\_\_\_\_\_  
President, Board of Directors  
Coastside County Water District

ATTEST:  
  
\_\_\_\_\_  
Secretary of the District

## **Appendix D**

**California Urban Water Conservation Council**

**Best Management Practice Reports for FY 2003-2004**

## BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit: **Coastside County Water District**      BMP Form Status: **100% Complete**      Year: **2004**

### A. Implementation

- |  |            |
|--|------------|
| 1. Based on your signed MOU date, 11/13/1991, your Agency STRATEGY DUE DATE is:  | 11/12/1993 |
| 2. Has your agency developed and implemented a targeting/marketing strategy for SINGLE-FAMILY residential water use surveys? | no         |
| a. If YES, when was it implemented?  |            |
| 3. Has your agency developed and implemented a targeting/marketing strategy for MULTI-FAMILY residential water use surveys?  | no         |
| a. If YES, when was it implemented?  |            |

### B. Water Survey Data

<b>Survey Counts:</b>	<b>Single Family Accounts</b>	<b>Multi-Family Units</b>
1. Number of surveys offered:	0	0
2. Number of surveys completed:	0	0

### Indoor Survey:

- |   |     |     |
|---|-----|-----|
| 3. Check for leaks, including toilets, faucets and meter checks   | yes | yes |
| 4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary   | no  | no  |
| 5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as necessary; replace leaking toilet flapper, as necessary | no  | no  |

### Outdoor Survey:

- |  |    |      |
|--|----|------|
| 6. Check irrigation system and timers  | no | no   |
| 7. Review or develop customer irrigation schedule  | no | no   |
| 8. Measure landscaped area (Recommended but not required for surveys)  | no | no   |
| 9. Measure total irrigable area (Recommended but not required for surveys)   | no | no   |
| 10. Which measurement method is typically used (Recommended but not required for surveys)                                |    | None |
| 11. Were customers provided with information packets that included evaluation results and water savings recommendations? | no | no   |
| 12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?                     | no | no   |
| a. If yes, in what form are surveys tracked?   |    | None |

b. Describe how your agency tracks this information.

**C. Water Survey Program Expenditures**

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

**D. "At Least As Effective As"**

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
  - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

**E. Comments**

The District does not offer SF and MF home surveys, but will make special site visits if requested by customer. District crew check reported leaks, distribute dye tabs, do-it-yourself home water audit kits and distribute conservation literature.

Reported as of 10/4/05

## BMP 02: Residential Plumbing Retrofit

Reporting Unit: **Coastside County Water District**      BMP Form Status: **100% Complete**      Year: **2004**

### A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? no
  - a. If YES, list local jurisdictions in your service area and code or ordinance in each:
  
2. Has your agency satisfied the 75% saturation requirement for single-family housing units? no
3. Estimated percent of single-family households with low-flow showerheads: %
4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? no
5. Estimated percent of multi-family households with low-flow showerheads: %
6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

### B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? yes
  - a. If YES, when did your agency begin implementing this strategy? 01/01/1980
  - b. Describe your targeting/ marketing strategy.

The District uses bi-monthly billing inserts and advertisements in the newspaper and on our website to promote the low-flow device rebate program. We offer rebates on installing low-flow showerheads which is apart of our ULFT rebate program.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	8	0
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	0	0
6. Does your agency track the distribution and cost of low-flow devices? <span style="float: right;">no</span>		
a. If YES, in what format are low-flow devices tracked?		
b. If yes, describe your tracking and distribution system :		

### C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	10500	8000
2. Actual Expenditures	1200	

**D. "At Least As Effective As"**

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

**E. Comments**

The District includes it's low-flow showerhead replacement program within the ULFT rebate program. The \$10,500 is the total program budget. Next year, it will be separated with it's own budget.

Reported as of 10/4/05

**BMP 03: System Water Audits, Leak Detection and Repair**

Reporting Unit: **Coastside County Water District**      BMP Form Status: **100% Complete**      Year: **2004**

**A. Implementation**

- |  |      |
|--|------|
| 1. Has your agency completed a pre-screening system audit for this reporting year?   | Yes  |
| 2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:                                   |      |
| a. Determine metered sales (AF)  | 2753 |
| b. Determine other system verifiable uses (AF)   | 335  |
| c. Determine total supply into the system (AF)   | 3088 |
| d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required. | 1.00 |
| 3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production?   | yes  |
| 4. Did your agency complete a full-scale audit during this report year?  | no   |
| 5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit?             | no   |
| 6. Does your agency operate a system leak detection program?   | no   |
| a. If yes, describe the leak detection program:  |      |

**B. Survey Data**

- |  |    |
|--|----|
| 1. Total number of miles of distribution system line.    | 92 |
| 2. Number of miles of distribution system line surveyed. | 0  |

**C. System Audit / Leak Detection Program Expenditures**

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

**D. "At Least As Effective As"**

- |  |    |
|--|----|
| 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?  | No |
| a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as." |    |

**E. Comments**

The total amount of unmetered, unauthorized water loss during FY 03/04 was 56.8 mg or 174 AF. It is broken out as follows: (1) known pipeline leaks: 25 mg, (2) meter inaccuracy: 2.5 mg and (3) apparent pipeline leakage: 29.3. These numbers will be more accurately tracked (in FYs) in the next reporting period and there after.

Reported as of 10/4/05

## BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit: **Coastside County Water District**      BMP Form Status: **100% Complete**      Year: **2004**

### A. Implementation

- 1. Does your agency require meters for all new connections and bill by volume-of-use? yes
- 2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use? no
  - a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed?
  - b. Describe the program:
 

The District has been fully metered since 1947.
- 3. Number of previously unmetered accounts fitted with meters during report year. 71

### B. Feasibility Study

- 1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? no
  - a. If YES, when was the feasibility study conducted? (mm/dd/yy)
  - b. Describe the feasibility study:
- 2. Number of CII accounts with mixed-use meters. 404
- 3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. 0

### C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	15000	15000
2. Actual Expenditures	2995	

### D. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
  - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

### E. Comments

The District has an on-going meter replacement program to assure meter accuracy.

Reported as of 10/4/05

## BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:  
**Coastside County Water District**

BMP Form Status:  
**100% Complete**

Year:  
**2004**

### A. Water Use Budgets

- |  |     |
|--|-----|
| 1. Number of Dedicated Irrigation Meter Accounts:  | 26  |
| 2. Number of Dedicated Irrigation Meter Accounts with Water Budgets:                       | 26  |
| 3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF):                     | 222 |
| 4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF):                       | 291 |
| 5. Does your agency provide water use notices to accounts with budgets each billing cycle? | yes |

### B. Landscape Surveys

- |  |    |
|--|----|
| 1. Has your agency developed a marketing / targeting strategy for landscape surveys? | no |
| a. If YES, when did your agency begin implementing this strategy?                    |    |
| b. Description of marketing / targeting strategy:                                    |    |
| 2. Number of Surveys Offered.  | 0  |
| 3. Number of Surveys Completed.  | 0  |
| 4. Indicate which of the following Landscape Elements are part of your survey:       |    |
| a. Irrigation System Check   | no |
| b. Distribution Uniformity Analysis  | no |
| c. Review / Develop Irrigation Schedules   | no |
| d. Measure Landscape Area  | no |
| e. Measure Total Irrigable Area  | no |
| f. Provide Customer Report / Information   | no |
| 5. Do you track survey offers and results?   | no |
| 6. Does your agency provide follow-up surveys for previously completed surveys?      | no |
| a. If YES, describe below:   |    |

### C. Other BMP 5 Actions

- |   |     |
|---|-----|
| 1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets? | no  |
| 2. Number of CII mixed-use accounts with landscape budgets.   | 0   |
| 3. Do you offer landscape irrigation training?  | yes |
| 4. Does your agency offer financial incentives to improve landscape water use efficiency?   | no  |

Type of Financial Incentive:	Budget (Dollars/Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services? yes

a. If YES, describe below:

We provide landscape literature and irrigation efficiency information in our bi-monthly billing inserts. We maintain a library of conservation information that is available to the public. We are also updating our website to include more gardening information.

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? yes

b. If yes, does it have dedicated irrigation metering? no

7. Do you provide customer notices at the start of the irrigation season? no

8. Do you provide customer notices at the end of the irrigation season? no

**D. Landscape Conservation Program Expenditures**

	This Year	Next Year
1. Budgeted Expenditures	6110	3600
2. Actual Expenditures	6110	

**E. "At Least As Effective As"**

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

**F. Comments**

The District will also start offering full landscape irrigation surveys in FY 04/05.

Reported as of 10/4/05

### BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit: **Coastside County Water District**      BMP Form Status: **100% Complete**      Year: **2004**

#### A. Implementation

- 1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? yes
  - a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.

PG&E

- 2. Does your agency offer rebates for high-efficiency washers? yes
- 3. What is the level of the rebate? 75
- 4. Number of rebates awarded. 97

#### B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	9000	10000
2. Actual Expenditures	8604	

#### C. "At Least As Effective As"

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
  - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

#### D. Comments

Regional program implemented through the Bay Area Water Supply and Conservation Agencies (BAWSCA)

Reported as of 10/4/05

### BMP 07: Public Information Programs

Reporting Unit: **Coastside County Water District**      BMP Form Status: **100% Complete**      Year: **2004**

#### A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

The District uses frequent bill inserts, school education programs, displays/booths, website information, newspaper and tv ads, free dye tablets and home water audit kits to convey conservation information.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	yes	1
b. Public Service Announcement	no	
c. Bill Inserts / Newsletters / Brochures	yes	4
d. Bill showing water usage in comparison to previous year's usage	yes	
e. Demonstration Gardens	yes	1
f. Special Events, Media Events	yes	1
g. Speaker's Bureau	no	
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

#### B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	6500	6000
2. Actual Expenditures	6426	

#### C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

#### D. Comments

Reported as of 10/4/05

### BMP 08: School Education Programs

Reporting Unit:  
**Coastside County Water District**

BMP Form Status:  
**100% Complete**

Year:  
**2004**

#### A. Implementation

1. Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	no	0	0	0
Grades 4th-6th	yes	24	120	24
Grades 7th-8th	no	0	0	0
High School	no	0	0	0

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 09/01/2002

#### B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	4250	5100
2. Actual Expenditures	3520	

#### C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

#### D. Comments

Four 4th grade classrooms were reached through the "Our Water" school education program. We received great feedback from both students and teachers. Program implemented through BAWSCA.

Reported as of 10/4/05

**BMP 09: Conservation Programs for CII Accounts**

Reporting Unit:

**Coastside County Water  
District**

BMP Form Status:

**100% Complete**

Year:

**2004****A. Implementation**

- |  |     |
|--|-----|
| 1. Has your agency identified and ranked COMMERCIAL customers according to use?    | yes |
| 2. Has your agency identified and ranked INDUSTRIAL customers according to use?    | yes |
| 3. Has your agency identified and ranked INSTITUTIONAL customers according to use? | yes |

**Option A: CII Water Use Survey and Customer Incentives Program**

- |   |    |
|---|----|
| 4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? | no |
|---|----|

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	0	0	0
b. Number of New Surveys Completed	0	0	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0
CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	no	no	no
f. Evaluation of all water-using apparatus and processes	no	no	no
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	no	no	no
Agency CII Customer Incentives	Budget (\$/Year)	No. Awarded to Customers	Total \$ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

**Option B: CII Conservation Program Targets**

- 
- 5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option? no
  - 6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings? no
  - 7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991. 0
  - 8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991. 0

**B. Conservation Program Expenditures for CII Accounts**

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

**C. "At Least As Effective As"**

- 1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No
  - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

**D. Comments**

CII accounts are eligible for the District's toilet and showerhead rebate program.

Reported as of 10/4/05

**BMP 09a: CII ULFT Water Savings**

Reporting Unit:

**Coastside County Water District**

BMP Form Status:  
**100% Complete**

Year:  
**2004**

1. Did your agency implement a CII ULFT replacement program in the reporting year? Yes  
If No, please explain why on Line B. 10.

**A. Targeting and Marketing**

1. What basis does your agency use to target customers for participation in this program? Service area zones  
Check all that apply.

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

This is a voluntary program for CII customers that is included with the SF and MF ULFT program. The District offers a \$150 rebate per ULFT installed, or 75% of the total cost, whichever is less. There is no limit to the number of toilets that can be reimbursed.

2. How does your agency advertise this program? Check all that apply. Bill insert  
Bill message  
Newsletter  
Web page  
TV paid announcements  
Newspapers

a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

Bill inserts/messages and the web page seem to be the most informative ways to reach CII customers.

**B. Implementation**

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.) Yes

2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency? Yes

3. What is the total number of customer accounts participating in the program during the last year ? 1

4. CII Subsector	Number of Toilets Replaced			
	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount
a. Offices	0	0	0	0
b. Retail / Wholesale	0	0	0	0
c. Hotels	0	0	0	0
d. Health	0	0	0	0
e. Industrial	0	0	0	0
f. Schools:	0	0	0	0

K to 12				
g. Eating	0	0	0	0
h. Govern- ment	0	0	0	0
i. Churches	0	1	0	0
j. Other	0	0	0	0

5. Program design.

Rebate or voucher

6. Does your agency use outside services to implement this program? No

a. If yes, check all that apply.

7. Participant tracking and follow-up.

Site Visit

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

- a. Disruption to business 4
- b. Inadequate payback 1
- c. Inadequate ULFT performance 5
- d. Lack of funding 2
- e. American's with Disabilities Act 3
- f. Permitting 1

g. Other. Please describe in B. 9.

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other issues affecting program implementation or effectiveness.

There is no real resistance from CII customers to participate in this program, it just doesn't seem to be a priority for their business.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

With only 1 ULFT installed, we did not meet our desired goals for the CII sector. We would like to improve our marketing efforts to target CII customers and their decision makers.

**C. Conservation Program Expenditures for CII ULFT**

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor	0	0
b. Materials	10500	131
c. Marketing & Advertising	1000	1000
d. Administration & Overhead	0	0
e. Outside Services	0	0
f. Total	11500	1131

## 2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	0
b. State agency contribution	0
c. Federal agency contribution	0
d. Other contribution	0
e. Total	0

**D. Comments**

The SF, MF, and CII ULFT rebate program all share the same budget. The actual expenditure of \$131 is what was spent on the 1 CII ULFT rebate. Next reporting year, the CII, SF, and MF budgets will all be separated for easier tracking of funds.

Reported as of 10/4/05

**BMP 11: Conservation Pricing**

Reporting Unit:  
**Coastside County Water District**

BMP Form  
 Status:  
**100% Complete**

Year:  
**2004**

**A. Implementation**

**Rate Structure Data Volumetric Rates for Water Service by Customer Class**

**1. Residential**

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Increasing Block
c. Total Revenue from Volumetric Rates	\$3807415
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$511234

**2. Commercial**

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Increasing Block
c. Total Revenue from Volumetric Rates	\$923313
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$101508

**3. Industrial**

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Increasing Block
c. Total Revenue from Volumetric Rates	\$1002333
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$17496

**4. Institutional / Government**

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Increasing Block
c. Total Revenue from Volumetric Rates	\$146543
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$6804

**5. Irrigation**

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Increasing Block
c. Total Revenue from Volumetric Rates	\$570670
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$29352

**6. Other**

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Increasing Block
c. Total Revenue from Volumetric Rates	\$103698

d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources \$22212

**B. Conservation Pricing Program Expenditures**

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

**C. "At Least As Effective As"**

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

**D. Comments**

"Other" represents portable meter revenue at \$24,576 and multi-family dwelling revenue at \$687,510.

Reported as of 10/4/05

**BMP 12: Conservation Coordinator**

Reporting Unit: **Coastside County Water District**      BMP Form Status: **100% Complete**      Year: **2004**

**A. Implementation**

1. Does your Agency have a conservation coordinator? yes
2. Is this a full-time position? no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ? no
4. Partner agency's name:
5. If your agency supplies the conservation coordinator:
  - a. What percent is this conservation coordinator's position? 20%
  - b. Coordinator's Name Glenna Lombardi
  - c. Coordinator's Title Project Coordinator
  - d. Coordinator's Experience and Number of Years Water Programs for 15 years
  - e. Date Coordinator's position was created (mm/dd/yyyy) 09/01/1989
6. Number of conservation staff, including Conservation Coordinator. 1

**B. Conservation Staff Program Expenditures**

	This Year	Next Year
1. Budgeted Expenditures	34500	39950
2. Actual Expenditures	39812	

**C. "At Least As Effective As"**

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no
  - a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

**D. Comments**

Actual budget includes \$10,000 of the Conservation Coordinators salary. Actual budget for just conservation programs and materials is \$29,812. There will be a full time water conservation coordinator starting in FY 04/05.

Reported as of 10/4/05

**BMP 13: Water Waste Prohibition**

Reporting Unit:

**Coastside County Water District**

BMP Form Status:

**100% Complete**

Year:

**2004****A. Requirements for Documenting BMP Implementation**

1. Is a water waste prohibition ordinance in effect in your service area? yes

a. If YES, describe the ordinance:

Ordinance 1997-01 prohibits a range of water waste uses, practices and activities and has been in effect since 1997.

2. Is a copy of the most current ordinance(s) on file with CUWCC? yes

a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

City of Half Moon Bay, the incorporated communities of El Granada, Miramar, and Princeton	Resolution 1997-01 applies to all of these areas
---	--

**B. Implementation**

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

- |  |     |
|--|-----|
| a. Gutter flooding   | yes |
| b. Single-pass cooling systems for new connections                   | no  |
| c. Non-recirculating systems in all new conveyor or car wash systems | yes |
| d. Non-recirculating systems in all new commercial laundry systems   | no  |
| e. Non-recirculating systems in all new decorative fountains         | no  |
| f. Other, please name  | no  |

2. Describe measures that prohibit water uses listed above:

Prohibitions are enforced with written warnings and ultimately can result in disconnection of service.

**Water Softeners:**

3. Indicate which of the following measures your agency has supported in developing state law:

- |  |    |
|--|----|
| a. Allow the sale of more efficient, demand-initiated regenerating DIR models.   | no |
| b. Develop minimum appliance efficiency standards that:  |    |
| i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used.  | no |
| ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced.   | no |
| c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. | no |

4. Does your agency include water softener checks in home water audit programs? no

5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models? no

**C. Water Waste Prohibition Program Expenditures**

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

**D. "At Least As Effective As"**

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

**E. Comments**

Reported as of 10/4/05

### BMP 14: Residential ULFT Replacement Programs

Reporting Unit: **Coastside County Water District**      BMP Form Status: **100% Complete**      Year: **2004**

#### A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes

#### Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	57	0
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	0	0
<b>Total</b>	<b>57</b>	<b>0</b>

6. Describe your agency's ULFT program for single-family residences.

Customer submits application and receipts for ULFTs. An inspection is performed by a district staff member and if confirmed, the District will rebate up to \$150 per toilet or 75% of the total cost, whichever is less.

7. Describe your agency's ULFT program for multi-family residences.

Same program for MF as for SF and CII

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

City of Half Moon Bay and the unincorporated communities of El Granada, Miramar and Princeton	The District has no authority to impose a toilet retrofit on resale.
---	--

#### B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	10500	8000
2. Actual Expenditures	7564	

#### C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

#### D. Comments

The SF, MF, and CII ULFT programs are all budgeted together. For SF, \$7564 was actually spent on rebates. Next reporting year, the CII, SF, and MF budgets will be separate for easier tracking of funds.

## **Appendix E**

### **California Urban Water Conservation Council**

#### **Best Management Practice Coverage Reports for FY 2003-2004**

Reported as of 10/4/05

## BMP 01 Coverage: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:  
**Coastside County Water District**

Reporting Period:  
**03-04**

### MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

A Reporting Unit (RU) must meet three conditions to satisfy strict compliance for BMP 1.

Condition 1: Adopt survey targeting and marketing strategy on time

Condition 2: Offer surveys to 20% of SF accounts and 20% of MF units during report period

Condition 3: Be on track to survey 15% of SF accounts and 15% of MF units within 10 years of implementation start date.

### Test for Condition 1

Coastside County Water District to Implement Targeting/Marketing Program by:	1999		
		<u>Single-Family</u>	<u>Multi-Family</u>
Year Coastside County Water District Reported Implementing Targeting/Marketing Program:			
Coastside County Water District Met Targeting/Marketing Coverage Requirement:		NO	NO

### Test for Condition 2

			<u>Single-Family</u>	<u>Multi-Family</u>
Survey Program to Start by:	1998	Residential Survey Offers (%)		
Reporting Period:	03-04	Survey Offers $\geq$ 20%	NO	NO

### Test for Condition 3

	Completed Residential Surveys	
	<u>Single Family</u>	<u>Multi-Family</u>
Total Completed Surveys 1999 - 2004:		
Past Credit for Surveys Completed Prior to 1999 (Implementation of Reporting Database):		
Total + Credit	4,177	469

Residential Accounts in Base Year		
Coastside County Water District Survey Coverage as % of Base Year Residential Accounts		
Coverage Requirement by Year 7 of Implementation per Exhibit 1	7.90%	7.90%
Coastside County Water District on Schedule to Meet 10-Year Coverage Requirement	NO	NO

---

**BMP 1 COVERAGE STATUS SUMMARY:****Water supplier has not met one or more coverage requirements for this BMP.**

Reported as of 10/4/05

## BMP 02 Coverage: Residential Plumbing Retrofit

Reporting Unit:  
**Coastside County Water District**  
**MOU Exhibit 1 Coverage Requirement**

Reporting Period:  
**03-04**

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

Warning: The BMP 2 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must meet one of three conditions to satisfy strict compliance for BMP 2.

Condition 1: The agency has demonstrated that 75% of SF accounts and 75% of MF units constructed prior to 1992 are fitted with low-flow showerheads.

Condition 2: An enforceable ordinance requiring the replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts is in place for the agency's service area.

Condition 3: The agency has distributed or directly installed low-flow showerheads and other low-flow plumbing devices to not less than 10% of single-family accounts and 10% of multi-family units constructed prior to 1992 during the reporting period.

### Test for Condition 1

Report Year	Report Period	Single-Family		Multi-Family	
		Reported Saturation	Saturation > 75%?	Reported Saturation	Saturation > 75%?
1999	99-00	45.00%	NO	45.00%	NO
2000	99-00	45.00%	NO	45.00%	NO
2001	01-02	45.00%	NO	45.00%	NO
2002	01-02	46.00%	NO	48.00%	NO
2003	03-04		NO		NO
2004	03-04		NO		NO

### Test for Condition 2

Report Year	Report Period	Coastside County Water District has ordinance requiring showerhead retrofit?
1999	99-00	NO
2000	99-00	NO
2001	01-02	NO
2002	01-02	NO
2003	03-04	NO
2004	03-04	NO

### Test for Condition 3

Reporting Period: 03-04

1992 SF Accounts	Num. Showerheads Distributed to SF Accounts	Single-Family Coverage Ratio	SF Coverage Ratio > 10%
3,604	17	0.5%	NO

1992 MF Accounts	Num. Showerheads Distributed to MF Accounts	Multi-Family Coverage Ratio	MF Coverage Ratio > 10%
393			NO

---

**BMP 2 COVERAGE STATUS SUMMARY:**

Coverage status cannot be calculated. Water supplier data is missing that is required to calculate coverage status for this BMP.

Reported as of 10/4/05

## BMP 03 Coverage: System Water Audits, Leak Detection and Repair

Reporting Unit:  
Coastside County Water District

Reporting Period:  
03-04

### MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

An agency must meet one of two conditions to be in compliance with BMP 3:

Condition 1: Perform a prescreening audit. If the result is equal to or greater than 0.9 nothing more needs be done.

Condition 2: Perform a prescreening audit. If the result is less than 0.9, perform a full audit in accordance with AWWA's Manual of Water Supply Practices, Water Audits, and Leak Detection.

### Test for Conditions 1 and 2

Report Year	Report Period	Pre-Screen Completed	Pre-Screen Result	Full Audit Indicated	Full Audit Completed
1999	99-00	YES	95.8%	No	NO
2000	99-00	YES	100.0%	No	NO
2001	01-02	YES	100.0%	No	NO
2002	01-02	YES	100.0%	No	NO
2003	03-04	YES	106.9%	No	NO
2004	03-04	YES	100.0%	No	NO

### BMP 3 COVERAGE STATUS SUMMARY:

Water supplier is meeting coverage requirements for this BMP.

Reported as of 10/4/05

## **BMP 04 Coverage: Metering with Commodity Rates for all New Connections and Retrofit of Existing**

Reporting Unit:  
**Coastside County Water  
 District**

Reporting Period:  
**03-04**

### **MOU Exhibit 1 Coverage Requirement**

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

---

An agency must be on track to retrofit 100% of its unmetered accounts within 10 years to be in compliance with BMP 4.

---

### **Test for Compliance**

---

Total Meter Retrofits  
 Reported through 2004

No. of Unmetered Accounts  
 in Base Year

Meter Retrofit Coverage as  
 % of Base Year Unmetered  
 Accounts

Coverage Requirement by  
 Year 6 of Implementation per  
 Exhibit 1 42.0%

RU on Schedule to meet 10  
 Year Coverage Requirement YES

---

### **BMP 4 COVERAGE STATUS SUMMARY:**

**Water supplier is meeting coverage requirements for this BMP.**

Reported as of 10/4/05

## BMP 05 Coverage: Large Landscape Conservation Programs and Incentives

Reporting Unit:  
**Coastside County Water District**

Reporting Period:  
**03-04**

### MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

An agency must meet three conditions to comply with BMP 5.

Condition 1: Develop water budgets for 90% of its dedicated landscape meter accounts within four years of the date implementation is to start.

Condition 2: (a) Offer landscape surveys to at least 20% of its CII accounts with mixed use meters each report cycle and be on track to survey at least 15% of its CII accounts with mixed use meters within 10 years of the date implementation is to start OR (b) Implement a dedicated landscape meter retrofit program for CII accounts with mixed use meters or assign landscape budgets to mixed use meters.

Condition 3: Implement and maintain customer incentive program(s) for irrigation equipment retrofits.

#### Test for Condition 1

Year	Report Period	BMP 5 Implementation Year	No. of Irrigation Meter Accounts	No. of Irrigation Accounts with Budgets	Budget Coverage Ratio	90% Coverage Met by Year 4
1999	99-00	1	29			NA
2000	99-00	2	47			NA
2001	01-02	3	42			NA
2002	01-02	4	44			No
2003	03-04	5	44			No
2004	03-04	6	26	26	100.0%	Yes

#### Test for Condition 2a (survey offers)

Select Reporting Period: 03-04

Large Landscape Survey Offers as % of Mixed Use Meter CII Accounts

Survey Offers Equal or Exceed 20% Coverage Requirement NO

#### Test for Condition 2a (surveys completed)

Total Completed Landscape Surveys Reported through Credit for Surveys Completed Prior to Implementation of Reporting Database

Total + Credit

CII Accounts in Base Year 368

RU Survey Coverage as a % of Base Year CII Accounts Coverage Requirement by Year of Implementation per Exhibit 1 6.3%

RU on Schedule to Meet 10 Year Coverage

Requirement NO

**Test for Condition 2b (mixed use budget or meter retrofit program)**

Report Year	Report Period	BMP 5 Implementation Year	Agency has mix-use budget program	No. of mixed-use budgets
1999	99-00	1	NO	73
2000	99-00	2	NO	
2001	01-02	3	NO	
2002	01-02	4	NO	
2003	03-04	5	NO	
2004	03-04	6	NO	

Report Year	Report Period	BMP 4 Implementation Year	No. of mixed use CII accounts	No. of mixed use CII accounts fitted with irrig. meters
1999	99-00	1	344	
2000	99-00	2	424	
2001	01-02	3	440	
2002	01-02	4	443	
2003	03-04	5	420	
2004	03-04	6	404	

**Test for Condition 3**

Report Year	Report Period	BMP 5 Implementation Year	RU offers financial incentives?	No. of Loans	Total Amt. Loans
1999	99-00	1	NO		
2000	99-00	2	NO		
2001	01-02	3	NO		
2002	01-02	4	NO		
2003	03-04	5	NO		
2004	03-04	6	NO		

Report Year	Report Period	No. of Grants	Total Amt. Grants	No. of rebates	Total Amt. Rebates
1999	99-00				
2000	99-00				
2001	01-02				
2002	01-02				
2003	03-04				
2004	03-04				

**BMP 5 COVERAGE STATUS SUMMARY:**  
 Water supplier has not met one or more coverage requirements for this BMP.

Reported as of 10/4/05

## BMP 06 Coverage: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:

**Coastside County Water District**

Reporting Period:

**03-04**

### MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

An agency must meet one condition to comply with BMP 6.

Condition 1: Offer a cost-effective financial incentive for high-efficiency washers if one or more energy service providers in service area offer financial incentives for high-efficiency washers.

#### Test for Condition 1

Year	Report Period	BMP 6 Implementation Year	Rebate Offered by ESP?	Rebate Offered by RU?	Rebate Amount
1999	99-00	1	YES	NO	
2000	99-00	2	YES	NO	
2001	01-02	3	YES	YES	75.00
2002	01-02	4	YES	YES	75.00
2003	03-04	5	YES	YES	75.00
2004	03-04	6	YES	YES	75.00

Year	Report Period	BMP 6 Implementation Year	No. Rebates Awarded	Coverage Met?
1999	99-00	1		NO
2000	99-00	2		NO
2001	01-02	3	53	YES
2002	01-02	4	72	YES
2003	03-04	5	107	YES
2004	03-04	6	97	YES

#### BMP 6 COVERAGE STATUS SUMMARY:

**Water supplier is meeting coverage requirements for this BMP.**

Reported as of 10/4/05

**BMP 07 Coverage: Public Information Programs**

Reporting Unit:

**Coastside County Water District**

Reporting Period:

**03-04****MOU Exhibit 1 Coverage Requirement**

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

---

An agency must meet one condition to comply with BMP 7.

Condition 1: Implement and maintain a public information program consistent with BMP 7's definition.

---

**Test for Condition 1**

Year	Report Period	BMP 7 Implementation Year	RU Has Public Information Program?
1999	99-00	2	YES
2000	99-00	3	YES
2001	01-02	4	YES
2002	01-02	5	YES
2003	03-04	6	YES
2004	03-04	7	YES

---

**BMP 7 COVERAGE STATUS SUMMARY:****Water supplier is meeting coverage requirements for this BMP.**

Reported as of 10/4/05

**BMP 08 Coverage: School Education Programs**

Reporting Unit:

**Coastside County Water District**

Reporting Period:

**03-04****MOU Exhibit 1 Coverage Requirement**

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

An agency must meet one condition to comply with BMP 8.

Condition 1: Implement and maintain a school education program consistent with BMP 8's definition.

**Test for Condition 1**

<u>Year</u>	<u>Report Period</u>	<u>BMP 8 Implementation Year</u>	<u>RU Has School Education Program?</u>
1999	99-00	2	NO
2000	99-00	3	NO
2001	01-02	4	NO
2002	01-02	5	YES
2003	03-04	6	YES
2004	03-04	7	YES

**BMP 8 COVERAGE STATUS SUMMARY:****Water supplier is meeting coverage requirements for this BMP.**

Reported as of 10/4/05

## BMP 09 Coverage: Conservation Programs for CII Accounts

Reporting Unit:  
**Coastside County Water District**

Reporting Period:  
**03-04**

### MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

Warning: The BMP 9 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must meet three conditions to comply with BMP 9.

Condition 1: Agency has identified and ranked by use commercial, industrial, and institutional accounts.

Condition 2(a): Agency is on track to survey 10% of commercial accounts, 10% of industrial accounts, and 10% of institutional accounts within 10 years of date implementation to commence.

OR

Condition 2(b): Agency is on track to reduce CII water use by an amount equal to 10% of baseline use within 10 years of date implementation to commence.

OR

Condition 2(c): Agency is on track to meet the combined target as described in Exhibit 1 BMP 9 documentation.

### Test for Condition 1

Year	Report Period	BMP 9 Implementation Year	Ranked Com. Use	Ranked Ind. Use	Ranked Inst. Use
1999	99-00	1	NO	NO	NO
2000	99-00	2	YES	YES	YES
2001	01-02	3	YES	YES	YES
2002	01-02	4	YES	YES	YES
2003	03-04	5	YES	YES	YES
2004	03-04	6	YES	YES	YES

### Test for Condition 2a

	Commercial	Industrial	Institutional
Total Completed Surveys Reported through 2004			
Credit for Surveys Completed Prior to Implementation of Reporting Databases			
Total + Credit			
CII Accounts in Base Year	315	24	29
RU Survey Coverage as % of Base Year CII Accounts			
Coverage Requirement by Year 6 of Implementation per Exhibit 1	4.2%	4.2%	4.2%
RU on Schedule to Meet 10 Year Coverage Requirement	NO	NO	NO

### Test for Condition 2a

Year	Report Period	BMP 9 Implementation Year	Performance Target Savings (AF/yr)	Performance Target Savings Coverage	Performance Target Savings Coverage Requirement	Coverage Requirement Met
1999	99-00	1			0.5%	NO
2000	99-00	2			1.0%	NO
2001	01-02	3			1.7%	NO
2002	01-02	4			2.4%	NO
2003	03-04	5			3.3%	NO
2004	03-04	6			4.2%	NO

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#### Test for Condition 2c

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Total BMP 9 Surveys + Credit

BMP 9 Survey Coverage

BMP 9 Performance Target Coverage

BMP 9 Survey + Performance Target Coverage

Combined Coverage Equals or Exceeds Coverage Requirement?

NO

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#### **BMP 9 COVERAGE STATUS SUMMARY:**

**Coverage status cannot be calculated. Water supplier data is missing that is required to calculate coverage status for this BMP.**

Reported as of 10/4/05

**BMP 11 Coverage: Conservation Pricing**

Reporting Unit:

**Coastside County Water District**

Reporting Period:

**03-04****MOU Exhibit 1 Coverage Requirement**

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

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An agency must meet one condition to comply with BMP 11.

Agency shall maintain rate structure consistent with BMP 11's definition of conservation pricing. Implementation methods shall be at least as effective as eliminating non-conserving pricing and adopting conserving pricing. For signatories supplying both water and sewer service, this BMP applies to pricing of both water and sewer service. Signatories that supply water but not sewer service shall make good faith efforts to work with sewer agencies so that those sewer agencies adopt conservation pricing for sewer service.

a) Non-conserving pricing provides no incentives to customers to reduce use. Such pricing is characterized by one or more of the following components: rates in which the unit price decreases as the quantity used increases (declining block rates); rates that involve charging customers a fixed amount per billing cycle regardless of the quantity used; pricing in which the typical bill is determined by high fixed charges and low commodity charges.

b) Conservation pricing provides incentives to customers to reduce average or peak use, or both. Such pricing includes: rates designed to recover the cost of providing service; and billing for water and sewer service based on metered water use. Conservation pricing is also characterized by one or more of the following components: rates in which the unit rate is constant regardless of the quantity used (uniform rates) or increases as the quantity used increases (increasing block rates); seasonal rates or excess-use surcharges to reduce peak demands during summer months; rates based upon the longrun marginal cost or the cost of adding the next unit of capacity to the system.

**Test for Condition 1**


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Year	Report Period	RU Employed Non Conserving Rate Structure	RU Meets BMP 11 Coverage Requirement
1999	99-00	YES	NO
2000	99-00	NO	YES
2001	01-02	NO	YES
2002	01-02	NO	YES
2003	03-04	NO	YES
2004	03-04	NO	YES

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**BMP 11 COVERAGE STATUS SUMMARY:****Water supplier is meeting coverage requirements for this BMP.**

Reported as of 10/4/05

**BMP 12 Coverage: Conservation Coordinator**

Reporting Unit:  
**Coastside County Water District**

Reporting Period:  
**03-04**

**MOU Exhibit 1 Coverage Requirement**

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

Agency shall staff and maintain the position of conservation coordinator and provide support staff as necessary.

**Test for Compliance**

Report Year	Report Period	Conservation Coordinator Position Staffed?	Total Staff on Team (incl. CC)
1999	99-00	YES	1
2000	99-00	YES	1
2001	01-02	YES	1
2002	01-02	YES	1
2003	03-04	YES	1
2004	03-04	YES	1

**BMP 12 COVERAGE STATUS SUMMARY:**

**Water supplier is meeting coverage requirements for this BMP.**

Reported as of 10/4/05

**BMP 13 Coverage: Water Waste Prohibition**

Reporting Unit:

**Coastside County Water District**

Reporting Period:

**03-04****MOU Exhibit 1 Coverage Requirement**

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?

No

An agency must meet one condition to comply with BMP 13.

Implementation methods shall be enacting and enforcing measures prohibiting gutter flooding, single pass cooling systems in new connections, non-recirculating systems in all new conveyer car wash and commercial laundry systems, and non-recycling decorative water fountains.

**Test for Condition 1****Agency or service area prohibits:**

Year	Gutter Flooding	Single-Pass Cooling Systems	Single-Pass Car Wash	Single-Pass Laundry	Single-Pass Fountains	Other	RU has ordinance that meets coverage requirement
1999	yes	no	yes	no	yes	yes	NO
2000	yes	no	yes	no	yes	no	NO
2001	yes	no	yes	no	no	no	NO
2002	yes	no	yes	no	no	no	NO
2003	yes	no	yes	no	no	no	NO
2004	yes	no	yes	no	no	no	NO

**BMP 13 COVERAGE STATUS SUMMARY:****Water supplier has not met one or more coverage requirements for this BMP.**

Reported as of 10/4/05

## BMP 14 Coverage: Residential ULFT Replacement Programs

Reporting Unit: **Coastside County Water District**

### MOU Exhibit 1 Coverage Requirement

A Reporting Unit (RU) must meet one of the following conditions to be in compliance with BMP 14.

Condition 1: Retrofit-on-resale (ROR) ordinance in effect in service area.

Condition 2: Water savings from toilet replacement programs equal to 90% of Exhibit 6 coverage requirement.

An agency with an exemption for BMP 14 is not required to meet one of the above conditions. This report treats an agency with missing base year data required to compute the Exhibit 6 coverage requirement as out of compliance with BMP 14.

### Status: Water supplier has not met one or more coverage requirements for this BMP. as of 2004

Coverage Year	BMP 14 Data Submitted to CUWCC	Exemption Filed with CUWCC	ROR Ordinance in Effect	Exhibit 6 Coverage Req'mt (AF)	Toilet Replacement Program Water Savings* (AF)
1998	Yes			31.20	211.12
1999	Yes	No	No	85.15	249.13
2000	Yes	No	No	155.41	290.48
2001	Yes	No	No	237.07	331.85
2002	Yes	No	No	326.40	373.23
2003	Yes	No	No	420.57	414.70
2004	Yes	No	No	517.45	456.02
2005	No	No	No	615.45	
2006	No	No	No	713.36	
2007	No	No	No	810.32	

\*NOTE: Program water savings listed are net of the plumbing code. Savings are cumulative (not annual) between 1991 and the given year. Residential ULFT count data from unsubmitted forms are NOT included in the calculation.

### BMP 14 COVERAGE STATUS SUMMARY:

**Water supplier has not met one or more coverage requirements for this BMP.**

## Appendix F

### Coastside County Water District Water Quantity Charges

#### Water Usage Scale for Residential Customers

	0-20	21-40	41-60	61-80	81-100	101-120	121-140	141-160	161-180	181-200
<b>1</b>	2.88	64.25	143.82	245.62	347.42	449.22	551.02	652.82	754.62	856.42
<b>2</b>	5.76	67.42	148.91	250.71	352.51	454.31	556.11	657.91	759.71	861.51
<b>3</b>	8.64	70.59	154.00	255.80	357.60	459.40	561.20	663.00	764.80	866.60
<b>4</b>	11.52	73.76	159.09	260.89	362.69	464.49	566.29	668.09	769.89	871.69
<b>5</b>	14.40	76.93	164.18	265.98	367.78	469.58	571.38	673.18	774.98	876.78
<b>6</b>	17.28	81.05	169.27	271.07	372.87	474.67	576.47	678.27	780.07	881.87
<b>7</b>	20.16	85.17	174.36	276.16	377.96	479.76	581.56	683.36	785.16	886.96
<b>8</b>	23.04	89.29	179.45	281.25	383.05	484.85	586.65	688.45	790.25	892.05
<b>9</b>	26.21	93.41	184.54	286.34	388.14	489.94	591.74	693.54	795.34	897.14
<b>10</b>	29.38	97.53	189.63	291.43	393.23	495.03	596.83	698.63	800.43	902.23
<b>11</b>	32.55	101.65	194.72	296.52	398.32	500.12	601.92	703.72	805.52	907.32
<b>12</b>	35.72	105.77	199.81	301.61	403.41	505.21	607.01	708.81	810.61	912.41
<b>13</b>	38.89	109.89	204.90	306.70	408.50	510.30	612.10	713.90	815.70	917.50
<b>14</b>	42.06	114.01	209.99	311.79	413.59	515.39	617.19	718.99	820.79	922.59
<b>15</b>	45.23	118.13	215.08	316.88	418.68	520.48	622.28	724.08	825.88	927.68
<b>16</b>	48.40	122.25	220.17	321.97	423.77	525.57	627.37	729.17	830.97	932.77
<b>17</b>	51.57	126.37	225.26	327.06	428.86	530.66	632.46	734.26	836.06	937.86
<b>18</b>	54.74	130.49	230.35	332.15	433.95	535.75	637.55	739.35	841.15	942.95
<b>19</b>	57.91	134.61	235.44	337.24	439.04	540.84	642.64	744.44	846.24	948.04
<b>20</b>	61.08	138.73	240.53	342.33	444.13	545.93	647.73	749.53	851.33	953.13

**Commercial Rate:**  
\$3.92 Per Hundred Cubic Feet

**Residential Rates:**

0 to 8	HCF	\$2.88
9 to 25	HCF	\$3.17
26 to 40	HCF	\$4.12
41 or more	HCF	\$5.09

**Bi-Monthly Base Charge**

5/8"	Meter	\$17.60
3/4"	Meter	\$26.47
1"	Meter	\$44.11
1 1/2"	Meter	\$85.19
2"	Meter	\$141.19
3"	Meter	\$308.86
4"	Meter	\$1,059.06

**Effective Billing Date:** September 2005

*Applies to all bills based on meter readings made on or after September 14, 2005.*

**1 UNIT = 748 GALLONS = 100 CUBIC FEET**

**Effective By:** Resolution No.: 2005-12

**Increase to Residential & Commercial:**  
15% Commodity  
15% Base